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Towards an inclusive environmental governance model: Analysing the interface between the Arganeraie Biosphere Reserve (Morocco) and two local communities

María del Carmen Romera Puga

PhD Thesis/ 2022

PhD in Environmental Science and Technology

Institut de Ciència i Tecnologia Ambientals – Universitat Autònoma de Barcelona (ICTA-UAB)

Supervisors: Roser Maneja (CTFC/UAB), Pablo Dominguez (CNRS/UAB) and Said Boujrouf (LERMA-UCAM)

Tutor: Esteve Corbera (ICTA-UAB)



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Berber proverb: *"The tree whose roots reach the river does not need rain"*

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ABSTRACT

This thesis draws on post-normal conservation science and environmental governance studies to investigate environmental governance processes within the Arganeraie Biosphere Reserve (RBA) in Morocco and two of its rural local communities and *agdals* (ICCAs); and shed light on their outcomes and challenges to date. The analysis focuses on the interface between two practical approaches to environmental governance to address inclusive environmental governance (IEG), exploring simultaneously the relationship from a biosphere reserve's and a local communities' perspective from an inductive approach which embraces multiple scales and knowledge systems.

The original pluralistic integrative approach implemented has succeeded to capture much of the complexity and nuances inherent to the multiple scales, knowledges and worldviews. First, the biosphere reserve institutional approach to environmental governance has been analysed. Second, the bottom-up processes of governance in two rural local communities have been investigated. Third, the interface between the biosphere reserve and the two local communities has been examined through the identification of the constraints and synergies of their own approaches to governance.

The main findings point out that: (i) the RBA and the *agdal* system are perceived as the most appropriate opportunity for most actors at all levels; (ii) IEG is considered feasible; (iii) the current low strategic priority and the weak political will hinder IEG at RBA and community levels, blocking a robust global-local interface. After analysing the main influencing factors of IEG at the local, RBA and interface levels, the principal conclusions are: (i) inclusivity is still far from being achieved due to unspoken behavioural constraints; (ii) ethnographic and holistic approaches are apt to uncover many of the underlying hidden factors that have been overlooked to date. Thus, to advance towards IEG in the Arganeraie, these influencing factors should be simultaneously addressed and integrated from the bottom-up and from the top-down.

Lastly, further multidisciplinary and interdisciplinary research is essential to better understand and manage these hidden conditioning factors that ultimately affect human-nature relationships beyond cultures and disciplines.

Keywords: argan, *agdal*, biosphere reserve, community conservation, inclusive environmental governance, perceptions.

RESUMÉ

Cette thèse s'appuie sur les études post-normales de la science de la conservation et de la gouvernance environnementale pour étudier les processus de gouvernance environnementale au sein de la Réserve de Biosphère de l'Arganeraie (RBA) au Maroc et de deux de ses communautés locales rurales et *agdals* (APACs); ainsi que de mettre en lumière leurs résultats et leurs défis à ce jour. L'analyse se concentre sur l'interface entre deux approches pratiques de la gouvernance environnementale pour aborder la gouvernance environnementale inclusive (GEI), en explorant simultanément la relation du point de vue d'une réserve de biosphère et d'une communauté locale à partir d'une approche inductive qui englobe de multiples échelles et systèmes de connaissances.

L'approche pluraliste intégrative originale mise en œuvre a réussi à capturer une grande partie de la complexité et des nuances inhérentes aux multiples échelles, savoirs et visions du monde. Premièrement, l'approche institutionnelle de la gouvernance environnementale des réserves de biosphère a été analysée. Deuxièmement, les processus ascendants de gouvernance dans deux communautés locales rurales ont été étudiés. Troisièmement, l'interface entre la réserve de biosphère et les deux communautés locales a été examinée à travers l'identification des contraintes et des synergies de leurs propres approches de la gouvernance.

Les principaux résultats soulignent que: (i) la RBA et le système *agdal* sont perçus comme l'opportunité la plus appropriée pour la plupart des acteurs à tous les niveaux; (ii) la GEI est considérée comme faisable; (iii) la faible priorité stratégique actuelle et la faible volonté politique entravent la GEI au niveau de la RBA et des communautés, ce qui bloque une interface globale-locale robuste. Après avoir analysé les principaux facteurs d'influence de la GEI au niveau local, de la RBA et de l'interface, les principales conclusions sont les suivantes: (i) l'inclusion est encore loin d'être atteinte en raison de contraintes comportementales tacites; (ii) les approches ethnographiques et holistiques sont appropriées pour découvrir de nombreux facteurs sous-jacents cachés qui ont été négligés jusqu'à présent. Ainsi, pour progresser vers la GEI dans l'Arganeraie, ces facteurs d'influence doivent être simultanément abordés et intégrés de bas en haut et de haut en bas.

Enfin, d'autres recherches multidisciplinaires et interdisciplinaires sont essentielles pour mieux comprendre et gérer ces facteurs de conditionnement cachés qui affectent finalement les relations personne-nature au-delà des cultures et des disciplines.

Mots-clés : argan, *agdal*, réserve de biosphère, conservation communautaire, gouvernance environnementale inclusive, perceptions.

RESÚMEN

Esta tesis se basa en la ciencia de la conservación y los estudios de gobernanza ambiental post-normales para investigar los procesos de gobernanza ambiental dentro de la Reserva de la Biosfera de la Arganareda (RBA) en Marruecos y dos de sus comunidades locales rurales y *agdales* (ICCA); y proporcionar luz sobre sus resultados y desafíos hasta la fecha. El análisis se centra en la interfaz entre dos enfoques empíricos de gobernanza ambiental para abordar la gobernanza ambiental inclusiva, explorando simultáneamente la relación desde la perspectiva de una reserva de biosfera y la de las comunidades locales, a partir de un enfoque inductivo que abarca múltiples escalas y sistemas de conocimiento.

El original enfoque integrador pluralista aplicado ha logrado captar gran parte de la complejidad y los matices inherentes a las múltiples escalas, conocimientos y cosmovisiones. En primer lugar, se ha analizado el enfoque institucional de gobernanza ambiental de la reserva de la biosfera. En segundo lugar, se han investigado los procesos ascendentes (*bottom-up*) de gobernanza en dos comunidades locales rurales. En tercer lugar, se ha examinado la interfaz entre la reserva de biosfera y las dos comunidades locales mediante la identificación de las limitaciones y sinergias de sus propios enfoques de la gobernanza.

Las principales conclusiones señalan que: (i) la RBA y el sistema *agdal* se perciben como la oportunidad más adecuada para la mayoría de los actores a todos los niveles; (ii) la gobernanza ambiental inclusiva se considera factible; (iii) la baja prioridad estratégica actual y la escasa voluntad política obstaculizan la gobernanza ambiental inclusiva a nivel de la RBA y de la comunidad, bloqueando una sólida interfaz global-local. Tras analizar los principales factores que influyen en la gobernanza ambiental inclusiva a nivel local, RBA y de interfaz, las principales conclusiones son (i) la inclusividad aún está lejos de alcanzarse debido a condicionamientos tácitos de comportamiento; (ii) los enfoques etnográficos y holísticos son aptos para descubrir muchos de los factores ocultos subyacentes que se han pasado por alto hasta la fecha. Así pues, para avanzar hacia la gobernanza ambiental inclusiva en la Arganareda, estos factores influyentes deben abordarse e integrarse simultáneamente de abajo a arriba y de arriba a abajo.

Por último, es esencial seguir realizando investigaciones multidisciplinarias e interdisciplinarias para comprender y gestionar mejor estos condicionantes ocultos que, en última instancia, afectan a las relaciones entre las personas y la naturaleza más allá de las culturas y las disciplinas.

Palabras clave: argán, *agdal*, reserva de la biosfera, conservación comunitaria, gobernanza ambiental inclusiva, percepciones.

ACRONYMS

AABRI	Arab-African Biosphere Reserve Initiative
ABH-SM	Agence du Bassin Hydraulique du Souss-Massa
ADA	Agence pour le Développement Agricole
ADEPE	Association pour le développement durable, l'écologie et la préservation de l'environnement
ADL	Association de Développement Locale
ADS	Agence de Développement Social
AESVT	Association d'Enseignants de Sciences de Vie et de la Terre
AMIGHA	Association Marocaine de l'Indication Géographique de l'Huile d'Argane
ANDZOA	Agence Nationale de Développement des Zones des Oasis et de l'Arganier
APACs	Aires de Patrimoine Autochtone et Communautaire
AT	Aichi Targets
BNC	Biological Resource-Based Niche Commodities
BR	Biosphere Reserve
CBD	Convention on Biological Diversity
CBG	Community-Based Governance
CBNRM	Community-Based Natural Resource Management
CCAs	Community Conserved Areas
CEEAH-UAB	Comissió d'Ètica en l'Experimentació Animal i Humana de la Universitat Autònoma de Barcelona
CEE-ONU	Commission Économique pour l'Europe, Nations Unies
CG	Community Governance
CGS	Communal Governance Systems
CHM-CBD	Clearing-House Mechanism - Convention on Biological Diversity
CIA	Congrès National de l'Arganier
CLIP Analysis	Analysis of the relationships of Collaboration and/or Conflict-Competence, Legitimacy, Interest and Power
CNA	Centre National de l'Arganier
CR / RC	Commune Rural / Rural Commune

CSC	Centre de Santé Communale
CSCA	Centre de Santé Communale avec accouchement
CSR	Centre de Santé Rural
CSU	Centre de Santé Urbain
DARED	Projet de développement de l'Arganiculture en environnement dégradé
DPA	Direction Provincial de l'Agriculture
DPEFLCD	Direction Provinciale des Eaux et Forêts et de la Lutte Contre la Désertification
DR	Dispensaire Rural
DRA-SM	Direction Régional de l'Agriculture Souss Massa
DREFLCD-SO	Direction Régionale des Eaux et Forêts et de la Lutte Contre la Désertification Sud-Ouest
DRE-SM	Direction Régionale de l'Environnement Souss-Massa
DSE	Department for Sustainability and Development, Melbourne
ENAM	École Nationale d'Agriculture de Meknès
ENFI	Ecole Nationale Forestière d'Ingénieurs
FAO	Food and Agriculture Organization, United Nations
FCCC	Framework Convention on Climate Change, United Nations
FIFARGANE	Fédération Interprofessionnelle de la Filière Argan
FMTEC	Fédération Marocaine des Transformateurs, Exportateurs et Commerçants d'huile d'argan
FNADUA	Fédération Nationale des associations provinciales des Ayant-Droit producteurs et Usagers de l'Arganeraie
GB	Governing body
GDP	Gross Domestic Product
GEF	Global Environment Fund
GIE / EIG	Groupement d'Intérêt Economique / Economic Interest Group
GIZ	German development agency. Deutsche Gesellschaft für Internationale Zusammenarbeit -GIZ- (former GTZ, Gesellschaft für Technische Zusammenarbeit)
GoBi	Governance of Biodiversity Project
HCEFLCD	Haut-Commissariat aux Eaux et Forêts et à la Lutte contre la Désertification
HCP-RGPH	Haut-Commissariat au Plan - Recensement Général de la Population et de l'Habitat du Maroc

IAV	Institut Agronomique et Vétérinaire Hassan II
ICCAc	ICCA Consortium
ICCA-GSI initiative	Global Support Initiative for Indigenous peoples and Community-based Conservation Areas
ICCAs	Indigenous peoples and Community-based Conserved Areas
ICC-MAB	International Coordinating Council of MAB
ICTA-UAB	Institut de Ciència i Tecnologia Ambientals, Universitat Autònoma de Barcelona
IEG	Inclusive Environmental Governance
IESCO	Islamic Educational, Scientific and Cultural Organization. Also spelled as ISESCO
IGP / PGI	Indication Géographique Protégée / Protected Geographical Indication
IISD	International Institute for Sustainable Development
ILK	Indigenous and Local Knowledge
ILO	International Labour Organisation
INALCO	Institut National des Langues et Civilisations Orientales
INDH	Initiative Nationale pour le Développement Humain
INRA	Institut National de Recherche Agricole
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCAs	Indigenous Protected and Conserved Areas
IPCC	Intergovernmental Panel on Climate Change
IRAT-SM	Inspection Régionale de l'Aménagement du Territoire, de l'eau et de l'environnement de Souss Massa
IRCAM	Institut Royal de la Culture Amazighe, Maroc
ITK	Indigenous Technical Knowledge
IUCN	International Union for Conservation of Nature
IUCN WCPA	IUCN World Programme on Protected Areas
LASEG	Laboratory for the Analysis of Social-Ecological Systems in a Globalised world
LC	Local Communities
LEK	Local Ecological Knowledge
LERMA	Laboratoire des Études sur les Ressources, les Mobilités et l'Attractivité

MAB	Programme Man and the Biosphere Programme. Also spelled as MaB
MAB-IHP Initiative	Man and the Biosphere Programme (MAB) and the International Hydrological Programme (IHP) Initiative
MAD	Moroccan Dirham. Also referred to as DH or dh
MAPM	Ministère de l'Agriculture et de la Pêche Maritime, Maroc
MASL	Metres Above Sea Level
MIGDEV	Association Migrations & Développement
NGOs	Non-Governmental Organisations
NRM	Natural Resource Management
OECMs	Other Effective area-based Conservation Measures
ORMVASM	Office Régional de Mise en Valeur Agricole Souss Massa
PAC	Plan d'Action Communal
PACA	Network -Provence, Alps, Côte d'Azur-
PAM	Plantes Aromatiques et Médicinales
PAN-LCD	Programme d'Action National de Lutte Contre la Désertification
PAR	Participatory Action Research
PAs	Protected Areas
PCDA	Projet Conservation et Développement de l'Arganeraie
PEC_SM	Projet «Approche d'Economie Circulaire pour la Conservation de l'Agrobiodiversité dans la région du Souss Massa au Maroc»
PGIS	Participatory Geographic Information System or participatory mapping
PMF-FEM	Programme de Micro Financement du Fond de l'Environnement Mondial
PNSM	Parc National Souss Massa
PNUD / UNDP	Programme des Nations Unies pour le Développement / United Nations Development Programme
POW	Program of Work
PSS_APAC	Projet de Soutien Stratégique aux Aires et territoires du Patrimoine Autochtone et Communautaire
RARBA	Réseau des Associations de la Réserve de Biosphère de l'Arganeraie
RBA	Réserve de Biosphère de l'Arganeraie
RBCA	Réserve de Biosphère du Cèdre d'Atlas
RBIM	Réserve de Biosphère Intercontinentale de la Méditerranée

RBOSM	Réserve de Biosphère des Oasis du Sud Marocain
RDTR	Réseau de Développement du Tourisme Rural
REFAM	Projet Renforcement Économique des Femmes de la Filière Arganière au Maroc
S.O.	Specific Objectives
SABR	Strengthening of the Argan Biosphere Reserve
SAS	Social Analysis Systems
SCIRO	Commonwealth Scientific and Industrial Research Organisation
SDGs	Sustainable Development Goals, United Nations
SDR	Société de Développement Régional de Tourisme Rural
SES	Social-Ecological Systems
SGP-GEF	Small Grants Programme - Global Environment Fund
SIBEs	Sites d'Intérêt Biologique et Écologique
SMEs	Small and Medium Enterprises
SRAT	Schéma Régional d'Aménagement du Territoire
SWOT	Strengths, Weaknesses, Opportunities, Threats
TEK	Traditional Ecological Knowledge
TITLE-ABS-KEY	Search by title, abstract and key words
TLK	Traditional Local Knowledge
UCAM	Université Cadi Ayyad de Marrakech
UCFA	Union des Coopératives des Femmes de l'Arganier pour la production et la commercialisation de l'huile d'Argane et des produits agricoles
UICN-Med	Centro de Cooperación del Mediterráneo de la UICN
UIZ	Université Ibn Zohr
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environment Programme
UNEP-WCMC	UN Environment Programme - World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO ICH	Representative List of the Intangible Cultural Heritage of Humanity, UNESCO

WCNP	World Congress on National Parks and Protected Areas
WNBR	World Network of Biosphere Reserves
WPC	World Parks Congress

1. INTRODUCTION

The **Global Change scenario** of non-precedent global climate and biodiversity coupled crisis (IPBES and IPCC, 2021; IUCN, 2019) is closely linked with human economic activities which are triggering significant changes in the fundamental planetary biophysics (Crutzen, 2002; Steffen et al., 2011, 2007). The transgression of biophysical limits is menacing critical planetary thresholds (Barnosky et al., 2012; Lenton, 2013; Rockström et al., 2009; Steffen et al., 2015) to a point where social-ecological systems¹ may experience abrupt unpredictable changes (Gunderson and Holling, 2002). The recently (June 2021) presented IPBES-IPCC co-sponsored workshop report on Biodiversity and Climate Change (IPBES and IPCC, 2021) is a clear sign that the political environment is changing in some countries due to sound scientific evidence and increasing public concern about the twin crises of biodiversity and climate (Watson et al., 2019). Scientists warn society and politicians that **climate-biodiversity global crises** mutually reinforce each other to a point where they must be tackled together if we aim to resolve them successfully (IPBES and IPCC, 2021; IUCN, 2019).

Authors like Chaffin et al. (2016) talk about a new epoch, the **Anthropocene**, in which the current globalized society also faces historically unprecedented processes of change. Colecchia (2019) highlights, as some of the most relevant processes of change, the following: (1) the acceleration of economic processes and the international geopolitical conjunctures which are causing deep territorial transformations, (2) the disintegration of the social fabric, and (3) the development of multi-ethnic and multicultural communities. In this line, Allen et al. (2011) warns that the challenges that humans face today are different from past ones in that few are wholly local. In parallel, there is sound evidence and increasing international recognition on the key role that local communities and indigenous peoples play in the equilibrium and resilience of social-ecological systems globally and also the risks that globalisation processes may pose to them (IPBES, 2017; IUCN, 2019; UNEP-WCMC and ICCA Consortium, 2021).

The aforementioned context of global change has sparked critical reflection of humanity's roles and responsibilities for the environment (Balázs et al., 2019). Despite increasing recognition of human dependence on natural systems, uncertainty exists about how to achieve a balance between human well-being and ecosystem integrity (Fischer et al., 2015). Under this global scenario, it is important to understand and address the connection between protected areas (PAs), particularly those integrating **human-nature connectedness**, and local communities (LCs). Environmental Governance of social-ecological systems (SES) in a scenario of Global Change offers a good conceptual approach to frame this connection while acknowledging other relevant background issues like **uncertainty, complexity, resilience or multiple scales and levels**, among others.

1.1. INTERLINKED KEY CONCEPTS UNDER THE SOCIAL-ECOLOGICAL SYSTEMS LENS

The social-ecological systems lens draws on many concepts and approaches (Berkes, 2016). Some of the most relevant to this research are uncertainty, complexity, adaptiveness, resilience, multiple scales and multiple levels.

¹ Berkes et al. (1998) started to use the term "social-ecological" system to emphasize the integrated concept of humans in nature and to stress that the delineation between social and ecological systems is artificial and arbitrary (Folke et al., 2005).

Uncertainty, in its most basic sense, is understood as the lack of certain and clear knowledge about something (RAE, 2021). However, in the research, policy and social-ecological arenas, this is not so straightforward and multiple definitions exist depending, among other criteria, on the perspective adopted (Funtowicz and Ravetz, 1994; Tannert et al., 2007). In 1921, Frank Knight distinguished uncertainty from risk with uncertainty being lack of knowledge which is immeasurable and impossible to calculate (Knight, 1921). A broader sense of uncertainty that may be insightful in the context of this research is the taxonomy of uncertainty approached from an ethics perspective presented by Tannert et al. (2007), as depicted in Fig. 1.

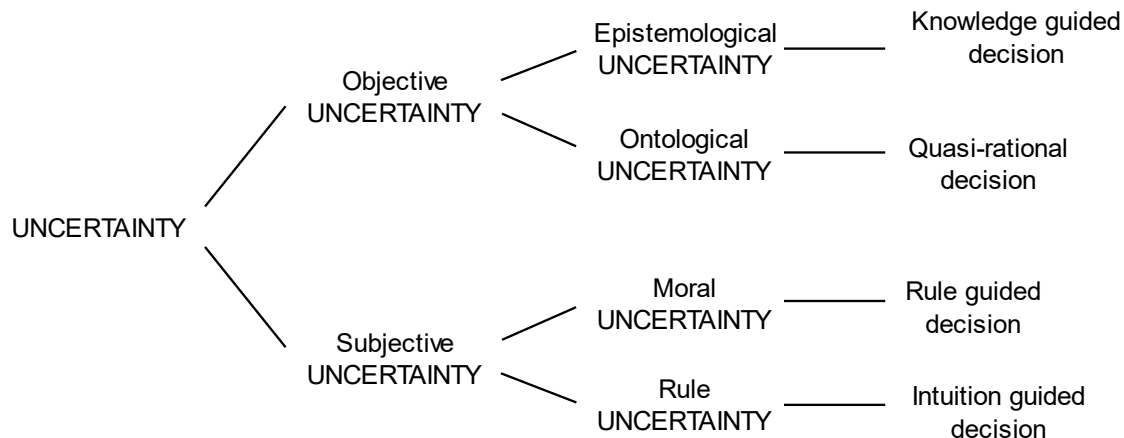


Figure 1: A taxonomy of uncertainty. Adapted from Tannert et al. (2007).

Gunderson and Holling (2002) and Berkes et al. (2003) highlight the inherent unpredictability of the so-called sustainable futures, rejecting the idea that sustainability can be planned rationally. Overall, implications of complex systems thinking suggest the need for a new scientific paradigm that challenges classical notions of control and prediction (Berkes et al., 2003). The authors note that the best bet for sustainability involves capability for self-organisation and capacity for learning and adaptation (Berkes et al., 2003), two characteristics of resilience. Societies may enhance their capacity to anticipate and manage expected changes and influence future pathways by building resilience in social-ecological systems (Chaffin et al., 2016). New **environmental governance** structures are emerging aiming to adapt to new conditions (Schultz et al., 2015).

Considering **complexity**, in the way towards sustainability, it has become increasingly important to develop new conceptual frames to understand complex dynamics of social and ecological systems (Berkes et al., 2003). We should not underestimate the fact that natural systems and social systems are complex systems in themselves. Furthermore, many of current environmental problems involve the additional complexity of interactions between natural and social systems (Berkes et al., 1998; Norgaard, 1994); which means that SES act as complex adaptive systems (Berkes et al., 2003; Costanza et al., 2001; Gunderson and Holling, 2002; Waltner-Toews and Kay, 2005). Some authors note that if human system components are added to the puzzle of ecological systems, the level of problem may escalate from complex (i.e. they do have solutions, although dependent on socio-temporal context) to wicked (i.e. they are resistant to solutions) (Berkes et al., 2003; Brunson, 2012), which seems to be the reality of most current social-environmental challenges.

Concerning **adaptiveness and learning**, Berkes et al. (2003) investigate how human societies deal with change in coupled SES and build capacity to adapt to change. The authors conclude emphasizing “the need to learn to live with change and uncertainty; to nurture diversity for resilience; to combine

different types of knowledge for learning about complex systems; and to create opportunity for self-organisation towards social-ecological sustainability". That is, the need for adaptive governance and adaptive management (Dietz et al., 2003; Holling, 1978) in which governance and management processes may improve through adaptability, flexibility and capacity to deal with uncertainty. Principles of adaptive management of SES include: maintaining diversity and redundancy, managing connectivity, managing slow variables and feedbacks, fostering complex adaptive systems thinking, encouraging learning, broadening participation, and promoting polycentric governance systems (Biggs et al., 2012).

In turn, adaptive governance and adaptive management depend on continuous adaptive social and institutional learning (Gunderson, 1999; Walters, 1986) while they encounter additional challenges in the area of institutions (Berkes et al., 2003) such as how to analyse critical linkages in SES or how to interpret, respond to, and manage feedbacks from complex systems across scales (Folke et al., 2007, 1998).

Holling (1973) introduced the **resilience** concept in the ecological literature as a way to understand nonlinear dynamics, such as the processes by which ecosystems maintain themselves in the face of perturbations and change (Gunderson, 2000). The Resilience Alliance (2015) highlights three defining characteristics of resilience; that is: (i) the amount of change the system can undergo and still retain the same controls on function and structure, or still be in the same state, within the same domain of attraction; (ii) the degree to which the system is capable of self-organisation; and (iii) the ability to build and increase the capacity for learning and adaptation. In short, resilience describes the degree to which the system is capable of self-organisation, learning and adaptation (Gunderson and Holling, 2002; Holling, 1973; Walker et al., 2004). Berkes (2016) defined resilience of SES as "the ability of a system to maintain overall function and structure, despite unexpected shocks to that system".

The interrelationships of changes impacting different domains, such as ecosystems, conservation institutions or local communities, combined with conservation initiatives, should be examined across **multiple scales** (Berkes, 2016). Scale usually refers to time (temporal continuum and timelines) and space (spatial or geographical scales), although the socio-political scale is also relevant to this research. Given my focus on the interplay of local, regional and national scale environmental governance systems, it is crucial to consider and address variations across scales and cross-boundary approaches, as stated by Berkes (2016). This is crucial because it depends on how (resource management) challenges and priorities are set and perceived in a local setting (e.g. rights-holders' families) usually diverge significantly from those of a broader scale (e.g. national and regional public institutions, big private companies or international markets).

In parallel to the idea of scale, Berkes (2016) defines the idea of **level** as "a specific point along a scale, or a unit of analysis within a scale". The author argues that analysing a community or governance system through a SES lens means examining cross-scale linkages and environmental governance, and "leads to an understanding of the interplay between high-level enabling policies and approaches and local-level environmental initiatives" (Berkes, 2016:3). Which is somehow what this thesis is all about. Namely, within a spatial scale, a local community or ICCA is at the small spatial scale when compared with a large biosphere reserve or a national park for example. They relate to two different levels of the spatial scale. In the context of SES and the present research, the idea of **multiple levels** along a scale is particularly relevant when referred to levels of environmental governance (i.e. spatial and socio-political scales); for example, high-level governmental policy versus local-level community and customary governance.

1.2. PROTECTED AREAS / UNESCO BR / ARGANERAIE BR

Protected areas (PAs) are clearly defined geographical spaces, recognised, dedicated, and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values (Dudley, 2008). However the 2020 Protected Planet Report (UNEP-WCMC et al., 2021) is the first in the series to include data on other effective area-based conservation measures (OECMs)² in addition to national protected areas *per se* (see Fig. 2 for the global reported coverage of terrestrial PAs and OECMs).



Figure 2: Distribution of the world's protected areas and other effective area-based conservation measures (OECMs) in the May 2021 World Database on Protected Areas (WDPA) and World Database on OECMs (WD-OECM). Source: UNEP-WCMC et al. (2021).

Nevertheless, the world's protected areas are distributed unevenly across the planet, with their placement constrained by the needs of people. Namely, the designation of protected areas is often biased toward areas that are unattractive for other human uses (Barr et al., 2011), creating an uneven distribution of protection and leaving many vulnerable species (Rodrigues et al., 2004) and habitats (Fuller et al., 2010) with little or no formal protection (Barr et al., 2011). In addition, in many sites, access and use restrictions imposed by PAs may negatively impact the livelihoods and food security of local inhabitants and users (Gill et al., 2019), may fail to adequately decrease human pressure within PA boundaries (Jones et al., 2018; Veldhuis et al., 2019) or may impact negatively human pressure into other areas beyond PA boundaries (Lewison et al., 2019 in Mouillot et al., 2020). The distribution of costs and benefits of PAs for local people and users may explain why the establishment of PAs is still lagging and poorly accepted in some places compared to others (Watson et al., 2014). Sound advances

² Although Aichi Target 11 refers to 'systems of protected areas and other effective area-based conservation measures', OECMs were not formally defined until 2018 (UNEP-WCMC et al., 2021).

in this regard require a better understanding of the social and environmental factors that promote or inhibit the creation of and effectiveness of PAs (Dinerstein et al., 2019; Mouillot et al., 2020).

Linked to the concept of PAs worldwide, there is that of UNESCO Biosphere Reserves. Biosphere reserves (BRs) are areas of terrestrial and/or coastal-marine ecosystems internationally recognised within the framework of UNESCO Man and the Biosphere (MAB) Programme (Ishwaran et al., 2008:122) and connected through the World Network of Biosphere Reserves (WNBR). BRs may or may not be strictly considered as PAs, as they are not necessarily considered or integrated into national legal frameworks related to PAs. But they do fall into the category of “protected and conserved areas” because they seek to promote solutions reconciling the conservation of biodiversity with its sustainable use at local and regional levels. The Seville Strategy specifically notes that “biosphere reserves are established to promote and demonstrate a balanced relationship between humans and the biosphere” (UNESCO, 1996).

On the occasion of the 50th anniversary of UNESCO MAB Programme (year 2021), BRs continue to play a unique role in tackling the Sustainable Development Goals (SDGs) (UNESCO, 2018a), in particular the SDG 15, dedicated to the quality of life on Earth. In the context of the United Nations Decade on Biodiversity (2011-2020), (i) UNESCO, a partner agency of IPBES, is also contributing actively to the implementation of the Convention on Biological Diversity (CBD) and (ii) the UNESCO MAB Programme aims at the conservation of biological diversity and a sustainable and equitable sharing of resources (UNESCO, 2018b). Besides, the two UNESCO’s global priorities, namely Africa and Gender equality, considered in its medium-term strategy (2014-2021) are addressed by this research.

BRs are “essentially an attempt to make conservation ... more relevant to human needs, and more socially and economically acceptable to the populations concerned” (Batisse, 1982). However, in order for UNESCO to develop innovative solutions in its WNBR it is necessary to share values such as cooperation, respect for diversity, and intergenerational solidarity (UNESCO, 2018b). An additional challenge still to be achieved is the fact that the term Biosphere Reserve remains a great concept of challenging implementation due to the complexity involving the link between BRs and local communities.

The Arganeraie Biosphere Reserve (RBA) was the first UNESCO BR designated in Morocco in 1998. Today Morocco accounts four BRs which are informally considered part of the national strategy of protected areas but are not acknowledged in the national legal framework of PAs. The RBA does not escape from the former global challenges and, thus its local communities and *agdal* system might offer valuable insights to the international community.

1.3. LOCAL COMMUNITIES / AGDALS

Governance by local communities and indigenous peoples is one of the oldest forms of conservation and governance of land and natural resources (Berkes, 2007; Borrini-Feyerabend and Hill, 2015; Garnett et al., 2018; Sobrevila, 2008). The importance of these community conserved areas (e.g. ICCAs, *agdals*) vis-à-vis local communities’ well-being, their socio-ecological resilience and their conservation outcomes is increasingly evident (Garnett et al., 2018; IPBES, 2019). However, a strong communication gap at the science-commoners-policy interface persists, which encourages the undervaluing and undermining of ICCAs at national and local levels worldwide, fostering severe degradation processes.

As awareness of the complex and intertwined human-nature connectedness increases, the scientific and international community acknowledges the crucial role of so-called conserved areas³. Local Communities and Indigenous Peoples manage or have tenure rights over at least a quarter of the world's land surface, intersecting about 40% of all terrestrial protected areas and ecologically intact landscapes (Garnett et al., 2018). ICCAs are today considered by the major international policies and programs (e.g. IUCN, CBD and UNEP) as a key management regime and have an important role to play in achieving many of the Aichi global biodiversity targets and the Sustainable Development Goals (CBD, 2020).

On top of the global trends regarding community conserved areas, a particular research gap persists at a regional level in the Mediterranean and North African regions (Kothari et al., 2012; Tran et al., 2020). In Morocco, *agdals* are customary governance systems for the collective and sustainable management of natural resources, equated by many as ICCAs (Indigenous Peoples and Community Conserved Areas and Territories).

1.4. RESEARCH GAP / INTERFACE

In addition to the research gaps already mentioned concerning UNESCO Biosphere Reserves and ICCAs separately; arguments supporting our choice with regard to the research topic, the methodological approach and the geographical location are consistent and interlinked.

It is impressive the lack of research addressing (i) the interface of top-down and bottom-up approaches regarding environmental governance of social-ecological complex systems; and (ii) addressing jointly and under an equal footing topics like protected areas, biosphere reserves, community-based conservation, community governance, environmental governance or social-ecological systems. Studies focusing on the interrelationships between the above research fields are scarce, even though scientific literature specialised in each field is extensive in all cases and has been so for decades. In short, research studies which first, pay equal attention to both approaches to environmental governance; and second, consider simultaneously biodiversity, socio-economic and cultural outcomes of different conservation formulas (such as PAs, BRs or ICCAs) for local people, are fundamental but highly insufficient.

In parallel, there is an increasing international scientific awareness about the need for appropriate intermediation and evaluation between traditional social-ecological governance systems (CGSs) and state institutions (more precisely conservation and PA institutions) (Berkes, 2016). However, facts established by scientists are too often not translated by decision-makers into actions. So, there exists not only a research gap, but also a policy and practice gap. Participatory processes, either at the PA/BR level or at the community level, could effectively contribute to bridging these gaps of conservation, reinforce CGSs and succeed in the implementation of PA and BR. Nevertheless, the aforementioned lack of studies focused on the interface remains a significant constraint to advance in the research-policy gap and the theory-practice gap so frequently mentioned in the three corpuses of literature referred (i.e. protected areas or biosphere reserves; community-based conservation or community governance; and environmental governance).

³ Conserved areas include a wide range of terrestrial and aquatic areas that deliver effective conservation outcomes, even when the conservation outcomes may have not been their primary purpose. Included in this broad range of conserved areas are the aforementioned Community Conserved Areas (e.g. ICCAs, IPCAs, APACs, *agdals*) and those defined by the CBD as OECMs (other effective area-based conservation measures).

A recent global review on “interface processes between protected and unprotected areas” published in *Global Change Biology* by Blanco et al. (2020) highlights significant geographical imbalances in scientific literature. Authors demonstrate that large geographical areas remain overlooked and conclude that “increasing research in underrepresented areas, such as North and West Africa and the Middle East, should be a future priority” (Blanco et al., 2020). Out of the 240 articles reviewed, authors did not find studies which simultaneously investigated synergies and antagonisms between PAs and local people, except to some extent the study of McElwee (2010) in Vietnam⁴ (Blanco et al., 2020). Despite the rapid increase in the number of studies pointed out by Blanco et al. (2020), these still represent less than 10% of the total literature on PAs. Additionally, critical research gaps remain, not only concerning interface processes in general, but particularly referred to governance issues on that interface.

In this scientific context, the Arganeraie Biosphere Reserve (RBA) was identified as a suitable and relevant case for research. The **study area**, the Arganeraie Biosphere Reserve, located in North-West Africa (southwest of Morocco), covers a vast intramontane plain of more than 2,500,000 hectares⁵ (DREFLCD-SO, 2019) bordered by the High Atlas and Anti-Atlas mountains and open to the Atlantic Ocean in the west.

Additional **criteria** supporting the selection of the Arganeraie region as a perfect case study to explore interface processes and factors associated simultaneously with top-down and bottom-up approaches to environmental governance, are the following:

- Its relevance, history and context as a 20-years-old Mediterranean and North African Biosphere Reserve (BR)
- The spatial, geographical, landscape and administrative complexity inherent to a territory (RBA) of 2.5 million hectares and more than 3 million people.
- The socioecological singularity of the argan forest (a unique forest ecosystem endemic to Morocco).
- The socio-economic trajectory of the argan oil sector, discourses and implications.
- Its strong imbrication with the traditional *agdal* system (ancient tribal Moroccan communal governance system).

Previous reasons make the RBA a unique scenario and a pertinent case study to gain a better understanding of the complex interrelations of social-ecological systems (SES) when it comes to the “real day-to-day” challenges of managing such an extensive and complex territory. Subsequent validation of the research design “on site” showcased the relevance and worthiness (in the sense of pertinence) of both, the research topic and the research approach.

RESEARCH APPROACH AND METHODOLOGICAL DESIGN

While conceptual approaches are invaluable in fostering scientific understanding of complex dynamics of social and ecological systems and for framing the present PhD research, I decided to explore the subject inversely. That is, inductively, from a grounded theory lens and following the advice by Berkes

⁴ McElwee, P.D., 2010. Resource use among rural agricultural households near protected areas in Vietnam: the social costs of conservation and implications for enforcement. *Environmental management*, 45(1), pp.113-131.

⁵ The new updated and georeferenced zoning of the Arganeraie Biosphere Reserve proposed in the Action Plan of 2020 (still to be validated by the participatory body), considers a total surface of 2,985,592 ha (DREFLCD-SO, 2020:46).

(2016). The author noted that when researching social-ecological systems, “we need to look at how local environmental stewardship initiatives and livelihood activities interact with higher-level policy, and how all of these affect social-ecological resilience”. I would add, “and vice versa”.

Integrative conservation frameworks encourage interdisciplinary methodological approaches for a better understanding of the interactions between nature and human systems (Bennett et al., 2017; Berkes, 2004). However, few studies yet integrate social-ecological approaches on their methodology (Guadilla-Sáez, 2019). The use of multiple approaches and methods is not only appropriate and valid but advisable during any investigation (e.g. Gable, 1994). Thus, research on SES, as complex adaptive systems, requires attention to multi-scale, multi-level and resilience.

This research contributes towards the integrative study of institutional and community-based approaches to environmental governance and biocultural conservation using a multi-framework integrative approach, in a scenario of post-normal conservation (Buschke et al., 2019; Rose, 2018), to obtain further in-depth information on cross-scale and multi-level interactions within a singular complex adaptive system: the Arganeraie (i.e. argan forest social-ecological system). The pluralistic research approach adopted encompasses a variety of qualitative research approaches (i.e., ethnographic research, case study research, participatory research and grounded theory) and social analytical tools (i.e., ethnographic and participatory methods); together with the “on site” validation of the research design and the informed selection of the RBA local communities to be studied. Overall I seek to enhance inclusivity in framing the research (as authors like Ison, 2010 and Ison and Wallis, 2017 suggest), opening up opportunities for diverse stakeholders (holding multiple perspectives) to be involved.

2. AIMS AND RESEARCH QUESTION

The **main aim** of this thesis is to gain a deeper understanding of the interface between institutional (top-down) and community-based (bottom-up) governance models in the Arganeraie Biosphere Reserve, Morocco.

To that end, the **research question** I want to solve is: To what extent an inclusive environmental governance model may be addressed for the Arganeraie Biosphere Reserve and for two of its local communities?

In order to achieve this general aim and answer the main research question, I have identified three specific objectives that have guided the empirical research:

SPECIFIC OBJECTIVE 1. To analyse the biosphere reserve institutional approach to environmental governance.

SPECIFIC OBJECTIVE 2. To investigate the bottom-up processes of governance in two rural local communities.

SPECIFIC OBJECTIVE 3. To examine the interface between the biosphere reserve and the two local communities through the identification of the constraints and synergies of their own approaches to governance.

Thus, the thesis is **structured** on a general introduction, plus the aims, research question and thesis outline; three descriptive parts that develop the conceptual and methodological frameworks and present the geographical, historical and ethnographical context of the study area.

The Results part (Part 4) contains four Research Chapters addressing the specific objectives and presenting the results of the extensive ethnographical and participatory empirical research.

Research chapter 1 (RBA) analyses the RBA institutional approach to environmental governance (SO1). adds an empirical case study to the North African region and addresses two main weaknesses of UNESCO Biosphere Reserves worldwide: 1) effective governance and 2) shortcomings in their implementation. It first identifies and characterises the myriad of actors at stake. Second, it analyses *how Moroccan institutions are managing the Arganeraie territory*. Third, it examines perceptions of an 'extended peer community' of decision-makers.

Research chapters 2 and 3 (local communities) investigate the bottom-up processes of governance in two rural local communities in the High Atlas and Anti-Atlas mountains within the RBA (SO2). Both chapters follow an analogous structure and analyses regarding local actors, local and customary governance systems and local perceptions of governance and the future. Additionally, at the local level, the ethnographical and participatory approaches have revealed the local knowledge and perceptions of spatial limits and customary governance systems (regarding their *agdals* and communities), and communities' self-assessment of their resilience.

AIMS AND RESEARCH QUESTION

Research chapter 4 examines the interface between the RBA and the two local communities through the identification of the constraints and synergies of their own approaches to governance (SO3).

Part five provides an extensive discussion of the main findings of previous results chapters and the principal theoretical and methodological contributions of the thesis; focusing on the factors impacting the biosphere reserve governance within the arganeraie (SO1), the factors impacting local governance approaches within the arganeraie (SO2), and the common factors in the global-local interface able to foster synergies (SO3). Chapter five also includes the main strengths and limitations of this research, some relevant take-home messages and suggests potential topics and areas for further or future research. Part six includes the final conclusions.

Research chapter 1 (RBA) has been published in the indexed journal *eco.mont* (Journal on Protected Mountain Areas Research and Management), in the special issue 11/2021 “ME AND THE BIOSPHERE. 50th Anniversary of UNESCO’s MAB Programme”:

Romera, M.C., López-i-Gelats, F., Dominguez, P., Boujrouf, S., Maneja, R., 2021, Towards inclusive environmental governance in the Arganeraie Biosphere Reserve, Morocco. *eco.mont* Vol. 13 special issue 11/2021 (38-48 pp). Available at: <https://austriaca.at/?arp=0x003d040b>

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PART 1. CONCEPTUAL FRAMEWORK

1. ENVIRONMENTAL GOVERNANCE

As mentioned in the introduction, the current global change scenario makes more and more obvious the relevance of considering the human-nature connectedness as a core point of any action, policy or decision. In this global scenario, environmental governance of social-ecological systems (SES)⁶ offers an appropriate conceptual approach to tackle this human-nature connection. Environmental governance of SES allows to conceptually address, various of the key concepts that have demonstrated to be relevant also from the inductive field observations. Thus, concepts like complexity, uncertainty, resilience, multiple scales and levels, adaptiveness and learning are key issues common to the scholarship of SES and to the onsite reality observed.

Under the SES lens, environmental governance encompass a wide corpus of literature comprising a diversity of theoretical approaches to governance (e.g. participatory governance, good governance, adaptive governance) and various practical approaches (e.g. governance of protected areas and community governance). While this research adopts an inductive logic in line with grounded theory, and focuses on two of the practical top-down and bottom-up approaches to environmental governance; it is enriched by many of the concepts and theoretical insights developed by approaches such as good governance, adaptive governance, etc. (see Fig. 3).

The practical focus of this thesis on the global-local interface of institutional top-down and community-based bottom-up approaches to environmental governance, has allowed to highlight and contribute to some relevant issues still unresolved by existing theories (i.e. the theory-practice gap). Scholarship on post-normal science and post-normal conservation plus the results from this thesis point to the relevance of: (i) framing choices concerning governance and research on governance; (ii) considering and integrating multiple knowledge systems; and (iii) achieving inclusiveness if we aim to contribute to relevant advances in the current theory-practice gap and the fair integration of the variety of actors involved in governance of a given SES, that is inclusive environmental governance (IEG).

The conceptual map on Fig. 3 illustrates the most relevant interconnections of the different theoretical fields of literature considered with regard to the research topic. The following sections elaborate further on this conceptual approach.

⁶ SES understood as complex adaptive systems.

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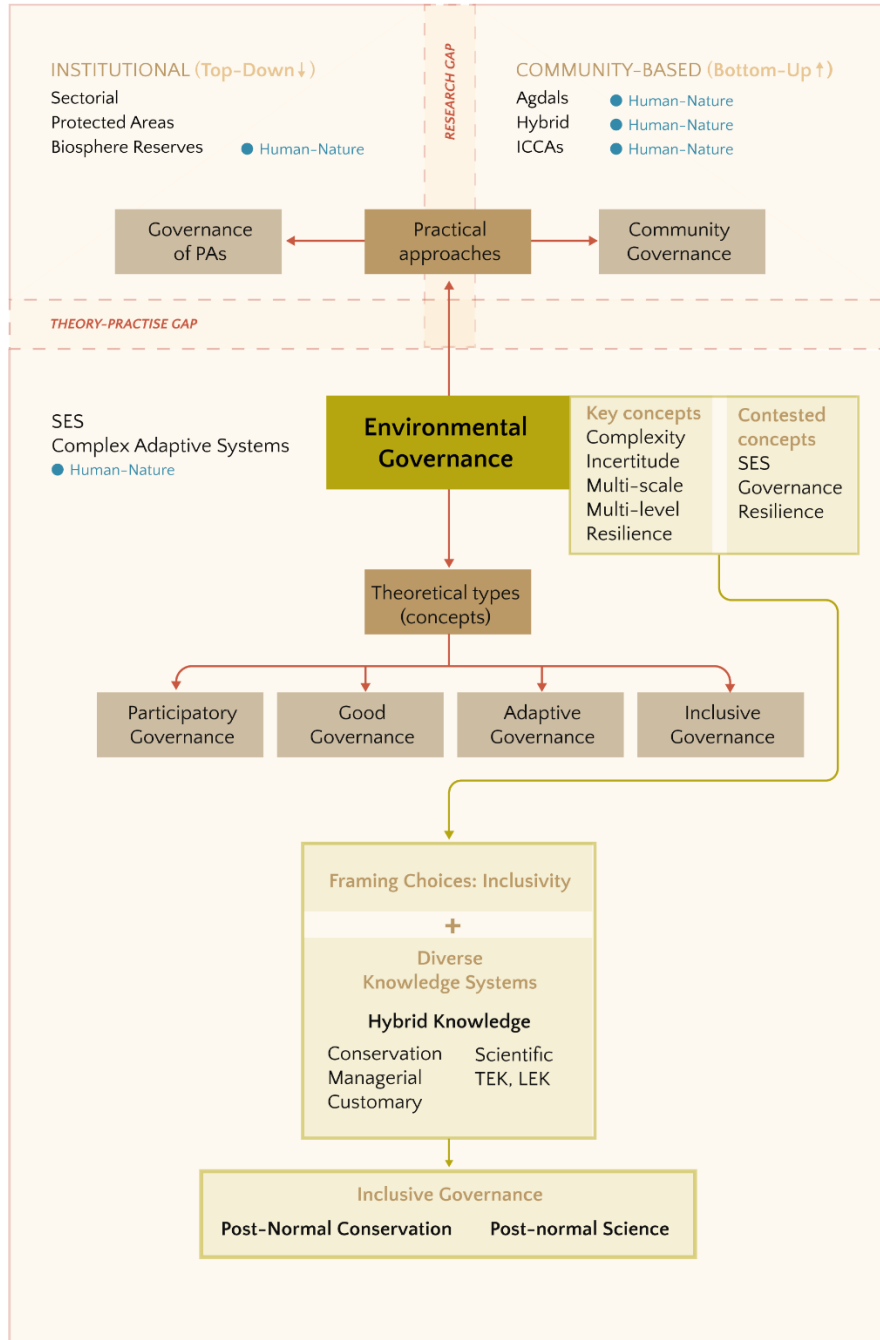


Figure 3: Conceptual map. Source: own elaboration.

1.1. GOVERNANCE, A CONTESTED CONCEPT

Governance is a term that cannot be taken for granted. In fact, it does not have a settled definition today (Fukuyama, 2016). Since governance is a contested concept, it requires an appreciation of how it might be framed and the possible implications of a given framing choice (Ison and Wallis, 2017). Considering that competing frames arise around contested issues (as mentioned above), it is important first, to examine how governance is understood and reflect on how different “framings” have developed over time (e.g. this research’s topic). Second, to think about feasible ways in which current frames can be shaped or transformed, through practical and inclusive processes (e.g. this

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research's methodological approach and focus on stakeholders' visions of future), as suggested by Ison and Wallis (2017).

Today, the term governance is applied broadly, sometimes imprecisely, to a spectrum of activities that have in common the fact of guiding or regulating social behaviour (Fukuyama, 2016). The very vagueness of the term and its widespread application have led some observers to claim that it has become an "empty signifier" and that it might need some "conceptual boundaries" (Offe, 2009). As a concept, "governance" stems from national debates, where it is often used for new forms of regulation that differ from traditional hierarchical state activity (van Kersbergen and van Waarden, 2004).

Although there is no consistent understanding of the meaning of the term governance at present (Fukuyama, 2016), Rhodes (1996) points out that "governance signifies a change in the meaning of government, referring to a new process of governing ... or the new method by which society is governed". Furthermore, in its most fundamental form, governance can be understood as an abstract and descriptive concept or, alternatively, in its verbal form, "governing" as a form of practice to be carried out in unique ways, in multiple contexts and at multiple scales (e.g. cross- and intra- national, subnational and local levels) (Ison and Wallis, 2017). Lemos and Agrawal (2006:298) underline that governance is different from government, "it includes the state regulation and, in addition, encompasses actors such as communities, businesses, and NGOs" (i.e. market mechanisms to respond to change or self-organisation of communities reliant on common-pool resources with or without markets and regulation).

Biermann and Pattberg (2008) note that the governance concept generally implies some degree of self-regulation by societal actors, private public cooperation in solving societal problems, and new forms of multilevel policy. In this sense, for the UN⁷, "Governance refers to the ways and means employed by society to make collective decisions, choose collective goals, and take action to achieve those goals" (United Nations, 2012 in Chaffin et al., 2016).

In development policy, the governance concept has also gained relevance in the 1990s, frequently with the contested qualifier "good governance" (de Alcántara, 1998). Reference to governance encompasses the relationships between government and society including the means through which private actors, markets, and interest-based networks influence policy decisions (Chaffin et al., 2016; Delmas and Young, 2009; Lemos and Agrawal, 2006; Rogers and Hall, 2003)(Chaffin et al., 2016).

Relevant **definitions of governance** include (adapted from Armitage et al., 2012:246):

- *Self-organising, interorganisational networks characterised by interdependence, resource exchange, rules of the game, and significant autonomy from the state (Rhodes 1997: 15).*
- *The setting, application and enforcement of the rules of the game (Kjær 2004:12).*
- *The institutional capacity of public organisations to provide the public and other goods demanded by a country's citizens or their representatives in an effective, transparent, impartial, and accountable manner, subject to resource constraints (World Bank 2000:48).*
- *The entire range of activities of citizens, elected representatives, and public professionals as they create and implement public policy in communities (Box 1998:2)*
- *Systems of rule at all levels of human activity—from the family to the international organisation—in which the pursuit of goals through the exercise of control has transnational repercussions (Rosenau 1999:13).*

⁷ Post-2015 UN Development Agenda.

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Environmental and natural resource governance scholarship “has generally aimed to understand how different governance processes or policies influence desired outcomes such as preservation, conservation, livelihoods, and sustainable use or development” (Partelow et al., 2020:1). In turn, diverse theories of environmental governance provide different lenses attempting to explain social-ecological realities. However, to present, many concepts, governance theories and frameworks exist in the field of environmental governance scholarship, lacking cohesion and relational orientation (Partelow et al., 2020). Relevant current scholarship on environmental governance, trying to address this issue and to significantly contribute to the field, includes critical reviews of theories and frameworks (Alexander et al., 2016; Bennett and Satterfield, 2018; Colding and Barthel, 2019; Cox et al., 2016; Davidson and Frickel, 2004; Partelow, 2018).

Relevant **definitions of environmental governance** include (adapted from Armitage et al., 2012:246):

- *The set of regulatory processes, mechanisms and organisations through which political actors influence environmental actions and outcomes (Lemos and Agrawal, 2006:298).*
- *Environmental governance should be understood broadly so as to include all institutional solutions for resolving conflicts over environmental resources (Paavola, 2007:97).*
- *The interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and local environmental change and, in particular, earth system transformation, within the normative context of sustainable development” (Biermann et al., 2009:3).*

Lemos and Agrawal (2006) add to their former definition that environmental governance “is synonymous with interventions aiming at changes in environment-related incentives, knowledge, institutions, decision-making, and behaviours”. In this sense, Chaffin et al. (2016) remark how self-organised environmental governance can provide a more agile and adaptive response than government regulation and, at the same time, address issues that arise in market failure.

Emergent, often informal and non-governmental aspects of environmental governance are common, as noted by Chaffin et al. (2016), in approaches referred to as **adaptive co-management** (Adger et al., 2005; Armitage et al., 2008; Plummer et al., 2013), **collaborative governance** (Ansell and Gash, 2008; Bingham, 2010), **good governance** (Lockwood, 2010; Lockwood et al., 2010), and **adaptive governance** (Brunner et al., 2005; Chaffin et al., 2014; Cosens et al., 2014; Dietz et al., 2003; Folke et al., 2005; Gunderson and Light, 2006; Schultz et al., 2015).

As in the literature about post-normal conservation (Buschke et al., 2019; Rose, 2018), the emerging body of scholarship on environmental governance highlights first, the need for collaborative research (i.e. theories, methods and concepts); and second, the clear mandate for more multidisciplinary, interdisciplinarity and transdisciplinarity⁸ to advance environmental governance analysis (Partelow et al., 2020). In practice, to satisfactorily explain or predict social-ecological realities (i.e. “real-world” situations or phenomena), it may be worthwhile to be equipped with a theoretical and methodological toolbox for governance analysis. In this sense, the review of Partelow et al. (2020) is useful to explain my conceptual background (see Fig. 4). However, as I will detail in the methodology chapter, my research approach has been far more inductive than normative, which means that this research follows multiple theories and frameworks.

⁸ *Multidisciplinarity*: working in tangent with other disciplines. *Interdisciplinarity*: integrated work with other disciplines). *Transdisciplinarity*: integrated work with non-academics (Regeer and Bunders-Aelen, 2009).

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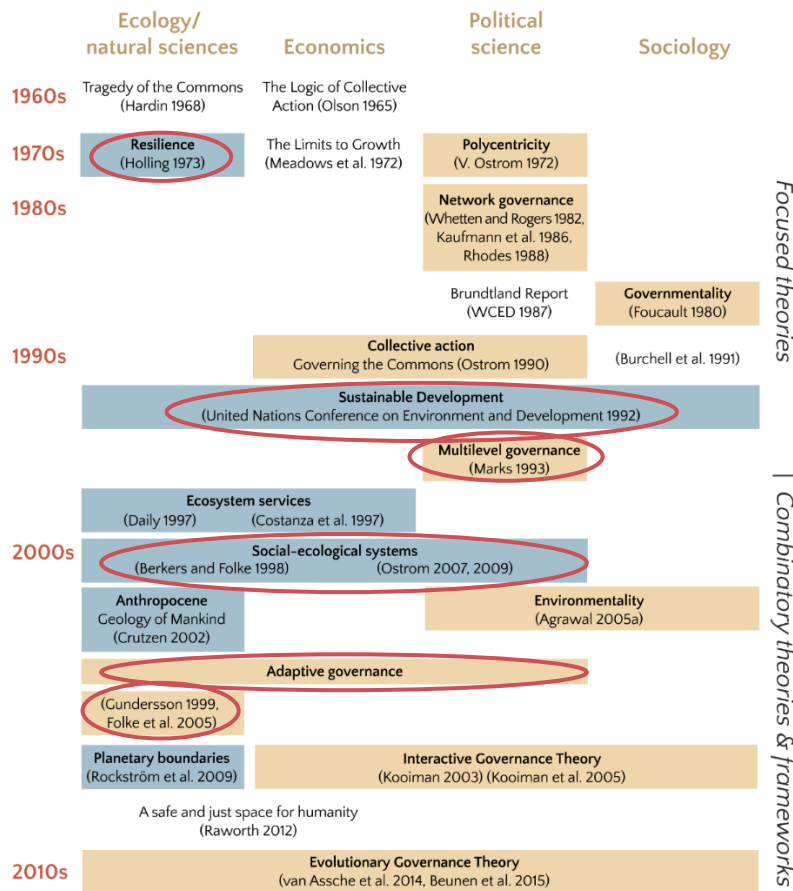


Figure 4: Environmental governance theories. Simplified heuristic conceptualization of the disciplinary origins of environmental governance theories (orange) and related concepts (blue) since the 1960s. Selected influential literature references are also shown. Source: Partelow et al. (2020).

1.2. FRAMING AND OPERATIONALIZING INCLUSIVE ENVIRONMENTAL GOVERNANCE

As noted by Partelow et al. (2020) and shown in Fig. 4, most of the broader combinatory analyses, theories and frameworks in environmental governance are linked to concepts that bridge scholarship between the social and natural sciences, while adding a complex systems-thinking approach and a normative orientation (e.g. in concepts like resilience, ecosystem services, social-ecological systems, and sustainability). These combinatory theories and frameworks are better suited (than the focused ones) to gain a comprehensive understanding of multiple factors influencing environmental governance. They help scholars in understanding the many present and interacting parts, but may struggle to identify detailed understandings of certain system features or facilitate comparison across systems, which shows “the need for both focused and broader analyses (in methods, concepts, and theories) to work constructively in tangent” (Partelow et al., 2020:12).

For the purposes of this research, I approach environmental governance from the interlinked lens of adaptive governance of social-ecological systems (SES) and the principles of good governance introduced by Lockwood (2010) for terrestrial protected areas. With special focus on two additional insightful contributions that are likely to enrich and improve the framing of the analysis: participatory and inclusive governance (see Table 1). Thus, in this thesis, I adopt the concept of inclusive governance

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employed by Ison and Wallis (2017) when framing environmental governance (as defined by Lemos and Agrawal, 2006:298), and I refer to it as **inclusive environmental governance (IEG)**. In particular, I have stressed the elements that facilitate the emergence of shared visions among stakeholders about the future of the RBA.

Moreover, I consider the top-down and bottom-up approaches to environmental governance related to protected and conserved areas (i.e. governance of protected areas (PA) and biosphere reserves (BRs) *versus* community governance and *agdals*). Fig. 5 shows a simplified conceptual diagram.

	LENS	PRINCIPLES	ANALYTICAL FRAMEWORKS		PRACTICAL APPROACHES -Top-Down & Bottom-Up-	
Type of Governance	Adaptive governance	Good governance	Participatory governance	Inclusive governance	Governance of PA	Community governance
Field of application	Scholarship on governance and SES	Scholarship on governance and PA	Scholarship on governance	Scholarship on NRM	Management of PA (IUCN, MAB)	Scholarship on community-based conservation and NRM
Key authors / literature	(Gunderson and Holling, 2002) (Folke et al., 2005)	(Lockwood, 2010) (Lockwood et al., 2010)	Chambers (1997) (Banyan, 2007) (Turnhout et al., 2010) (Fischer, 2012)	(Ison and Wallis, 2017)	(Borrini-Feyerabend et al., 2013; Borrini-Feyerabend and Hill, 2015) (Bridgewater et al., 1996)	(Berkes, 2009, 2007; Berkes et al., 2014) (Armitage et al., 2020) (Berdej et al., 2016)
Focus on...	Co-management, resilience, networks, leadership, and trust	Principles of good governance of natural resources and PA	Participatory democracy	Water governance, social learning and adaptive management	Management and governance for conservation	Community-based governance and conservation

Table 1: Theoretical frameworks on natural resource and environmental governance considered.

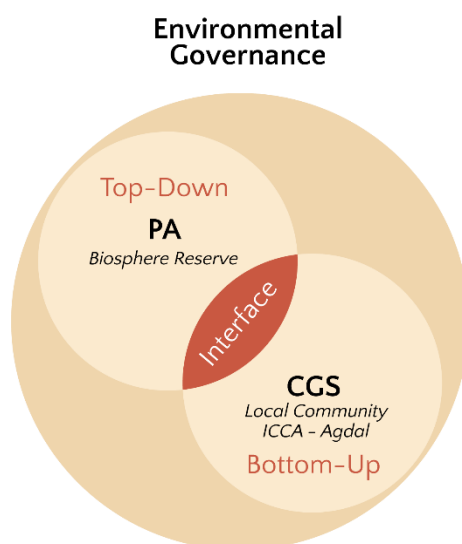


Figure 5: Simplified conceptual diagram. Source: own elaboration.

1.2.1. ADAPTIVE GOVERNANCE

Adaptive governance is the conscious adoption of a learning attitude in organisations (Borrini-Feyerabend et al., 2004), in its simplest form is 'learning by doing' (Borrini-Feyerabend and Hill, 2015). Adaptive governance theory emerged in the late 1990s (Gunderson, 1999), and became popular with the book *Panarchy* (Gunderson and Holling, 2002) and later contributions to the fields of SES by Folke

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et al. (2005) and the Commons by Dietz et al. (2003). Chaffin et al. (2014) provide a detailed history and overview of adaptive governance scholarship, complemented by others like Schultz et al. (2015) or Chaffin and Gunderson (2016). Adaptive governance hypothesizes that the more adaptive a governance system is to a SES functioning and change, the more resilient that the governance system is; making it more likely to achieve sustainability (Partelow et al., 2020).

The interest of adaptive governance for a comprehensive analysis of the interface between top-down and bottom-up approaches to inclusive environmental governance, lies in its focus on understanding how formal institutions, informal networks, and individuals at multiple scales are linked for resilient collaborative environmental management (Gunderson and Holling, 2002). In this sense, Folke et al. (2005) emphasize “the role of bridging organisations that have the ability to strengthen social capital and the capacity for effective governance of multilevel organisations involved with ecosystem management”.

Authors argue that “adaptive governance is operationalized through **adaptive co-management systems** and that the roles of social capital, focusing on networks, leadership, and trust, are emphasized in this context” (Folke et al., 2005:444). Four relevant interacting aspects in adaptive governance of complex SES (Partelow et al., 2020:463-464) are:

1. Build knowledge, by the combination of different knowledge systems, and understanding of resource and ecosystem dynamics.
2. Feed ecological knowledge into adaptive management practices; emphasizing a learning environment. This aspect requires leadership and changes of social norms within management organisations.
3. Support flexible institutions and multilevel governance systems; implementing adaptive co-management which, in turn, relies on the collaboration of a diverse set of stakeholders (sharing management power and responsibility) operating through multilevel social networks.
4. Develop capacity for dealing with external perturbations, uncertainty and surprise.

Regarding adaptive co-management, Olsson et al. (2004) and Armitage et al. (2009) also draw attention to the learning (experiential and experimental) and collaboration (vertical and horizontal or networks) required to generate better outcomes in the context of complex SES. Useful **features of adaptive governance** (1) emphasize the importance of collaboration among diverse actors and interests, as well as institutions that are flexible and nested; and (2) draw attention to the importance of the deliberative processes that are required to build understanding based on multiple knowledge systems, encourage trust through repeated interactions, and finally, to encourage social (or collective) learning processes and continuous feedback (Armitage and Plummer, 2010; Dietz et al., 2003; Folke et al., 2005 in Partelow et al., 2020).

1.2.2.GOOD GOVERNANCE

Furthermore, Lockwood (2010) defines seven principles of good governance for terrestrial protected areas and their performance outcomes (see Table 2). Together with the former considerations concerning adaptive governance, this set of principles offer an appropriate frame for the analysis of the interface between top-down and bottom-up approaches to inclusive environmental governance. Their interest lies in their potential to not only analyse good governance of institutionally protected areas such as biosphere reserves (as proposed by the author), but also to examine governance outcomes of community-based governance systems such as Moroccan *agdals* and the like.

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Principle	Outcome
1. Legitimacy	<p>The governing body (GB) is conferred with a legal or democratically mandated authority</p> <p>Stakeholders freely accept the GB's authority</p> <p>The GB has a long-standing cultural attachment to some or all of the lands within the protected area</p> <p>The GB acts in accordance with its mandate^a and purpose of the protected area(s)^b</p> <p>Governors act with integrity and commitment</p>
2. Transparency	<p>Governance and decision-making is open to scrutiny by stakeholders</p> <p>The reasoning behind decisions is evident</p> <p>Achievements and failures are evident</p> <p>Information is presented in forms appropriate to stakeholders' needs</p>
3. Accountability	<p>The GB and personnel^c have clearly defined roles and responsibilities</p> <p>The GB has demonstrated acceptance of its responsibilities</p> <p>The GB is answerable to its constituency ('downward' accountability)</p> <p>The GB is subject to 'upward' accountability</p> <p>The levels at which power is exercised (local, sub-national, national, international) match the scale of associated rights, needs, issues and values</p>
4. Inclusiveness	<p>All stakeholders have appropriate opportunities to participate in the GB's processes and actions</p> <p>The GB actively seeks to engage marginalized and disadvantaged stakeholders</p>
5. Fairness	<p>Stakeholders, office-bearers, and staff are heard and treated with respect</p> <p>There is reciprocal respect between governors from higher and lower-level authorities</p> <p>Decisions are made consistently and without bias</p> <p>Indigenous peoples' and human rights are respected</p> <p>The intrinsic value of nature is respected</p> <p>The distribution (intra- and intergenerational) of the benefits and costs of decisions and actions are identified and taken into account</p>
6. Connectivity	<p>The GB is effectively connected with governing bodies at different levels of governance</p> <p>The GB is effectively connected with governing bodies operating at the same governance level</p> <p>The GB's direction and actions are consistent with directions set by higher-level governance authorities</p>
7. Resilience	<p>The GB has a culture of intentionally learning from experience and absorbing new knowledge</p> <p>The GB has the flexibility to rearrange its internal processes and procedures in response to changing internal or external conditions</p> <p>Formal mechanisms provide long-term security tenure and purpose for the protected area(s)</p> <p>The GB utilizes adaptive planning and management processes</p> <p>The GB has procedures to identify, assess, and manage risk</p>

a Mandate refers to the scope and content of the governing body's grant of authority, as stated in a constitution, articles of association, legislation or customary law.

b Purpose is specified by the IUCN definition and categorization of protected areas (see footnote⁹).

⁹ The IUCN guidelines for applying protected area management categories define a protected area as: 'A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values' (Dudley, 2008:8). Under this definition, six categories (one of which has two sub-categories) of protected area are recognised: Ia Strict Nature Reserve, Ib Wilderness Area, II National Park, III Natural Monument, IV Habitat/Species Management Area, V Protected Landscape/Seascape, and VI Protected Area with Sustainable Use of Natural Resources. The IUCN guidelines identify objectives common to all six categories, as well as specific objectives for each category.

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c Personnel refers to office-bearers, staff and volunteers of the governing body. For community-based governing bodies, personnel also refers to community members.

Table 2: Good governance principles for terrestrial protected areas and performance outcomes (Lockwood, 2010).

1.2.3. PARTICIPATORY GOVERNANCE

Closely related to what Rose (2018) argues about a post-normal conservation world, participatory methods in development and conservation science (in the sense of Chambers, 1997) seems to be the only way to answer calls for a new kind of science and conservation policy which engages people (Rose, 2018:521). Participatory governance refers to the fact that governance, management and conservation decisions and actions should be taken **by**, or at least **with**, communities, rather than something that is done **to** people (Chambers, 1997). Conservation outcomes should contribute to social equity and justice (Armitage et al., 2020) and, most importantly, we should adopt a mindset that conservation needs to be done **by** decision-making communities, rather than **to** them (Rose, 2018:521).

However, participation in its most general form means “the adoption of an open approach so that a planning process or a given programme should involve all actors who will be affected by it” (Turnhout et al., 2010 as cited in Nagy, 2018). According to Fischer (2012:457), “participatory governance is a variant or subset of governance theory that puts emphasis on democratic engagement, in particular through deliberative practices, a form of democratic engagement to deepen citizen participation in the governmental process”, not only in conservation initiatives or natural resource management. Banyan (2007:660) remarks that the concept of participation “implies involvement [of various parties] in public decisions, as distinguished from other forms of community involvement” and it requires transparency, equal access to decisions, dialogue, openness, competence, and a respect for individual liberty. Participation in general is discussed as an important element of democracy and as a requirement for legitimacy and accountability (Nagy, 2018).

Participation can equally be a top-down or bottom-up initiative (Nagy, 2018). Therefore, participatory governance (Banyan, 2007; Fischer, 2012), largely in line with the aforementioned principles of good governance, can lead to:

- (a) citizen empowerment and community capacity building;
- (b) the development of a wide and transparent exchange of knowledge and information;
- (c) a more equal distribution of political power;
- (d) the establishment of collaborative partnerships;
- (e) a fairer distribution of resources;
- (f) the decentralisation of decision-making processes;
- (g) an emphasis on inter-institutional dialogue; and
- (h) greater accountability.

1.2.4. INCLUSIVE GOVERNANCE

In turn, inclusive governance would go a step further in the level of engagement of stakeholders given a decision, policy or other form of purposeful action. Inclusiveness is not only about “the involvement [of various parties] in public decisions” (Banyan, 2007:660) or “a form of democratic engagement to deepen citizen participation in the governmental process” (Fischer, 2012:457). Inclusiveness is, first of all, about developing mindsets and framings since the very beginning of a decision process, policy, etc.

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which value, consider and include the multiple perspectives of the stakeholders and actors affected by it (Ison and Wallis, 2017). In other words, inclusive governance implies to consider stakeholders' perspectives since the conceptualisation and framing of the initial stages of the issue at stake. However, there is no set definition of inclusive governance and no extensive body of literature is yet established. Ison and Wallis (2017), in the context of water governance, talk about framing, its usefulness and the barriers to more inclusive governance frameworks; and argue that “**inclusive framing failure** happens when those responsible for a policy, or other forms of purposeful action, fail to appreciate that inclusivity begins with opening up opportunities for diverse stakeholders, holding multiple perspectives, to be involved in making framing decisions, e.g. is a catchment framed as a hydrological system, an ecological system, a social-ecological system, etc.” (Ison and Wallis, 2017:161).

1.2.5. GOVERNANCE OF PROTECTED AREAS

There are two major institutions linked to environmental governance and protected areas at global level that regulate and establish categories of protected areas worldwide: UNESCO and the International Union for Conservation of Nature (IUCN). While UNESCO designates or labels sites of world interest (MAB Biosphere Reserves, Global Geoparks and World Heritage sites) upon request of the countries and after consideration of their candidatures; the IUCN has developed a protected area management categories system for the development, reporting and understanding of protected areas worldwide. The IUCN system for recognising protected areas and assigning management categories and governance types is recognised by international institutions such as the United Nations (UN) or the Convention on Biological Diversity (CBD); and national governments globally (Dudley, 2008).

Regarding governance in protected and conserved areas, in their chapter about “Governance for the conservation of nature” Borrini-Feyerabend and Hill (2015:180) note that for simplicity, the IUCN chose to make sense of the governance concept as related to protected areas by focusing on three main parameters: governance quality, governance diversity or governance type and governance vitality, as illustrated in Fig. 6.



Figure 6: A schematic summary of governance characteristics. Source: adapted from CSIRO in Borrini-Feyerabend and Hill (2015:195).

1.2.6. COMMUNITY GOVERNANCE

Conceptually, community and local governance (usually referred to as synonyms in the context of conservation), tend to be associated to citizenship, participatory democracy, community participation, engagement and decision-making in public matters, social governance, network governance and

PART 1. CONCEPTUAL FRAMEWORK

participatory governance (Totikidis et al., 2005). Table 3 shows a community governance model particularly insightful in the context of this research because of its clarity, usefulness and suitability for the study area.

Community Leadership	Community Empowerment	Community Ownership
Community Leadership reflects the concept of people and groups working together to achieve common goals and visions.	Empowered communities are ones which either have or are able to access resources. Resources are needed to meet a variety of needs falling along a continuum from basic needs (eg. food, shelter, income) to higher level needs (eg. social interaction, support, self-development). The link between social and economic capital is, therefore, made particularly apparent here.	This component of the model encompasses the way in which people are connected to their communities so they feel they belong and feel they want to look after their communities.
<ul style="list-style-type: none"> - Shared visions and understandings - Community participation - Cooperative behaviours - Community advocacy 	<ul style="list-style-type: none"> - Access to resources - Power sharing - Devolution of decision-making 	<ul style="list-style-type: none"> - Sense of belonging - Sense of caring - Sense of place - Valuing diversity

Table 3: Community governance model. Adapted from Auckland City Council (2002) in Totikidis et al. (2005).

Furthermore, in the field of conservation and environmental governance, the most common terms used by scholars are “community-based natural resource management” (CBNRM), “community-based conservation” (CBC), “indigenous peoples and community conserved areas” (ICCAs) and, more recently, “community-centered conservation governance”. “Community-centered conservation” is defined by Armitage et al. (2020:3) as “the leadership of local and Indigenous communities in the protection of biodiversity and natural resources through multilevel governance processes in which fundamental rights are respected, and relationships of trust and customary practices are co-constructed among communities of place, supportive agents of the state, and civil society actors across multiple spheres of action (e.g., conservation organisations, business, and industry partners)”. Therefore, community-centred conservation initiatives can be led by different actors or combinations of them, such as rights-holders and indigenous organisations, governments, civil society or the private sector to cite some.

The core principles of community-centered conservation governance proposed by Armitage et al. (2020:1) include:

- (a) building multilevel networks and collaborative relationships needed to coproduce conservation solutions;
- (b) promoting equity and recognising the central role of women as agents of positive change in conservation efforts across scales;
- (c) reframing conservation action through the lens of reconciliation and redress (e.g. responding to injustices from land grabs and territorial enclosures);
- (d) ensuring a rights-based approach to conservation action in which community agency, access and decision-making autonomy are supported; and
- (e) revitalizing the customary and local institutions that provide legitimate and adaptive strategies for the stewardship of biodiversity.

For the IUCN, however, community governance falls within the governance type D, that is, “Governance by indigenous peoples and local communities”. Meaning community-conserved areas and territories established and run by either local communities and or indigenous peoples (ICCAs), most often, *de facto* conserved areas (not recognised by national legislation or policy) that may be locally recognised by customary law either by local communities or by indigenous peoples. As defined

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by the IUCN, the term 'conserved area' describes "area-based measures that, regardless of recognition and dedication, and at times even regardless of explicit and conscious management practices, achieve *de facto* conservation and/or are in a positive conservation trend and likely to maintain it in the long term" (Borrini-Feyerabend and Hill, 2015:178).

2. PROTECTED AREAS. A top-down approach to environmental governance

2.1. PROTECTED AREAS

According to IUCN¹⁰, a protected area is “A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values” (Dudley, 2008:8). The former IUCN definition of a protected area, its accompanying principles, related management categories and governance types provide an international language and reference points for recognition and comparison (Borrini-Feyerabend and Hill, 2015).

Protected area recognition happens at several levels: notably internationally, nationally and locally. The categorization of protected areas varies by country and protection levels. The IUCN’s categorization of protected areas is widely accepted on the international level and is recognised by organisations such as the United Nations and many national governments. It sets up a global standard for defining and classifying protected areas based on management objectives. However, not all protected areas fall neatly into these categories.

Additionally, the Article 2 of the CBD¹¹ states that a protected area is “a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives” (CBD-UNEP, 1992:4). IUCN and CBD definitions of protected area are considered to be fully compatible and widely shared by the international community despite not being identical (Dudley, 2008). However, for the purpose of this research it is relevant to note that the IUCN definition specifies that recognition and management can happen “through legal or other effective means”. Which entail that a natural area can be “internationally recognised” as a protected area even if it is not listed and or acknowledged in its national legislation and policy (Dudley, 2008:8). This may be the case for community-conserved areas (i.e. area effectively recognised by traditional or customary rules), areas recognised through an international convention or agreement or private protected areas, among others (Borrini-Feyerabend and Hill, 2015; Dudley, 2008).

All natural protected areas have the common goal of biodiversity conservation. Yet, many other objectives are considered in management strategies such as delivering benefits to local communities, providing educational and recreational opportunities, conserving specific landscape features, conducting scientific research and or improving the overall quality of the area over time.

2.1.1. EVOLUTION AND CHALLENGES

Throughout the 20th century, following a growing interest of the international community in biodiversity conservation and the increasingly scarce "pristine" natural spaces, a network of protected spaces and areas was developed at the international level, with a strong national legal basis, whose maximum exponent could be considered the National Parks. These traditional conservation efforts have often been devoted to either, the preservation of exceptional ecosystems (i.e. their scenic beauty), or the protection of certain endangered flag species (Batisse, 1982). Worldwide, the tendency has been to create protected areas (e.g. National Parks) in places of low value for other land use purposes -such as high mountains or wetlands- while leaving certain representative ecosystems

¹⁰ International Union for the Conservation of Nature.

¹¹ Convention on Biological Diversity.

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almost entirely without protection (e.g. tropical and subtropical forests and warm arid regions) (Batisse, 1982).

In 1992, the Fourth World Congress on National Parks and Protected Areas (WCNP), held in Caracas, Venezuela, established a target for conserving biodiversity by recommending “that protected areas cover at least 10 percent of each biome by the year 2000” (Brooks et al., 2004; McNeely, 1993). This target has subsequently been generalized to apply to individual countries and worldwide (Brooks et al., 2004) and updated to the 17% by 2020 and 30% by 2030. These global targets have been influential in encouraging countries to increase the (reported) area of their land under protection, being in 2018 almost 15% of the earth’s land surface and inland waters (UNEP-WMCM et al., 2018). Despite the percentage of reported protected area and although it has been shown that any protected areas can confer conservation benefits in comparison with adjacent unprotected areas (Bruner et al., 2001); the effectiveness of any given protected area will depend on its management, with many protected areas likely to be considered “paper parks” (Brandon et al., 1998).

Many national governments transpose international recommendations (i.e. CBD, IUCN, etc.) in a coercive and authoritative way at regional and national level, in a context where (1) environmental conservation and economic development may be contradictory, conflicting and deemed incompatible; (2) there may be a strong hierarchy embedded in many national contexts (regarding nature conservation and land management) and (3) where conventional scientific and technology-based knowledge is mainstream. Thus, promoting a "culture" of protected areas that in many cases is perceived by the populations living in these areas as imposed, exogenous, distant and insensitive to their needs. If to the problems inherent to territorial and conservation issues, we add the multiple examples in which certain actors and governments have used protected areas as tools for exercising power or defending interests other than conservation (e.g. corruption, conflicting interests over territory, use of natural resources, etc.), it is easy to understand the situation of social conflict that may seem intrinsic to the declaration or establishment of a protected area. Unless the former practices and administrative habits are radically modified and “major efforts are made to explain the value of protected areas and to associate the local people with their management, all conservation measures will be bound to collapse sooner or later” (Batisse, 1982:108).

In this sense, local support is essential when it comes to land management and protected areas. This is not new to the field of nature conservation. As Batisse (1982:108) stated four decades ago, “it cannot be over-stressed that conservation measures -especially those which involve productive lands- will not succeed without the agreement, support, and participation of the population directly concerned”. Besides, Breton (2009) highlights the impossibility to dissociate the specific management of protected areas from parallel and convergent policies of urban and land use planning, tourism and energy, transport and leisure. With this pivotal idea (of area where conservation and development were compatible) and aiming to counteract the threats mentioned above, the UNESCO’s biosphere reserve concept -and the Man and the Biosphere (MAB) Programme seek to establish a dynamic interaction between scientists, resource managers, decision-makers, and the local people (who should ultimately benefit from the protection measures and from the results of research); which means to associate the populations concerned as fully as possible with (1) the formulation and implementation of research projects; and more importantly, (2) when establishing and managing a protected area, which imposes changes and restrictions on the use of land (Batisse, 1982).

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2.1.2. TOP-DOWN vs BOTTOM-UP APPROACHES TO CONSERVATION IN PA

Again, as an evolution of the international discourse in a context where the concern about the situation of vulnerability of natural ecosystems and biodiversity is increasingly alarming, formulas and approaches to conservation are emerging that are increasingly inclusive (i.e. natural parks, biosphere reserves -BRs-, community-based natural resource management -CBNRM-, indigenous peoples and community conserved areas -ICCAs-, etc.). Most of these formulas or mechanisms of nature conservation and sustainable land management are potentially and conceptually compatible with each other but far apart and even opposed in practice. Fig. 7 illustrates the potentially convergent approaches to conservation from the top-down and from the bottom-up along the geographical scale.

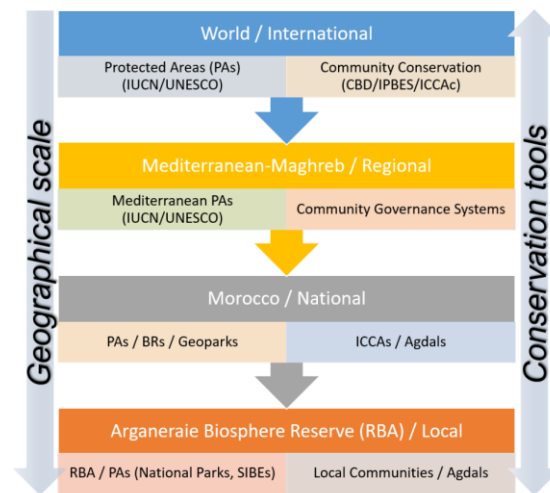


Figure 7: Cross-scale diagram of convergent disciplines or approaches to conservation. Source: own elaboration.

To tackle this theory-practice gap and contributing to the convergence of the existing scientific literature addressing top-down and bottom-up approaches to sustainable conservation is paramount. Therefore, for the purposes of this research, and due to the research gaps noted in the introduction, I will focus on two of these approaches: on the one hand the **UNESCO Biosphere Reserves** (top-down approach to conservation) and on the other hand **Community Governance Systems** (bottom-up approach to conservation). The choice is also motivated by the high degree of potential complementarity that these two conservation formulas present in theory and in the study area. Fig. 8 shows the main strengths and weaknesses of both Biosphere Reserves and Community Governance Systems such as ICCAs in general terms.

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Community-based Governance (Bottom-Up ↑)	UNESCO Biosphere Reserves (Top-Down ↓)
-Sound local understanding	-Challenging local understanding
-Practice-based customary regimes	-Strong theory-practice gap
-Demonstrated resilience -Local sovereignty and well-being	-Challenging implementation. Leading to weak legitimacy and resilience
-Conservation of biocultural diversity Key management regimes	-Conservation of biocultural diversity Key management regime
-Lack of external visibility -Undergoing severe degradation processes worldwide	-International recognition -Networking - WNBR -Sound concept. Inclusive for ICCAs
-Strong communication gap at the science-local-policy interface	-Sites for interdisciplinary research - "living-labs"
-Lack of support	-Institutional policy support. Inclusive for ICCAs

	Weaknesses
	Strengths
	Common strengths
	Complementarity btw weaknesses and strengths

Figure 8: Complementary strengths and weaknesses of UNESCO Biosphere Reserves and ICCAs as top-down (global) and bottom-up (local) approaches to environmental governance. Source: own elaboration.

On the one hand, **UNESCO Biosphere Reserves** are tools for effective sustainable land management (i.e. “essentially an attempt to make conservation ... more relevant to human needs, and more socially and economically acceptable to the populations concerned” (Batisse, 1982)). Even so, they remain an example of top-down management and conservation, promoted by the states and designated (i.e. validated) at the international level by UNESCO, which does not necessarily include in practice the agreement and active participation of the BR resident population itself (despite being included in its conceptualization) (UNESCO, 1996).

As mere tools, the biosphere reserves might face the same risks and issues of adequate protection than any other type of protected area. And, if properly implemented (i.e. set up and managed in the right way), they might foster that the surrounding population becomes its best protector. In this sense, Batisse (1982:107) argued how “experience shows that when the populations are fully informed of the objectives of the biosphere reserve and understand that it is in their own and their children’s interest to care for its functioning, the problem of protection is largely solved. In this manner, the biosphere reserve becomes fully integrated -not only into the surrounding land-use system, but also into its social, economic, and cultural reality-”.

Pool-Stanvliet (2013), in an historical review of the UNESCO MAB Programme in South Africa, pointed out several issues that can be extrapolated to the rest of Africa if not worldwide. Among them, the difficulty sometimes for the UNESCO Biosphere Reserve concept to stand out among other landscape conservation initiatives (such as World Heritage Sites, biodiversity initiatives, trans-frontier conservation areas and the like) considered by conservation agencies and states. In this sense, Stoll-Kleemann (2007) observed that “the values and advantages of biosphere reserves must, in future, be more convincingly put over to decision-makers and their consultants”, highlighting the importance of investigating the added value of using the biosphere reserve concept. Additional constraints derived

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from the (conscious or unconscious) misunderstanding of the “biosphere reserve” concept, as already mentioned long ago by Batisse (1982) are the following: (a) it has sometimes been viewed as an unnecessary new name for the conventional type of protected area (mostly among strict conservationists and many other practitioners and policy-makers); (b) it has sometimes been perceived as just another conservationists' caprice among land-use planners; (c) it has been seen as contradictory the term “reserve” linked to the idea of human activity and the presence of people around it. In all these cases, the fact that only biosphere reserves can accommodate semi-natural ecosystems and even agrosystems equally well (conventional type of protected area) has been misinterpreted.

On the other hand, **Community Governance Systems**, as bottom-up initiatives (including CBNRM, ICCAs and the like), may also foster effective sustainable land management and conservation. Brown and Kothari (2011) highlighted how the first decade of the new millennium has experienced a shift in conservation paradigms, at the international level and in many countries. Outputs from a series of recent international events (which have marked this shift), all strongly stressed, once again, the need to centrally involve indigenous peoples and local communities in conservation, including respecting their customary and territorial rights, and their right to a central role in decision-making (see Armitage et al., 2020; Díaz et al., 2015; IUCN, 2008; Tengö et al., 2017).

Despite the effectiveness of community conservation formulas is increasingly evident and recognised at the international level, these still face many implementation and management difficulties. Different “bottom-up” approaches to nature conservation may or may not succeed depending on the real political will and national context and background. Two significant examples of these tendencies acknowledged by scholars are the following ones:

- On the one hand the Asian and Sub-Saharan African contexts where CBNRM (community-based natural resource management) and participatory initiatives have been widely spread but without a true political commitment to share power and responsibilities at the same level in most cases (Beltran, 2000; Borrini-Feyerabend et al., 2004).
- On the other hand, the Australian and Canadian contexts where local communities and indigenous movements have claimed their rights and gained their political space to negotiate from the beginning conservation policies regarding their land (Cullen-Unsworth et al., 2012; Hotte, 2020; Maclean and Cullen, 2009).

2.2. BIOSPHERE RESERVES

The concept of 'biosphere reserve' (BR) emerged from and constitutes a fundamental part of the programme on Man and the Biosphere (MAB). The MAB Programme originated with the Biosphere Conference held in 1968 in Paris. The first official definition of 'biosphere reserve' was given in 1970, in the plan proposed to the UNESCO General Conference where the MAB Programme was formally launched (Batisse, 1982; Bridgewater, 2002; IUCN, 2015). The initial innovative idea was to create a coordinated international system to demonstrate the importance of conservation and its relationship to development (Pool-Stanvliet, 2013); something still essential and challenging 50 years later. Biosphere Reserves support the notion of sustainable development as it is widely used today almost

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two decades before the formal recognition of the term “sustainable development”¹² in 1987 (Pool-Stanvliet, 2013).

Despite the audacity and the progressive nature of both the term and the idea of “biosphere reserves”, they were at the beginning somehow vague and with some ambiguity regarding their role and nature. To avoid future misunderstandings and to define precise operational guidelines for their implementation, all themes identified as components of MAB were elaborated in depth during the early nineteen-seventies (Batisse, 1982; UNESCO, 1971). The formulation of criteria and guidelines for the choice and establishment of biosphere reserves (UNESCO, 1974) was made to address the serious weaknesses and inadequacies of most conventional efforts in the field of environmental conservation to date (Batisse, 1982; UNESCO, 1973).

Since its first definition, the concept of BR was progressively elaborated and clarified until 1995, when the Seville Strategy (UNESCO, 1996) defined biosphere reserves as “areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognised within the framework of UNESCO’s Programme on Man and the Biosphere” (Ishwaran et al., 2008:122).

After the launching of the MAB Programme, a first ‘Action Plan for Biosphere Reserves’ was established during the First International Biosphere Reserve Congress (held in Minsk, Belarus in 1983) (Bridgewater, 2002; Pool-Stanvliet, 2013). This action plan was adopted by the International Coordinating Council of MAB (ICC-MAB) in December 1984 (Batisse, 1985; Bridgewater, 2002; UNESCO, 1996; UNESCO MAB, 2019). In March 1995, the Seville Strategy for Biosphere Reserves and the Statutory Framework of the World Network of Biosphere Reserves -WNBR- (UNESCO, 1996) were adopted at the Second World Conference on Biosphere Reserves (held in Seville, Spain); providing since then a common platform for the development of biosphere reserves (Robertson Vernhes, 2007). Both documents define the principles, criteria and procedures for the designation of BRs (Pool-Stanvliet, 2013). The Seville Strategy specifically notes that ‘biosphere reserves are established to promote and demonstrate a balanced relationship between humans and the biosphere’ (UNESCO, 1996) and is articulated around four major objectives (IUCN, 2015): (1) *the use of BRs for the conservation of natural and cultural biodiversity*; (2) *the use of BRs as models of land management and testing grounds for sustainable development*; (3) *the use of BRs for research, monitoring, education and training*; and (4) *to promote the implementation of the biosphere reserve concept, namely: integrating the functions of the biosphere reserves and strengthening their WNBR. For each of these objectives, recommendations were made at the international, national and BR levels* (IUCN, 2015).

With regard to zoning, each biosphere reserve was expected to contain one or more core areas, a clearly identified buffer zone and an adaptable transition area (UNESCO, 1996). Ideally, from the beginning the core area should be representative of a major ecosystem of world significance and be large enough to allow for in situ conservation of the genetic material of this ecosystem (Batisse, 1982). What is new here (i.e. the essence of the biosphere reserve concept) is the combination of three specific complementary functions which the core area and the buffer zones have to play in integrating the multiple purposes of the BR concept and the willingness to maintain the concept and approach as flexible as possible (as demonstrated in the first stages of implementation of the MAB programme (Batisse, 1982; Pool-Stanvliet, 2013)). The three complementary functions that each biosphere reserve must serve are detailed in the Seville Strategy as follows (see Fig. 9): “a conservation function, to preserve genetic resources, species, ecosystem and landscapes; a development function, to foster

¹² The term ‘sustainable development’ was only defined during the Brundtland Commission in 1987.

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sustainable economic and human development, and a logistic support function, to support demonstration projects, environmental education and training and research and monitoring related to local, national and global issues of conservation and sustainable development” (UNESCO, 1996).

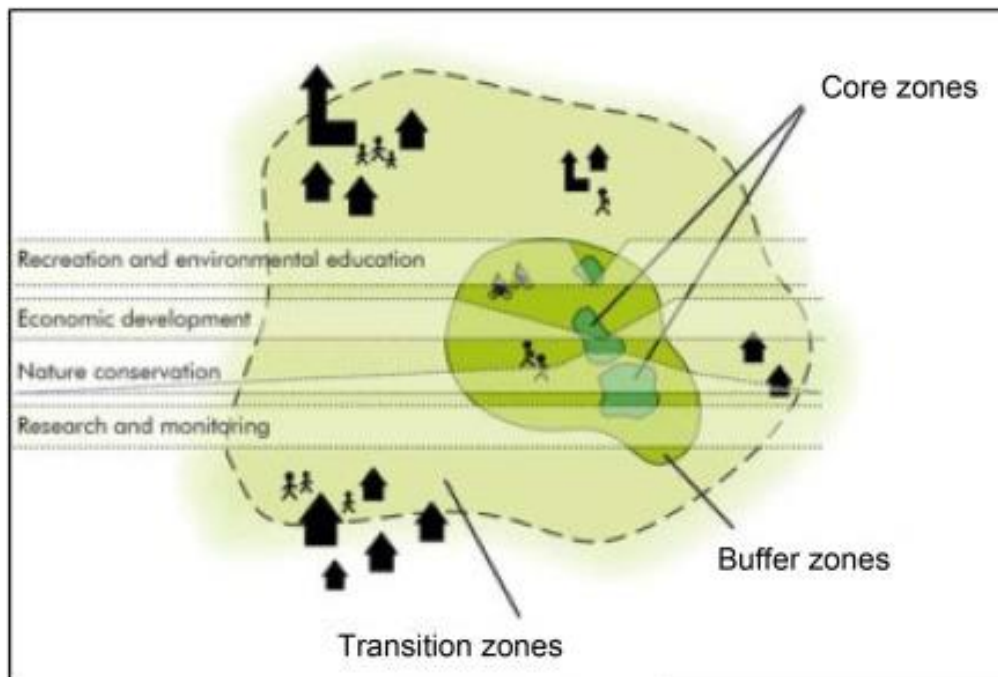


Figure 9: Complementary functions of biosphere reserves established by the Seville Strategy (1996) with regard to zoning. Source: adapted from Clüsener-Godt and Cárdenas Tomažič (2016).

The biosphere reserves’ functions (fully supporting the notion of sustainable development) need to be implemented within a defined landscape and delimited according to a zonation system along a progression from preservation (i.e. inner core areas) towards sustainable resource use in the form of buffer zones and an outer transition zone (Pool-Stanvliet, 2013). The vision for biosphere reserves into the 21st century, emerged from the Seville Conference, emphasised that biosphere reserves could become “models for sustainable development and theatres for reconciling people and nature” (Pool-Stanvliet, 2013). Although biosphere reserves are not recognised as formal protected areas, the concept offers a landscape-scale management framework that supports and demonstrates sustainable development (Alfsen-Norodom and Lane, 2002; Bridgewater et al., 1996; Bridgewater, 2002; Stoll-Kleemann and Welp, 2008).

The MAB Programme promotes the establishment of biosphere reserves throughout all biogeographical provinces of the world (Pool-Stanvliet, 2013) and their coordinated networking through the WNBR, launched in 1976 (UNESCO, 1996). The WNBR is organised into a support structure of regional and sub-regional networks. In 2020 the WNBR consists of 701 BRs (21 of which are transboundary) located in 124 countries. This includes 79 BRs in 29 countries in Africa, 33 in 12 countries in the Arab States region, 157 in 24 countries in Asia and the Pacific, 302 in 38 countries in Europe and North America and 130 in 21 countries in Latin America and the Caribbean (UNESCO MAB, 2019). From the beginning, as noted by Batisse (1982:104), “emphasis in the biosphere reserve network had therefore to be placed on representative ecosystems¹³ rather than on exceptional ones,

¹³ In the sense of Udvardy (1975).

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and the international network had to be established in such a manner as to cover them as systematically and adequately as possible”.

After the adoption of the Seville Strategy and the Statutory Framework of the WNBR in 1995, periodic review came into force aiming to set quality standards and control mechanisms of the WNBR (IUCN, 2015). Since then, Member States are invited to make progress in those biosphere reserves which do not meet the functions and criteria of Article 4. To this end, an exit strategy was adopted in 2013 at the 25th session of ICC-MAB¹⁴ to exclude from the network those sites which do not yet meet the 1995 criteria. These two processes are designed to further enhance the credibility and quality of the WNBR, which is the only intergovernmental system of conservation areas and sustainable development in the world (IUCN, 2015). The 5-year follow-up to the Seville Conference, the Seville +5 International Meeting of Experts, was held in Pamplona, Spain, in November 2000. Since then, biosphere reserves have entered a new phase with greater emphasis on their contribution to socio-economic development (IUCN, 2015; Pool-Stanvliet, 2013).

The Third World Congress of Biosphere Reserves was held in February 2008 in Madrid, Spain. The congress adopted the Madrid Action Plan (2008-2013) which outlined the MAB Programme strategy for the MAB Bureau and Secretariat, regional networks, national MAB committees, and individual biosphere reserves (Pool-Stanvliet, 2013). The Madrid Action Plan¹⁵ promoted biosphere reserves as “the principal internationally designated areas dedicated to sustainable development in the 21st century”. One of the objectives pursued was adaptation to new challenges that were emerging, especially those related to climate change, biodiversity loss and continuously growing urbanization (IUCN, 2015). However, the assessment in 2014 of the Madrid Action Plan revealed shortcomings in terms of the clarity and logic of the implementation of some of its actions, resulting in differences between the various biosphere reserves and countries. The new MAB strategy (2015-2025) and the Lima Action Plan (2016-2025) have incorporated the recommendations from the assessment and also emphasize the periodic review exit strategy as an effective process (IUCN, 2015).

The fields of action of the 2015-2025 MAB strategy are structured around five axes:

- *Biosphere reserves that are effectively functional.*
- *Dynamic social network oriented towards results-based collaboration (shift of focus towards South-South and triangular North-South-South cooperation).*
- *Mobilization of resources outside the MAB programme.*
- *Sharing and exchange of information and data by facilitating open and transparent communication.*
- *Effective governance.*

The implementation of the above strategic objectives and fields of action aim to be ensured by the Lima Action Plan (2016-2025) approved during the 28th session of the ICC-MAB in the Fourth World Conference of the Biosphere Reserve Network (held in March 2016 in Lima, Peru). It is important to note that the UNESCO's medium-term strategy (2014-2021) establishes for the two global priorities, namely Africa and Gender equality, strategic action to be implemented through (1) an operational strategy for Africa and (2) a Gender Equality Action Plan, as approved by the General Conference.

¹⁴ International Coordinating Council of MAB.

¹⁵ UNESCO. Madrid Action Plan for Biosphere Reserves (2008–2013) Available from: <http://unesdoc.unesco.org/images/0016/001633/163301e.pdf>

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As mentioned before, biosphere reserves are not recognised as formal protected areas (Pool-Stanvliet, 2013). In fact, the term “biosphere reserve” has been misleading to many people in this respect. The main point of distinction of a biosphere reserve is its conception as an open system, addressing the management issues of the surrounding areas, and incorporating the land-use management concerns of neighbouring communities (Batisse, 1982).

Another distinctive feature of UNESCO biosphere reserves is that there is not a standard legislation internationally established for them. BR designation “constitutes a moral commitment for the country concerned to manage it properly and to take part in the international network. There is no obligation for any country to designate biosphere reserves, and they have no particular legal status as such” (Batisse, 1982:105). In this way, the MAB programme avoids crystallizing unduly a concept which has to remain flexible¹⁶, therefore stressing the importance of the proper implementation and management of each BR over its legal framework. Nevertheless, some countries have considered special legislation for BRs and in many others, the legal protection derives from existing legislation on protected areas. At present, the issue of establishing adequate legal or regulatory measures at the national level (well-adapted to the BR concept) remains a major constraint for BRs all over the world.

Biosphere reserves are devoted to act as a bridge between environment and development, and are intended to ensure compatibility between long-term landscape conservation (their primary function) and sound natural resource management and ecosystem management (Batisse, 1982; Bridgewater, 2002). Furthermore, since early 1980s, authors like (Batisse, 1982) highlight the role that biospheres reserves should play regarding indigenous local and traditional knowledge (i.e. ILK and TLK): “(BRs) should also play an increasing role in the maintenance and transfer of indigenous technologies for land and water resources uses, thus helping to preserve cultural diversity in a world oriented towards uniformity”.

In addition, an essential value of implementing the biosphere reserve concept lies in its international affiliation with UNESCO; what Stoll-Kleemann (2007) calls “the UNESCO stamp of approval”. Pool-Stanvliet (2013) also states that “Being part of the WNBR carries a wealth of international recognition and access to expertise, thereby facilitating funding from a variety of international institutions”.

Some of the benefits and added values of BRs pointed out in the scientific literature worth noting are the following (Pool-Stanvliet, 2013; Stoll-Kleemann and Welp, 2008):

- a) pooling of expertise and knowledge that foster collaborative thinking about the future management of a defined space; and which results in high-quality decision-making.
- b) promoting collaboration and co-management practices between all stakeholders whilst upholding decentralisation of decision-making.
- c) more effective implementation of management practices because of wider support for the biosphere reserve.
- d) the ability to act as a coordinating unit between different organisations.

In addition to the distinctive features of biosphere reserves, there are certain success factors acknowledged in the scientific literature that are shared by most biospheres reserves worldwide. A first relevant example is the research project called “Governance of Biodiversity (GoBi)” (Stoll-

¹⁶ The first stages of implementation of the MAB programme have demonstrated the need for a flexible and pragmatic approach. “This has allowed us to cope with the great diversity of local situations, as well as with the need to reconcile in each particular case the different -and sometimes conflicting- functions assigned to biosphere reserves” (Cagri and Loope, 1977).

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Kleemann, 2007) that analysed the success factors for biosphere reserve management in 211 BRs worldwide (through a survey method). The results of GoBi showed that the following **factors** are **particularly important for biosphere reserves**: leadership and cooperation with local authorities, participation and involvement of local communities in the management of the reserve; long-term research and monitoring; modern nature conservation programmes and laws, financing guaranteed in the long-term; environmental education and sound qualification of staff and land users in the BR.

A second relevant example in the scientific literature regarding success factors shared by most biosphere reserves worldwide, is the research carried out by van Cuong et al. (2017). Under a different methodology (a Delphi process), this study collected expert opinion among the ninety BR identified (i.e. 60 successful BRs and 30 less successful BRs in 42 countries), to investigate common factors influencing success or failure of BRs. The results showed that the most influential factors for the success or failure of the BRs are the following: stakeholder participation and collaboration, governance, finance and resources, management, and awareness and communication. According to authors, the majority of unsuccessful sites are pre-Seville generation (i.e. managed as national parks and not amended to conform to the characteristics that are meant to define a BR), while the most successful sites are the post-Seville generation, better embracing the special nature of BRs.

2.2.1. BIOSPHERE RESERVES IN THE MEDITERRANEAN AND MOROCCAN CONTEXTS

Due to its singularity and relevance worldwide, the **Mediterranean region** has been acknowledged since the very beginning of the MAB Programme (Batisse, 1982; UNESCO, 1977), pointing out the relevance of considering interface and azonal ecosystems, such as coastal areas or traditional man-modified landscape (e.g. Mediterranean agro-pastoral ecosystems). Despite the Mediterranean finds its full meaning through its two northern and southern shores (i.e. the Euro-Mediterranean and North African contexts), it is obvious that differences persist (e.g. socio-economic, cultural and political context) influencing differently BRs on both shores of the Mediterranean (IUCN, 2015). As an example, the “Comparative Analysis of the Mediterranean Biosphere Reserves” made by IUCN (2015), with the participation of 7 Mediterranean countries, highlighted that the **topics of common interest** are articulated around the following axes:

- The restoration of degraded habitats.
- The rehabilitation of species of flora and fauna.
- Improving public use and sustainable tourism.
- Management and enhancement of natural and cultural heritage.
- Agro-pastoral management.
- The implementation of monitoring programmes and the consequent involvement of researchers.
- Strengthening the capacity of technical staff, coordinators, managers and decision-makers.
- Creation of study centres and observatories.
- Creation of interpretation and environmental education centres.

However, information is scarce and dispersed on the Mediterranean level. After having conducted a systematic literature search, the research gap in this area of the world is evident. In this respect, the situation is quite similar in the North African context, where just a few studies are focused on BRs. The aforementioned “Comparative Analysis of the Mediterranean Biosphere Reserves” is a valuable reference. The comparative analysis points out that the main common issues affecting BRs in Southern Mediterranean Region are those related to financing, management assessment models and the

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establishment of governance bodies. Furthermore, communication and collaboration as well as the participation and involvement of local communities need to be further strengthened (IUCN, 2015:61).

Additionally, it is worth mentioning in the North African context of BRs, the recently launched¹⁷ Arab-African Biosphere Reserve Initiative (AABRI), also known as the joint MAB-IHP Initiative (UNESCO MAB-IHP, 2016), and the most active regional MAB network regarding the study area. The AABRI calls for Biosphere Reserves as Climate Change Observatories and Sustainable Development Laboratories in the Arab-African Region; and supports a platform for knowledge exchange and development between the MAB Committees of these countries. During the 2nd Arab-African meeting (held in October 2017 in Agadir) 40 participants representing 20 Arab and African countries discussed two major themes: first, the role of regional initiatives in sustainable development and climate change; and second, the AABRI as a lever for sustainable development.

Concerning the **Moroccan context**, despite the country's commitment to sustainable development and interest in environmental issues did not become evident until mid-1990s, Moroccan legislation in terms of biodiversity and protected areas dates back to the beginning of the last century (Fassi et al., 2011). Positive law was developed in the euphoria of mainstream modernism, without much respect for the quality values contained in traditional forestry and environmental provisions (Fassi et al., 2011). This classic conservationist vision is still relevant in Morocco, and widely permeates most of the institutions competent in the field of conservation. However, the coexistence of positive law with traditional values (especially in the mountains and on the edge of the Sahara) and traditional nature conservation regulations (as described in the following section) are also a socio-cultural reality worth noting.

At the national level, **Moroccan biosphere reserves** are not included either in the Framework Plan and legislation for Protected Areas of 2003¹⁸, or in the new law of 2010¹⁹. Which means that at present they have no national legal framework or provisions supporting them (other than certain national parks and SIBEs included as core areas). The functioning of BRs as areas of protection and development, aims to positively impact the overall approach of spatial planning at national level (Fassi et al., 2011). This has not been the case so far and neither conservation nor development policies seem to sufficiently embrace or integrate the concept of BR at present.

However, at the international level, Morocco ratified three important conventions during the decade of 1990s that set up the national context leading to the later establishment of the first biosphere reserve in the country, the Arganeraie Biosphere Reserve (RBA). These conventions are: (1) United Nations Framework Convention on Climate Change (FCCC), ratified in 1992; (2) Convention on Biological Diversity (CBD-UNEP, 1992), ratified in 1995; and (3) United Nations Convention to Combat Desertification (UNCCD), ratified in 1996 (see Fig. 10). The UNCCD led to a national and regional strategy to combat desertification and set the arena for the two first Moroccan biosphere reserves (RBA in 1998 and Oasis du Sud marocain BR in 2000) as the flagships of the national strategy.

¹⁷ The First Arab-African Meeting on Biosphere Reserves, co-organised by UNESCO, ISESCO and HCEFLCD took part in Tangiers from 18 to 20 October 2016, before COP22.

¹⁸ Framework Plan for Protected Areas, established by the law 11-03 on the protection and development of the environment, promulgated in May 2003.

¹⁹ Law 22-07 concerning protected areas, promulgated in August 2010, B.O. 19/08/2010.

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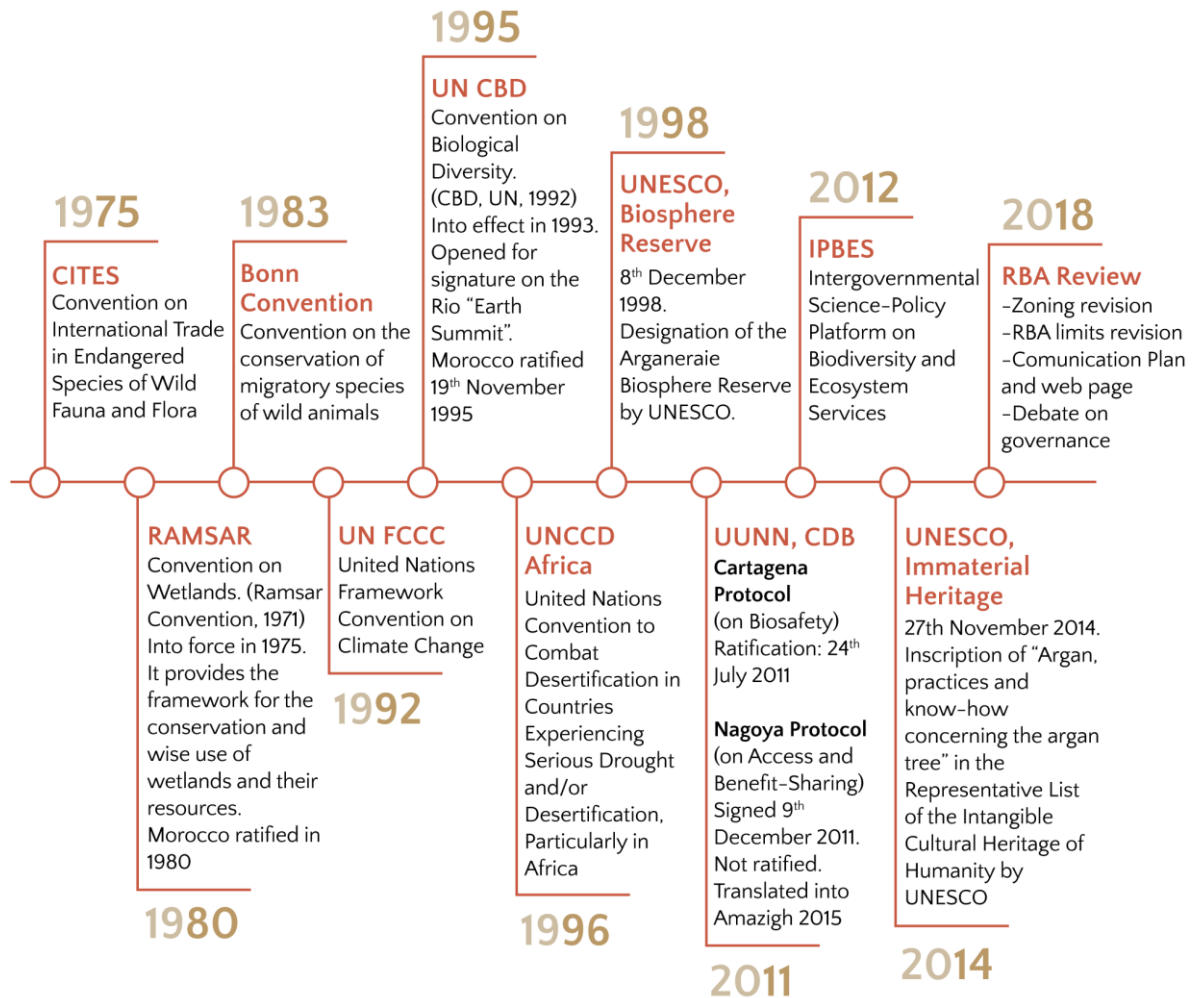


Figure 10: Timeline for the most relevant protection events and policies related to the Arganeraie in recent history. Source: own elaboration.

As remarked by Fassi et al. (2011), "Morocco has officially committed itself to a policy of creating latest-generation biosphere reserves, the most demanding of all, which poses many implementation problems". From the beginning, Morocco's choice was made in terms of development; from this perspective, it was necessary to consider all the components of economic life and try to direct them towards greater sustainability, as well as to adopt the appropriate spatial scale of integration. This resulted in **biosphere reserves of huge surface area and enormous complexity** (Fassi et al., 2011).

The two first Moroccan biosphere reserves designated concern two southern areas, the Arganeraie Biosphere Reserve and the Southern Moroccan Oasis Biosphere Reserve, both of which are on the frontline of the largest desert on the planet (Fig. 11 and Table 4). They are part of a national and regional strategy to combat desertification (i.e. the National Action Programme to Combat Desertification, PAN-LCD 2001). Whereas the two more recent BRs are included in a national strategy to conserve or even increase natural resources, like biodiversity, water resources, etc. (i.e. National Biodiversity Strategy and Action Plan for the Conservation and Sustainable Use of Biodiversity, 2004) (CHM-CBD, 2020; Fassi et al., 2011).

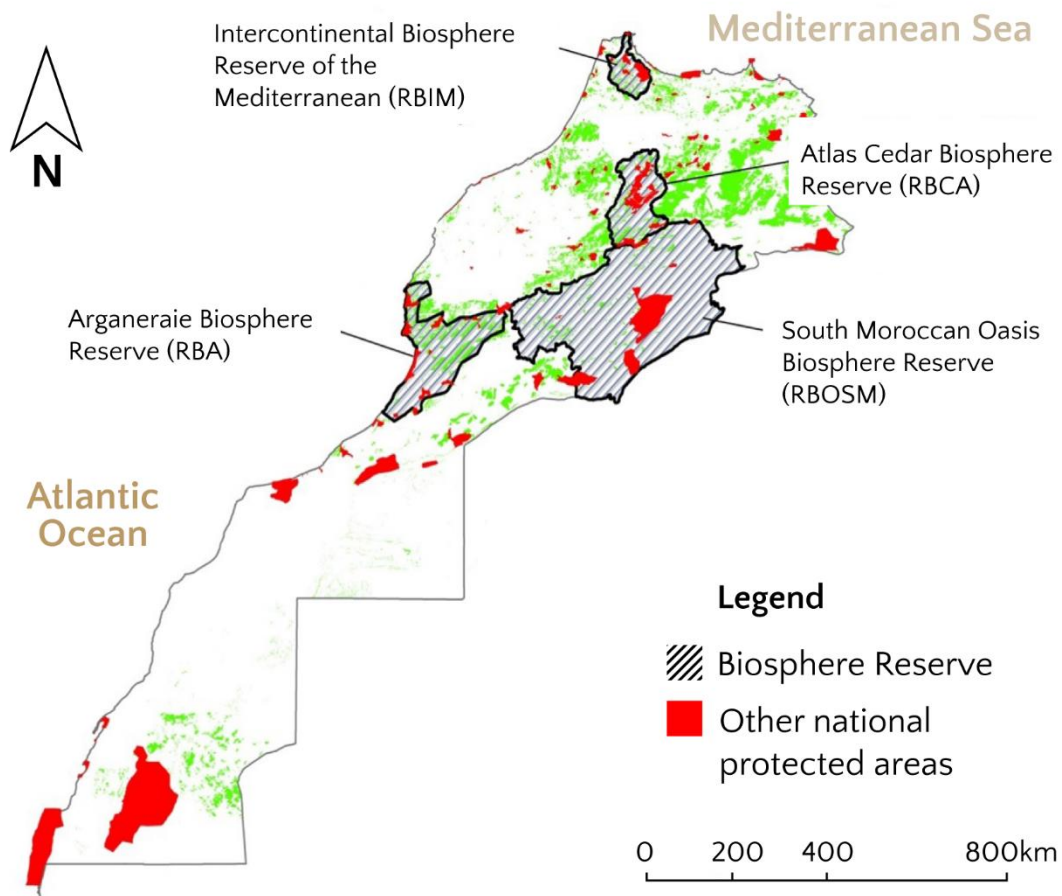


Figure 11: Moroccan Biosphere Reserves. Source: HCEFLCD, 2016.

Name	Date of declaration	Surface (ha)	Population (inhab.) (*)	Provinces	Region	PAs/SIBE
Arganeraie (RBA)	8 th Dec. 1998	2,499,970	3,121,116 (421,844 in Agadir)	Agadir Ida Outanane, Inezgane Aït Melloul, Chtouka Aït Baha, Taroudant, Tiznit, Essaouira, Sidi Ifni	Souss-Massa	1 NP (Souss Massa) and 13 SIBEs (terrestrial and coastal)
Oases of Southern Morocco (RBOSM)	10 th Nov. 2000	7,185,371	1,600,000	Ouarzazate, Errachidia, Zagora	Oases on the southern side of the Central and Eastern High Atlas Mountains	2 NP (Iriqui & Haut Atlas Oriental) and 7 SIBEs
Intercontinental BR of the Mediterranean (RBIM)	27 th Oct. 2006	907,185 (470,600 Mor., 423,535 Sp. & 13,050 water)	529,086 (402,227 Mor., 126,859 Sp.)	Tanger, Tetouan, Chefchaouen, Fahs-Anjra, Fnidek, Larache (Tanger-Tetouan-Al Hoceïma Region; Morocco); Cadiz, Málaga (Andalusia Region; Spain);	Rif (Morocco) & Andalusia (Spain)	1 NP, 4 SIBEs and 2 project of natural parks.
Atlas Cedar (RBCA)	19 th Mars 2016	1,375,000	1,000,000 approx.	Ifrane, Khénifra	Moyen atlas et haut Atlas oriental	3 NP and +20 SIBEs (terrestrial and wetlands)

Table 4: Moroccan Biosphere Reserves. Source: (CHM-CBD, 2020; DREFLCD-SO, 2019). *HCP-RGPH 2014 (HCP, 2014).

The **Moroccan National MAB Committee** is a local body made up of knowledgeable people, chosen for their personal and professional qualities. It is a voluntary work and most of the current members have an academic profile. MAB Committee’s tasks include: (a) to bring UNESCO's programme in the country closer to the people; (b) to represent UNESCO at the country level (and *vice-versa*); and (c) to advise, inform and accompany the dossiers of BRs presented by the country (IUCN, 2012). The MAB Committee is structured to ensure constructive cooperation with all State departments that collaborate with UNESCO. It contributed particularly and very actively to the proposal, to the approval,

and then to the reflection on the functioning of the two major Moroccan biosphere reserves (i.e. the RBA and the RBOSM) (Fassi et al., 2011).

At this point it is worth mentioning that the dossiers of the first three BRs presented by Morocco have been the result of international cooperation partnerships in which the MAB Committee has been actively involved. German cooperation regarding the Arganeraie and the RBA (i.e. GTZ, at present named GIZ); French cooperation regarding the RBOSM (i.e. Luberon National Park and the PACA network -Provence, Alps, Côte d'Azur-); and Spanish cooperation for the RBIM (i.e. autonomous government of Andalusia). Within the different partnerships, the national MAB committee has made relevant contributions to the deliberations on the approach and feasibility of the reserves (Fassi et al., 2011).

2.2.2. ARGANERAIE BIOSPHERE RESERVE

The Arganeraie Biosphere Reserve (RBA) stands out in the Mediterranean context in terms of (i) natural heritage, socio-economic activities and public use, as recognised by the IUCN (2015); and (ii) cultural heritage, internationally recognised by the UNESCO in 2014 through the inclusion of the “Argan, practices and know-how concerning the argan tree” in the Representative List of the Intangible Cultural Heritage of Humanity (UNESCO ICH, 2014).

The Argan forest in South-Western Morocco (i.e. Arganeraie) is an ecosystem bio-ecologically unique in the world that covers a surface of approximately 950,000 ha (Le Polain De Waroux and Lambin, 2012). Its dominant species, the argan tree (*Argania spinosa* (L.) Skeels), is a Moroccan endemic “living fossil” of great ecological plasticity and high genetic diversity (Kenny, 2007; Msanda et al., 2005; Peltier, 1982; Romera, 2017) and the defining species for its eco-region. An eco-region on which over 1,200 other plant and animal species depend, 140 of which are endemic (UNESCO, 2017).

The RBA covers a vast *intramontane* plain of more than 2,560,000 hectares, bordered by the High Atlas and Anti-Atlas mountains and open to the Atlantic in the west; covering the whole ecosystem “Arganeraie”. Many authors refer to local and traditional human management as the most likely reason behind the good state of conservation and the expansion of its geographical distribution. Along with the know-how, practices and social management systems developed through millennia by Amazigh populations of agro-pastoralists (Alifriqui, 2004; Michon et al., 2015; Nouaim, 2005; Simenel, 2011). Thus, as a cultural heritage, the Argan plays a central role in the agro-pastoral economy of the area, attested from the 10th century (most probably many centuries before) (Romera, 2017; Ruas et al., 2011).

Therefore, the Argan tree is not only important in terms of conservation, but also for research and socio-economic development. So far, the Argan tree has defied domestication. For centuries, the argan tree has been used as fuelwood for cooking and heating and the oil of the Argan fruit has been a mainstay for the Amazigh people of the region (due to its multiple uses in cooking, medicines and cosmetics). In this sense, the official designation in December 1998 of the Arganeraie Biosphere Reserve (RBA) was one the two main outcomes resulting from a governmental cooperation agreement between Morocco and Germany in 1995. Within the framework of this initiative, the GTZ²⁰ implemented a 5 years long plan for the conservation of the Arganeraie (1998-2002), called

²⁰ Currently GIZ, i.e. German Cooperation Agency.

“Programme for the Conservation and Development of the Arganeraie”²¹ (PCDA) (Damamme, 2005; Fassi et al., 2011).

The PCDA became a leverage point in the recent history of the Arganeraie: while the **“conservation outcome” of the PCDA was the establishment of the RBA in 1998**; the **“development outcome” of the PCDA led to the “Argan oil sector” take-off in 1999**. Since 1999, the argan oil has met with an enormously increasing interest and appreciation in Europe and other high-value markets (UNESCO, 2018c, 2017). In this context, the Arganeraie Biosphere Reserve and the Argan forest have become an international well known example of “problems inherent to territorial and conservation issues” (Breton, 2009), where “the challenges and stakes of exploiting and developing local resources for the benefit of local development” (Fasskaoui, 2009) are evident and worth further research.

THE ARGAN OIL SECTOR IN THE RBA

There are two contrasting accounts of the argan oil sector (development lever) in the RBA (conservation lever). The Arganeraie is recognised as a well-studied paradigmatic Moroccan biocultural heritage that has quickly shifted from the unknown to be classified as UNESCO BR (Fasskaoui, 2009) and a booming sector (i.e. the Argan oil sector) (le Polain de Waroux and Lambin, 2012; Lybbert et al., 2011).

For centuries, the production of argan oil has been restricted to the family context of Amazigh populations living in the Arganeraie. Argan oil was traditionally produced and used by women for cooking, hair and skin care, as a cure for various illnesses or as a gift for young brides. Occasionally, the domestic production surplus was sold in local or regional souks at a relatively low market value (e.g. 2-3 \$ per litre to tourists in national mountain road borders around 1980s (Charrouf and Guillaume, 2009)).

Since the early 1990s, various scientific advances concerning the chemical properties of argan (Charrouf et al., 2008, 2002, 1992; Oulad-Ali et al., 1996) attracted the attention of cosmetic and pharmaceutical laboratories, namely in Europe and USA. In this context, two international development cooperation projects have greatly influenced the subsequent dynamics (socioecological and socio-economic). First, the Programme for the Conservation and Development of the Arganeraie (i.e. PCDA) mentioned above. The **PCDA**, led by the German cooperation GIZ and the Moroccan government, executed between 1998 and 2002 (Damamme, 2005) had the “triple win” objective of conservation, rural development, and economic growth (Kelly, 2011; Turner, 2009). Second, the EU’s MEDA II programme, known as the **“Arganier” project**²² (2002-2009). The “Arganier” project was a 12-million-euro project led by the Moroccan Social Development Agency (ADS) and the European Union (MEDA II-EU), with the EU financing the 50% (ADE, 2009). These two projects laid the foundations, supported and financed the creation and equipment of a large number of argan-oil women-led cooperatives throughout the Arganeraie, fostering the “Argan oil sector” take-off (Dossa, 2011; Nill and Böhnert, 2006).

Subsequently, private firms entered the market, buying raw material for processing. Demand for argan oil exploded in Europe and the United States and prices rose accordingly (e.g. export prices in the 2010s reach over 400 US-\$per litre) (le Polain de Waroux and Lambin, 2012:590), turning argan oil into

²¹ Projet pour la conservation et le développement de l’Arganeraie.

²² Project "Support for the improvement of the employment situation of rural women and sustainable management of the argan tree in the south-west of Morocco". “Programme d'appui à l'amélioration de la situation de l'emploi de la femme rurale et à la gestion durable de l'Arganeraie dans le Sud-Ouest du Maroc”.

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the world's most expensive edible oil. National and regional governments fostered this tendency. On the one hand, the Green Morocco Plan (2012-2020) (i.e. the national strategy on agriculture) contributed to this boom by placing the argan oil production at the centre of the Souss Massa region rural development strategy (ADA, 2009). On the other hand, the Regional Council of Souss Massa developed and launched the IGP Argan Oil (i.e. protected geographical indication) (AMIGHA, 2009; Romagny, 2009).

During the last decade (since 2009 approx.), increasing criticism over the conservation and development claims, has unveiled the high level of complexity and contradiction cross-scale that this model presents since the very beginning of its promotion (e.g. le Polain de Waroux and Lambin, 2012; Lybbert et al., 2010; Michon et al., 2015; Romagny and Guyon, 2009; among others). Complexity and contradiction which should not be overlooked and which should be reflected upon in-depth at many levels and cross-scale.

3. COMMUNITY GOVERNANCE SYSTEMS. A bottom-up approach to environmental governance

The relevance of community-based natural resource management to local livelihoods, participatory development and conservation is not new to scientists (Arnstein, 1969; Habermas, 1973), although they have only begun to speak extensively and with an empirical basis since the 1980-1990s (e.g. Berkes, 1989; Gow and Vansant, 1983; Little, 1994), when concepts like community-based sustainable development, common property resources or community-based conservation became widespread. At present, with regard to bottom-up approaches to environmental governance, relevant terms in the scientific literature worth to be considered are: community conservation, community governance, Community Conserved Areas (e.g. ICCAs, APACs), (rural) commons, communal management, collectively managed lands, community-based natural resource management (CBNRM), Communal Governance Systems (CGS) or customary governance, among others.

Governance by local communities and indigenous peoples is one of the oldest forms of conservation and governance of land and natural resources (Berkes, 2007; Borrini-Feyerabend and Hill, 2015; Garnett et al., 2018; Sobrevila, 2008). In a recent “spatial overview of the global importance of indigenous lands for conservation”, Garnett et al. (2018) state that local communities and indigenous peoples manage or have tenure rights over at least a quarter of the world’s land surface ($\geq 28.1\%$), intersecting about 40% of all terrestrial protected areas and ecologically intact landscapes. This, applies to any type of land, water and natural resources governed and managed collectively by a settled, transhumant or nomad community of people (i.e. ‘commons’), often adapting to the local ecological conditions in order to manage the natural resources (on which they depended) in the long-term (Borrini-Feyerabend and Hill, 2015). Many human cultures were actually created around that ‘fitting’ process, generating valuable biocultural diversity (Posey, 1999 in Borrini-Feyerabend and Hill, 2015:183).

It is worth mention, as several authors have noted (e.g. Borrini-Feyerabend and Hill, 2015; Garnett et al., 2018; Tengö et al., 2017), that while intentional conservation of biodiversity is unlikely to be at play for local communities and indigenous peoples, by pursuing objectives like survival, security, spirituality or aesthetics, they frequently achieve species and ecosystem-related conservation outcomes.

In the field of community conservation and communal management systems the **definition of “local community”** presented by Borrini-Feyerabend and Hill (2015:184) is widely accepted: “A local community is a human group sharing a territory and involved in different but related aspects of livelihoods -such as managing natural resources held as ‘commons’, developing productive technologies and practices, and producing knowledge and culture-. We speak of a local community when its members are likely to have face-to-face encounters and/or mutual influences in their daily life -whether they are permanently settled or mobile”. Authors add “a community’s sense of identity and cultural characteristics are often shared, although multiple ethnic groups can be found in the same community. **A local community can only be self-identified**”.

While the former definition fits the local level of analysis, when looking issues of governance at the multilevel and the multiscale, I consider particularly insightful this other definition by Armitage and colleagues for the relevant implications that it has over the results of the present research. Armitage et al. (2020:5) define **community** as “an inclusive construct for conservation science and practice that includes diverse communities (community of place, of practice, of interest, etc.), groups (producer

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groups, cooperatives), and/or networks (alliances among indigenous people [rights-holders] and external allies)”.

Regarding the term ‘indigenous peoples’ Borrini-Feyerabend and Hill (2015) notes that it is often misunderstood; and official definitions of Indigenous Peoples are often contested (Garnett et al., 2018). This is the case in Morocco where (as I will argue in a later section), for various historical and cultural reasons, the terms “indigenous” and “autochthonous” are strongly contested and rejected at many different scales and levels; raising many sensitivities that can lead to rejection and blockage (from communication and understanding among people, to potentially beneficial projects and processes for the communities involved).

However, when analysing the international scientific literature that allows to situate the present research in a broader context and reflection, I cannot ignore the terms “indigenous” and “autochthonous” (still a source of pride for many communities elsewhere). So I will talk about them here but I will focus the analysis and reflection on local governance in a broader and more inclusive sense without relying on pre-established definitions or approaches. Definitions such as governance, local community, *agdal* or rights-holder are part of the results as I have chosen to ask participants (at several levels) to elaborate their own definitions.

Garnett et al. (2018) aggregated globally, for the first time, publicly available geospatial information on Indigenous lands (see Fig. 12), contributing to further understand the extent to which local communities and indigenous peoples are involved in managing areas of high conservation value. Their results add to growing evidence recognising that local communities and indigenous peoples’ rights to land, benefit sharing and institutions is essential to meeting local and global conservation goals (Garnett et al., 2018; UNEP-WCMC et al., 2018)²³. Authors also identified ICCAs in 87 countries, being the proportion of countries with ICCAs highest in Africa and lowest in Europe-Central Asia.

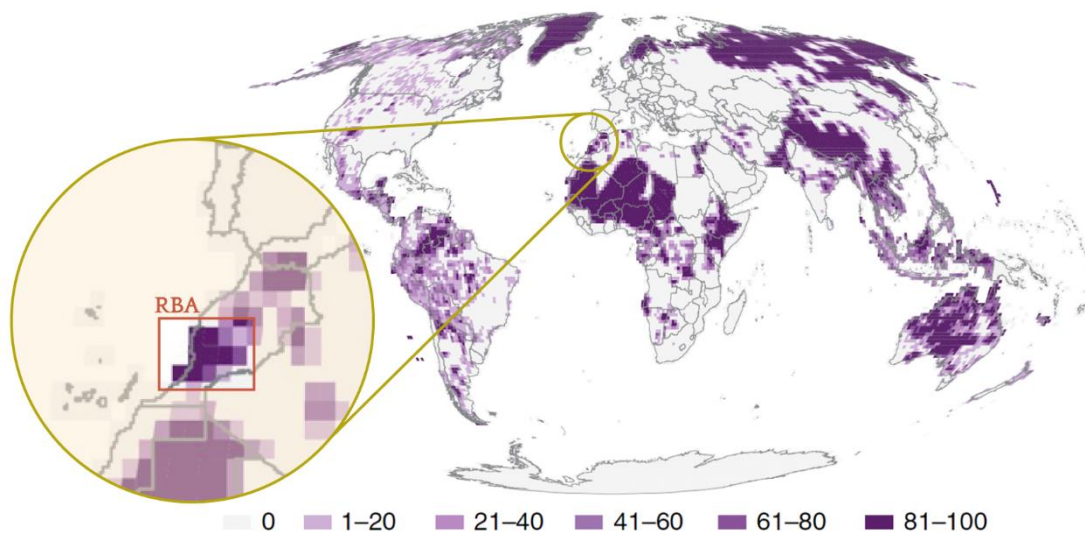


Figure 12: Global map of lands managed and or controlled by local communities or indigenous peoples (percentage of each degree square mapped as indigenous in at least one of 127 source documents). Source: Garnett et al. (2018).

²³ At present, the international community also benefits from an increasing engagement of indigenous peoples and local communities in global environmental forums and their participation in global policy-related processes such as IPBES and the CBD (Garnett et al., 2018).

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The aforementioned global **shift in conservation paradigms** experienced during the first decade of the 21st century in many countries, includes not only classical national protected areas, but also the increasing recognition of indigenous peoples and local communities' conservation practices and their incorporation and support as part of national Protected Area systems. Brown and Kothari (2011:143) consider it “a powerful and clear mandate for all nations to move ahead on community-based conservation with elements of decentralized governance, rights, and conservation effectiveness”.

In this sense, two crucial paradigm shifts in conservation were made at the World Parks Congress (i.e. WPC-2003, Durban) regarding (i) **collaborative management** involving, as equal decision-makers, indigenous peoples and local communities and (ii) recognition and support of conservation practices of indigenous peoples and local communities in their own right, in the form of **community conserved areas (CCAs)**²⁴ or alike. Then, the 7th Conference of Parties to the CBD (Kuala Lumpur, 2004) made an additional major international breakthrough in committing countries to identify, recognise, and support ICCAs. Since the CBD is a legally binding instrument, its outputs are of great significance for all countries (Brown and Kothari, 2011).

Furthermore, countless customary management institutions have already proven to be remarkably persistent and resilient, suggesting that such community governance forms can shape sustainable human landscape relationships in many places (Norman, 2017; Simon and Randalls, 2016; Trospen, 2002). Authors like Brondizio and Le Tourneau (2016) and Garnett et al. (2018) claim that the maintenance of the conservation values of a significant share of the planet depend on the customary institutions and actions of local communities and indigenous peoples (even in places where they are still in the process of regaining land rights). They are important international actors in protected area management, as shown by the scale of global spatial overlap between local communities and indigenous territories and protected areas worldwide (Garnett et al., 2018). However, it is imperative to understand the interactions between indigenous and environmental considerations when negotiating local or global conservation agreements (Corrigan et al., 2018; Garnett et al., 2018; Mantyka-Pringle et al., 2015).

Most indigenous peoples and many traditional communities are characterised by a very close relationship with their territories and natural resources (Borrini-Feyerabend and Hill, 2015:185). Besides, the relationship between local communities and indigenous peoples and conserved areas varies in nature²⁵. It ranges from collaborative governance where state authorities and local or indigenous peoples share decisions and responsibilities (to varying degrees), to de facto management and use of protected areas by local communities or indigenous peoples (Garnett et al., 2018). Yet, indigenous peoples and local communities usually uphold collective rather than individual rights over their land or natural resources. Such collective rights provide a strong basis for the functioning of community institutions, which are indispensable for sound governance and long-term management practices. However, these collective relationships have more to do with identity than with property and monetary values. Borrini-Feyerabend and Hill (2015:185) claim that collective approaches “tend to maintain the integrity of a territory, avoid ecological fragmentation and foster long-term objectives, all key requirements for biodiversity conservation”; and suggest recognising the conservation role and

²⁴ This term was subsequently changed to indigenous peoples and community conserved areas (ICCAs).

²⁵ While some protected areas (as defined by states and/or the IUCN) are under the governance of Indigenous Peoples themselves, others are governed by state authorities with varying degrees of respect for the presence of Indigenous Peoples.

capacities of indigenous peoples and local communities as a strong argument to promote the formal recognition of their customary collective rights (Borrini-Feyerabend and Hill, 2015:185).

3.1. COMMUNITY CONSERVED AREAS

As defined by the IUCN, the term ‘conserved area’ describes “area-based measures that, regardless of recognition and dedication, and at times even regardless of explicit and conscious management practices, achieve *de facto* conservation and/or are in a positive conservation trend and likely to maintain it in the long term” (Borrini-Feyerabend and Hill, 2015:178). Indeed, conserved areas have been decisive to approaching the Aichi Target 11²⁶ referred to conservation, as countries report their surface of **protected and conserved areas** (UNEP-WCMC et al., 2021).

From the Vth IUCN World Parks Congress in 2003 onwards (IUCN, 2008), and respecting their innate uniqueness and variability, a specific formula has emerged for the territories and areas conserved by local communities and indigenous peoples (generally commons). They have been internationally recognised as “Indigenous Peoples and Community Conserved Areas (ICCAs)²⁷” due to the fact that they have their own particularities²⁸ and therefore face common challenges (Corrigan and Granziera, 2010; Dudley, 2008; Kothari et al., 2012).

These recent conceptual and international policy developments in protected area governance and management recognise ICCAs as one of the four main types of protected area governance (e.g. IUCN, IISD_CBD and UNEP). The Strategic Plan for Biological Diversity 2011-2020 and the Aichi Targets (CBD, 2021) highlight the vital role of local communities in biodiversity conservation. As well as Article 8(j) of the Convention on Biological Diversity (CBD) (CBD-UNEP, 1992), which emphasizes traditional knowledge, innovations and practices.

Since its emergence, ICCAs have been identified internationally as areas, resources, habitats or ecosystems voluntarily conserved and self-governed through community values, practices, rules and institutions (Kothari et al., 2012). As stated by (Borrini-Feyerabend and Hill, 2015:185), there are three essential characteristics common to ICCAs:

- *An indigenous people or local community possesses a close and profound relation with a site (territory, area or habitat).*
- *The people or community are the major players in decision-making related to the site and have de facto and/or de jure capacity to develop and enforce regulations.*

²⁶ “By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape” (CBD, 2021).

²⁷ Known and referred to as “Aires de Patrimoine Autochtone et Communautaire (APACs)” in the French literature and Maghreb context, among others.

²⁸ For instance, land may be collectively owned and managed, while specific resources, such as a type of tree, may be owned or managed individually or on a clan basis. Different communities may manage the same area at different times of the year or use different resources within the same area. Also, specific procedures and/or rituals may need to be respected for activities to be allowed (Borrini-Feyerabend and Hill, 2015).

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- *The people's or community's decisions and efforts lead to the conservation of biodiversity, ecological functions and associated cultural values, regardless of original or primary motivations*²⁹.

When ICCAs' governing institutions decide to have an explicit dedication to conservation and ensure some form of management continuity, the IUCN recognises that such ICCAs also possess the characteristics of protected areas. Yet, as various authors highlight (Borrini-Feyerabend and Hill, 2015; Brown and Kothari, 2011; Kothari et al., 2012) most ICCAs in the world are not recognised for their conservation value in their own countries; which means that they are neither recognised as part of their national protected area systems, nor offered recognition and support for the conservation benefits they offer to society at large.

Regarding **Mediterranean Community Conserved Areas**, a relevant recent global review on “successes, challenges, and lessons from Indigenous protected and conserved areas” published on “Biological Conservation” by Tran et al. (2020) analysed 86 specific initiatives involving at least 68 Indigenous Peoples across 25 countries. Only one of all the initiatives analysed was Mediterranean (*Mesioui agdals*, Morocco³⁰).

Besides the review of Tran et al. (2020), the most comprehensive attempt to explore and document ICCAs to date was published by the CBD (Kothari et al., 2012): “Recognising and Supporting Territories and Areas Conserved By Indigenous Peoples And Local Communities: Global Overview and National Case Studies”. This review evaluated examples in 19 countries³¹ under the ICCA framework and suggested recommendations for state, civil society, and Indigenous actors to support and recognise these initiatives. Among the 19 case studies reviewed, 3 were Mediterranean European countries (Croatia, Italy and Spain). The study was based on publications and reports that were readily available and reviewed by experts within these countries and internationally.

Despite it may be evident that research regarding ICCAs in the Mediterranean region remains an underrepresented research topic (specially in southern Mediterranean); the above mentioned three North-Mediterranean case studies plus the example of the Albanian forests, are outstanding examples of rural commons and or ICCAs across the Mediterranean. That's the case for Albania (Bernard et al., 2013), Croatia (Benes, 2012), Italy (Bassi, 2012) and Spain (Couto and Gutiérrez, 2012). Unfortunately, all of them are European.

3.2. MOROCCAN LOCAL COMMUNITIES AND AGDALS

Since ancient times, tribes have been at the heart of political, economic and social life in rural Morocco. The rural population was organised in tribes inter-linked by a system of traditional political alliances (*leff-s*, *çoff-s*) (Bendella, 2019; Lakhsassi and Tozy, 2000). Tribal dynamics have been the subject of various sociological and anthropological studies (Rachik, 2007, 2002; Tozy, 2002), showing the variable relations with the Makhzen (i.e. State or Government “power”, State apparatus) according to regions and periods. Each group had designated community institutions (including a local

²⁹ For further information on the wide range of motivations leading to the establishment of ICCAs, see Kothari (2006).

³⁰ See Dominguez and Benessaiah (2017).

³¹ Australia, Bolivia, Canada, Chile, Costa Rica, **Croatia**, England, Fiji, India, **Iran**, **Italy**, Kenya, Namibia, Panama, Philippines, Russia, Senegal, **Spain**, Suriname.

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government), agreed decision-making processes and a judicial system. Among these institutions, local customary law was the most widely used and applied in collective matters (Bendella, 2019).

Until 1912, the legal and political framework, at the central government level, was able to adapt and navigate this diversity without any real attempt to impose a unified system. Then the protectorate established a double dynamic, on the one hand, strengthening a unifying central State, and on the other hand, the institutionalisation of the tribal system. Right after the independence the Moroccan public authorities proceeded to renew the territorial administration again, revoking the institutionalisation of the tribal system and neglecting it. At present, the Moroccan legal system is a civil system, established by a written Constitution. Despite all these events, the tribe managed to maintain itself in some areas and today the Moroccan government tolerates the use of provisions and institutions of customary law (e.g. collective land, traditional water rights, *Jmaâ*, etc.) (Bendella, 2019).

3.2.1. LOCAL COMMUNITIES

Although the tribe has officially been replaced by the territorial commune (national administrative organization), it still constitutes the natural framework for rural life and prevails as a framework for social, economic life and management of access to natural resources in many areas important for biodiversity (Lakhsassi and Tozy, 2000; Es-Siari, 2019 as cited in Bendella, 2019). Good examples of this reality regarding the local community level would be: first, the minimal unit of population grouping are the douars (i.e. villages) despite being the territorial communes (i.e. municipalities), the official ones. Second, primary schools, when feasible, tend to be located at the douar level (or grouping of a few douars). Third, there exist official statistics regarding basic demographics at the douar level.

In this context, and even though some of them have disappeared, many local communities have become excellent examples of resilient societies, able to adapt to multiple changes in their environment (e.g. socio-demographic, political, cultural, economic and climatic) while maintaining their traditional institutions. These local communities and traditional institutions generally manage to maintain themselves as long as: (1) their scope of action does not encroach on what the State considers to be its exclusive competence; (2) their size corresponds to operational and routine scales of interaction; and (3) the land withdrawals have left sufficient surface area for the normal functioning of the community (Bendella, 2019:4).

Due to the limited administrative and surveillance capacity of the Moroccan state/government over its territory (until present), there have always been two different paces or speeds between urban areas, the agricultural plains and other more developed areas, on the one hand, and a large part of the rural mountain regions, on the other. This partly explains why these local communities were able to conserve their land and continue to manage their resources according to traditional uses and through their ancestral institutions; and why modernization reforms introduced by the state after the Independence in 1956 had little effect in areas where community-based management of land and natural resources (i.e. CBNRM) had remained predominant (Bendella, 2019:4).

In addition, and in connection with *agdal* (one of these traditional tribal institutions and community-based governance systems), it is worth noting that perhaps due to this tribal origin, the cultural richness or the historical isolation of many of these mountainous areas; at present there are tremendous cultural and organisational differences between different regions in the country. This results in very diverse local societies that adapt in very particular ways to very different territorial contexts. This is the case of the High Atlas mountains and the Anti-Atlas mountains in the context of the Arganeraie and its *agdal*-type organisation.

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Bendella (2019) notes that ICCAs in Morocco (such as *agdals*) are not directly integrated into national environmental laws and policies, nor are they part of the PA network. The (still too partial and scattered) recognition given to these collectively managed territories comes mostly from other laws and policies. However, recent environmental awareness has been of crucial importance in the implementation of national policies to counter the threats currently hanging over the ICCAs in Morocco. Indeed, Morocco, by adopting the CBD and the Aichi 2020 framework, has committed itself to develop and implement national strategies and action plans to achieve the expected objectives within the planned timeframe (Bendella, 2019). The latest national report on biodiversity addresses the issue of ICCA as “an effective implementation measure to achieve national biodiversity conservation objectives”. This interest echoes the reports and studies carried out by experts, within the framework of the ICCA-GSI initiative, to highlight the current situation and potential of ICCA in Morocco (Bendella, 2019).

Moreover, the terms "indigenous or autochthonous peoples or communities" (as contained in the ICCA-English and APAC-French acronyms) have long been a hindrance, a constraint, on the opening and holding of dialogue. The shift to the more politically neutral terminology of "local community" has allowed the opening of the debate to foster the recognition of the APAC in Morocco. However, the term APAC remains a new phenomenon, exogenous to the Moroccan terminology. It is with the projects carried out in the field with the support of the ICCA-GSI initiative that the term APAC is beginning to capture the attention of communities, institutional actors and civil society (Bendella, 2019:9).

3.2.2. AGDALS

An *agdal* can be defined generally as an Amazigh social organisation or institution governed by customary laws (Auclair and Alifriqui, 2012). The term *agdal* refers to a collective natural resource (pasture, forest, water source, etc.) governed and controlled by a local assembly representing the user community³² who set the rules for accessing it, including opening and closing dates (Ilahiane, 1999). However, this definition may change according to the Amazigh groups, the regions and the resource. *Agdal* as an institution (in its various forms and at different levels) can be understood as a holistic concept that has widely demonstrated its ability to adapt historically and withstand a wide range of different contexts and issues throughout the history of the Maghreb (Dominguez, 2017). The polysemy of the term, which refers at the same time to territory and resources; knowledge and practices; institutions and rules; and representations, expresses the multidimensional nature of the *agdal* (Auclair and Alifriqui, 2012).

Agdal is a community-led governance approach that operates through decentralized tribal community management systems (Dominguez et al., 2012; Venema, 2002). The example of the Moroccan *agdal* is therefore an excellent illustration of what is at stake in relation to local knowledge and community management systems in the context of globalisation and the transformation of rural areas in southern countries (Auclair, 2012).

Not specifically designed as a tool for environmental preservation, four main arguments show the role of the *agdal* in risk management and security of resource use in space and time (Auclair et al., 2010). These are, long-term conservation of resources; the reservation of an "in situ" stock to equitably cope with risk; space-time management of a diversity of complementary resources; and conflict management, setting rights in relation to resources. The golden rule for preserving *agdal* status is the

³² Inter-tribal, tribal, fractions of tribes, village or group of villages mainly.

PART 1. CONCEPTUAL FRAMEWORK

conservation of undivided territory (Auclair, 2012; Hammi et al., 2010). Despite conflicts, legitimacy issues and other challenges (Venema, 2002), *agdals* have recently³³ demonstrated their capacity to hybridise with national administrations (i.e. Department of Water and Forests -HCEFLCD-) to set boundaries and resolve conflicts (Auclair et al., 2010; Auclair and Simenel, 2013).

Because of its high adaptability to its territory, almost every *agdal* is unique and therefore difficult to generalize. However, extensive literature has been published showing the **different types of *agdals*** that can be distinguished according to multiple factors such as the resource controlled or protected, the purpose, the methods of resource appropriation, the community or tribes involved, directors of institutions, territory, representations or beliefs (Auclair, 2012; Auclair et al., 2010; Genin and Simenel, 2011; Herzenni, 2008; Ilahiane, 1999) (see Table 5).

	Agdal type	Resource managed / Purpose	Territory	Dimensions / User Communities	Period
Community Agdal*	Highland Pastures**	Pastures	High Atlas	Variable, depending on the size of the user com.: Tribal, fractions of tribes, village or group of villages	Seasonal
	Forest	Forest (mainly wood and leaves)	Central High Atlas	Small: village or group of villages	Temporary
	Seasonal Agro-Forestry	Fruits. Of forest trees (arganier) and fruit trees (walnut and almond trees)	Argan forest High Atlas Anti-Atlas	Small: village or group of villages	Seasonal
	Irrigated Lands	Market gardening, young plants	Irrigated areas	Small: village or group of villages	Permanent, seasonal or temporary
Frontier Agdal*	"Saint's Agdal"	Management of inter-tribal conflict (through the appeal to saints' lineages)	Argan forest High Atlas Anti-Atlas	Inter-tribal	Permanent or seasonal
	"Foresters' Agdal"	Management of inter-tribal conflict (through the appeal to foresters' regulations)	Argan forest High Atlas Anti-Atlas	Inter-tribal	Permanent or seasonal

Table 5: Main types of *agdals*³⁴. Adapted from (Herzenni, 2008) and (Auclair and Simenel, 2013). * Source: (Auclair and Simenel, 2013); ** Source: Project Agdal, 2007 (Herzenni, 2008).

As an institution, the *agdal* fits into most of the actual figures of socio-environmental protection and recognition at all scales and levels: UNESCO World Heritage, ICCA_registry, UNESCO Biosphere Reserve, Protected Geographical Indication (PGI) and the Moroccan Law of Protected Areas 2008. *Agdals*, as a customary and traditional institution of natural resource governance, contribute directly to at least 5 of the 17 UN Sustainable Development Goals (SDG) (starting with Goal 15³⁵). Besides, the former Moroccan law of PA (2008) allows associations as well as national institutions to provide *agdals* with a status similar to that of "community protected areas" by the IUCN. Thus, *agdals* are considered the Moroccan ICCAs by the international community and among scholars.

³³ Progressively since the entry into force in 2002 of the text implementing the 1999 decree on forestry compensatory payments to rights-holders.

³⁴ From a conservation perspective, the *agdal* itself would essentially concern the first two categories; the two second concern more the protection of plants and crops than biodiversity itself in its various dimensions. (Herzenni, 2008).

³⁵ SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss. Source: <https://www.un.org/sustainabledevelopment/biodiversity/>

PART 1. CONCEPTUAL FRAMEWORK

At the time of the fieldwork (2018-2019), there is an international multi-partner initiative (2014-2019)³⁶ supporting a project of strategic support to APACs³⁷ in Morocco (i.e. ICCAs including *agdals*); launched in 2016 for a period of 30 months. This project aims to foster the establishment of a framework for appropriate support and recognition of APACs, comprising at the level of national legislation (Najwa Es-siari, 2018).

Moroccan *agdals* are considered by various authors a solution compatible with the idea of resilience, sustainable development in its three dimensions, with a bottom-up approach but open to mediation processes with all the actors involved (Michon et al., 2012). However, as in the case of biosphere reserves (theory-practice gap), it remains to be examined whether this is the case today for the local populations. However, the *agdals* system in all its forms, to date, is rarely considered in national and international protection strategies (Rössler, 2007).

3.2.3. AGDALS IN THE ARGANERAIE BIOSPHERE RESERVE

As highlighted in the sub-section of "*agdals*", almost every *agdals* is unique (due to its high adaptability to its territory). This remark gains relevance within the Arganeraie territory and ecosystem, given its singularity and its various **distinctive features**.

First, the tight ancestral relationship between Imazighen populations and the Arganeraie (as a multipurpose ecosystem in a semi-arid environment of scarce resources for livelihoods).

Second, the recognition of the above-mentioned fact by the national forest law since 1925. All Moroccan forests are State owned since the Protectorate (Boulhol, 1952), under the general forest law of 1917. However, since the laws of 1925 and 1938 regarding the Argan forest, the Arganeraie has its own rules (see Fig. 13), which have a considerable impact in customary institutions like the *agdals*.

³⁶ Global Support Initiative for Indigenous Peoples and Community-Based Conservation Areas (ICCA-GSI), which is being implemented in 26 countries, including Morocco. The ICCA-GSI is funded by the German Government and implemented by UNDP and the GEF Small Grants Programme, through so-called "catalytic" NGOs at the country level (in Morocco, ADEPE -Association for Sustainable Development, Ecology and Environmental Preservation-).

³⁷ Aires de Patrimoine Autochtone et Communautaire, the local French denomination for ICCAs.

PART 1. CONCEPTUAL FRAMEWORK

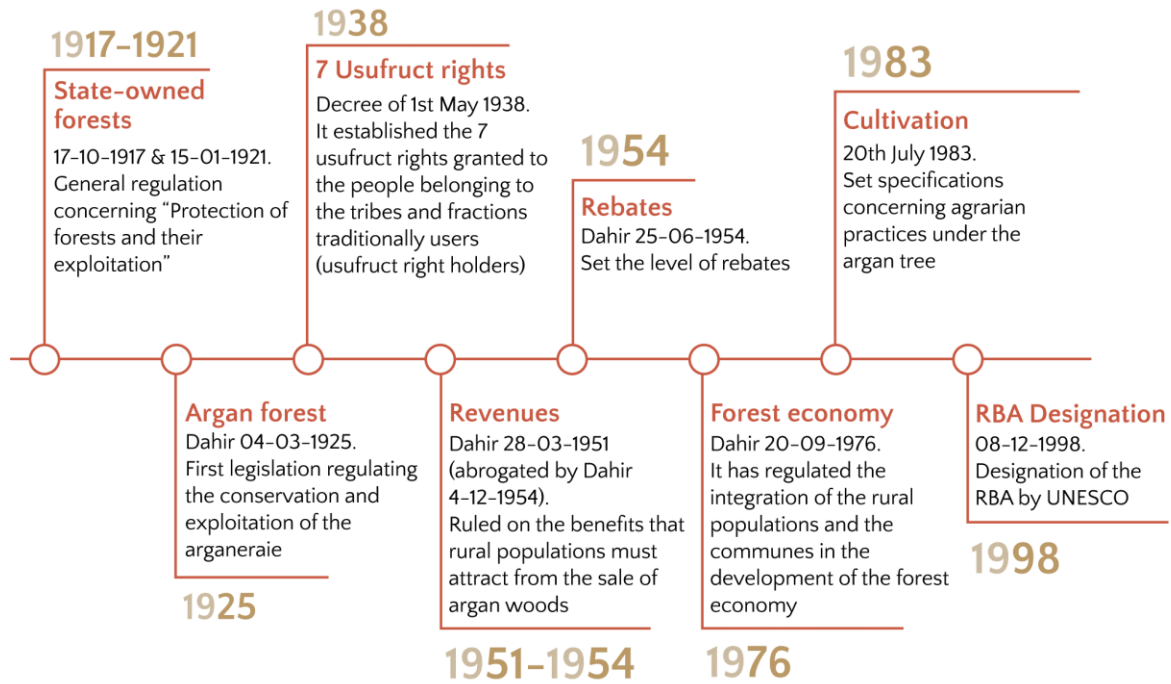


Figure 13: Timeline for the national legal texts on the argan forest and usufruct rights in the arganeraie. Source: own elaboration.

Third, the argan tree (in contrast to other forest species) is considered not only a forest tree but also a fruit tree. Because of its multiple ancestral usages, *agdals* in the arganeraie are set to protect the argan fruit more than anything else. This fact makes *agdals* in the Arganeraie quite different from other types of *agdals* like forest or pastoral ones (see Table 5 above).

Fourth, the recent socio-economic evolution of the argan sector (briefly explained in Annex I), intensive irrigated agriculture of the plain of Souss, emigration phenomenon of the Anti-Atlas region and the abandonment or sharp decline in grazing. These factors are characteristic of the Arganeraie region (except for the decline in grazing maybe) and have deeply impacted the way how populations perceive, interact and manage their forest. Which means that, at present, the argan fruit has become almost the only single natural resource (commodity) that encourages local populations to maintain the *agdal* practice (requirements for wood and pastoralist activity have strongly decreased). In contrast, neo-nomadism from outside the Arganeraie region or intensive irrigated agriculture are new and external threats resulting from liberal politics and economic policies for which the customary institutions and norms are not prepared for.

Finally, the state of the art regarding the issue of *agdals* in the Arganeraie, indicates a high interest on the subject among institutions, NGOs, rights-holder associations and domestic researchers. However, large-scale scientific coordination on the *agdal* issue remains insufficient since the "Agdal" project. Moreover, the "Agdal" project was focused on the High Atlas and Medium Atlas mountains pastoral and forest *agdals*, so not covering in detail the diversity and singularities of the *agdals* in the Arganeraie or other regions in the country (Auclair and Alifriqui, 2012). Therefore, there is a significant lack of information and published research on the *agdals* in the Arganeraie even though it is a burning issue in current regional debates (e.g. workshops, expert meetings and events related to the RBA, the ICCAs, etc. like the National Congress of the Argan Forest -CIA-).

PART 2. METHODOLOGY

1. METHODOLOGICAL FRAMEWORK

The research methodological framework has been informed by different disciplines, such as Ethnoecology, Human Geography and Biodiversity Conservation. I develop and adopt a **pluralistic integrative approach**³⁸ which encompasses a variety of qualitative research methods and social analytical tools (i.e., ethnographic and participatory methods; see Fig. 14), stemmed from grounded theory, case-study, ethnographic and participatory research (Cavaye, 1996; Lawrence and Tar, 2013). Together with a focus to a multi-scale approach to environmental governance (national/regional level addressed through the Arganeraie Biosphere Reserve and local level addressed through local communities and their *agdals*). This approach allows to incorporate values, worldviews, beliefs, and interests of an ‘extended peer community’ of decision-makers (policy-makers, practitioners, stakeholders, managers, administration officers, scientists) present in multi-layered governance structures, as legitimate key parts of the system. Thus, I engaged this ‘extended peer community’ of decision-makers in the research process to get a comprehensive picture to address the national and regional social–ecological environmental governance complexity of the Arganeraie (i.e. Argan forest ecosystem) (Beier et al., 2017).

Figure 14 illustrates the methodological participatory research design and experimental setup, depicting the four main stages of the fieldwork (data collection) at the top-down and bottom-up levels; according to the research specific objectives (S.O.) and to the actors addressed and the particular methodological objectives of each of the four stages. These four stages consist of a first round of prospective data collection and validation of the research design with key RBA actors; a second and third rounds of ethnographic and participatory fieldwork with local communities; and a fourth round of in-depth data collection stage at the RBA level. Lastly, these four stages converge towards a final stage of data analysis focused on the interface level (S.O. 3). Specific tools or methods used to meet each methodological objective are indicated in Fig. 14 but are explained in detail in the data collection and validation section and Fig. 20.

³⁸ Cavaye (1996) refers to pluralism as “the combined knowledge gained from using a variety of research strategies that enables a truly full and rich body of knowledge on a phenomenon to emerge”.

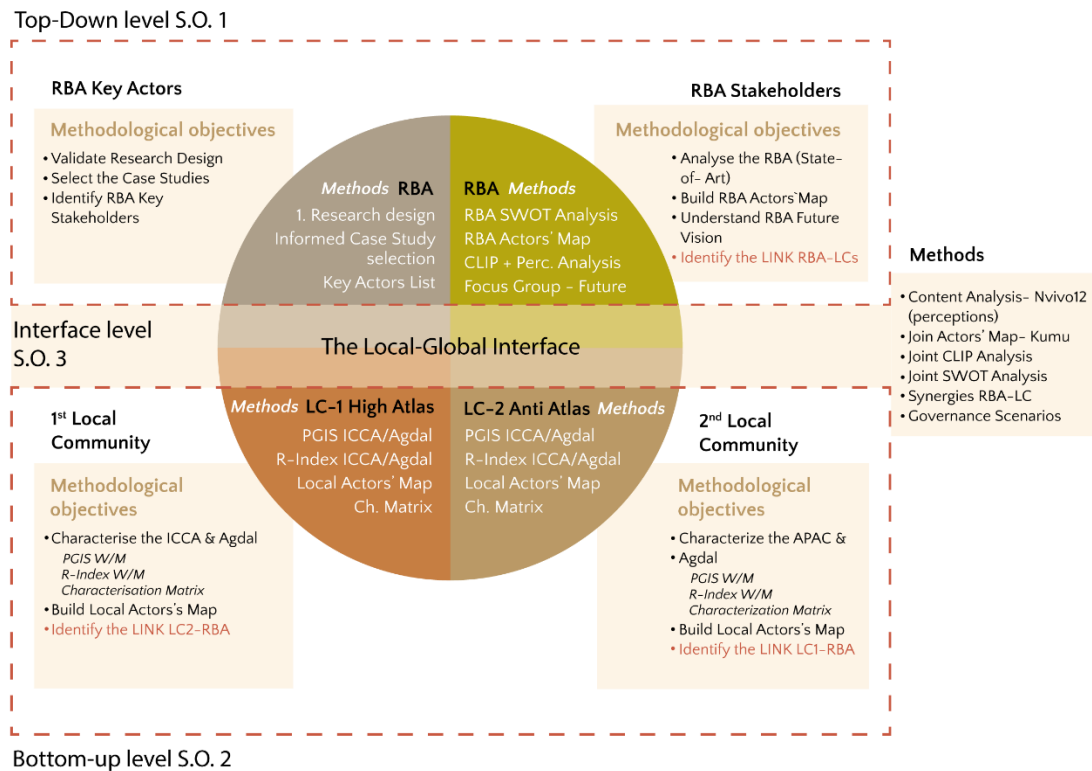


Figure 14: Methodological design of the study and experimental setup. Source: own elaboration.

Figure 15 shows the research framing choices translated into methodological objectives to enhance inclusivity through the different research stages.

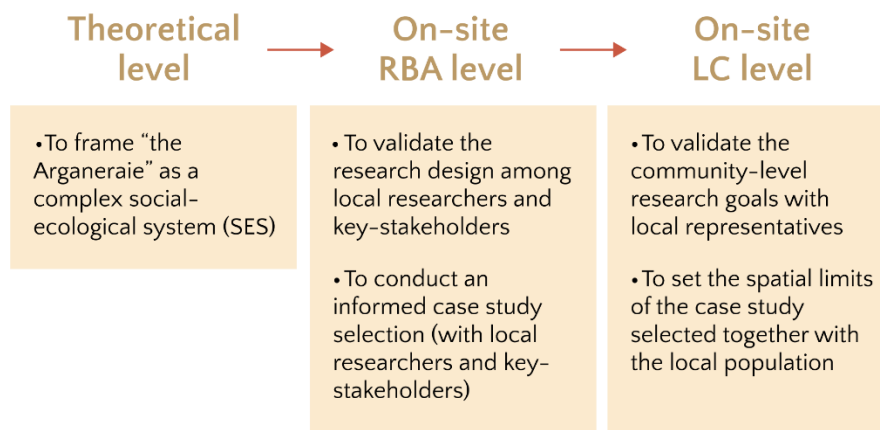


Figure 15: Research framing choices to enhance inclusivity through the different research stages. Source: own elaboration.

The research follows a constructionist epistemological position (Creswell, 2014; Moon and Blackman, 2014), assuming that meaning is created as people engage with and interpret the world. Therefore, different individuals construct meaning in different ways according to their cultural, historical and personal perspectives and experiences (Agar, 1996; Creswell, 2014). This approach aims to be inclusive of individuals or groups' values, in relation to specific qualities or features in the environment, including place-specific ones (Chan et al., 2016; Masterson et al., 2019). As I was interested in understanding participants' perceptions, we followed the definition of perceptions by (Bennett, 2016)

to be ‘the way an individual observes, understands, interprets, and evaluates a referent object, action, experience, individual, policy, or outcome’.

2. SYSTEMATIC AND PURPOSEFUL LITERATURE REVIEW

The first step of the literature review was to systematically search for the interface processes and factors associated simultaneously with top-down (e.g. PA or BR) and bottom-up (e.g. ICCA or CGS) approaches to environmental governance worldwide. The **aim** was to confirm and justify the research gap and relevance of the research topic and approach, highlighting the innovative nature of this study.

I identified peer-reviewed scholarly literature through a Scopus database search, employing the search strings detailed below on the titles, abstracts and keywords of articles, reviews, book chapters and books (Linnér and Wibeck, 2020). The systematic literature search was updated until the 23rd of March 2020. To conduct the search, I designed standardized queries using keywords referring to PAs (e.g. "biosphere reserve", "protected area", "natur* reserve", "natur* park", etc.) that co-occurred with keywords referring to ICCAs (e.g. "local communit*", "commun* governance", "community conservation", "agdal", etc.) and to interactions between both through either governance lens or NRM lens (e.g. "natural resource management", "governance", etc.). These queries led to a joint corpus of 292 references on interface processes and factors associated simultaneously with top-down and bottom-up approaches to environmental governance, part of a larger corpus of references on PAs (N=48,936), ICCAs (N=62,173) and governance (167,264) more generally (see Fig. 16) (Blanco et al., 2020). The search included terms in English and French and delimited the scope to terrestrial PAs (i.e. marine and urban PAs were excluded), resulting in a total of 225 hits.

```
( TITLE-ABS-KEY ( "local communit*" OR "communauté locale" OR "commun* governance" OR
  "gouvernance communaut*" OR "community conservation" OR "agdal" OR "community conserved area"
  OR "ICCA*" OR "aire de patrimoine autochtone" OR "APAC*" OR "rural commons" ) ) AND ( TITLE-ABS-KEY
  ( "natural resource management" OR governance OR gouvernance OR "gestion des ressources naturelles"
  AND NOT ( marine OR coastal OR urban ) ) ) AND ( TITLE-ABS-KEY ( "biosphere reserve" OR "reserve de
  biosphere" OR "protected area" OR "aire protege*" OR "natur* reserve" OR "natur* park" AND NOT
  (marine OR coastal OR "urban protected" OR "urban conservation" ) ) )
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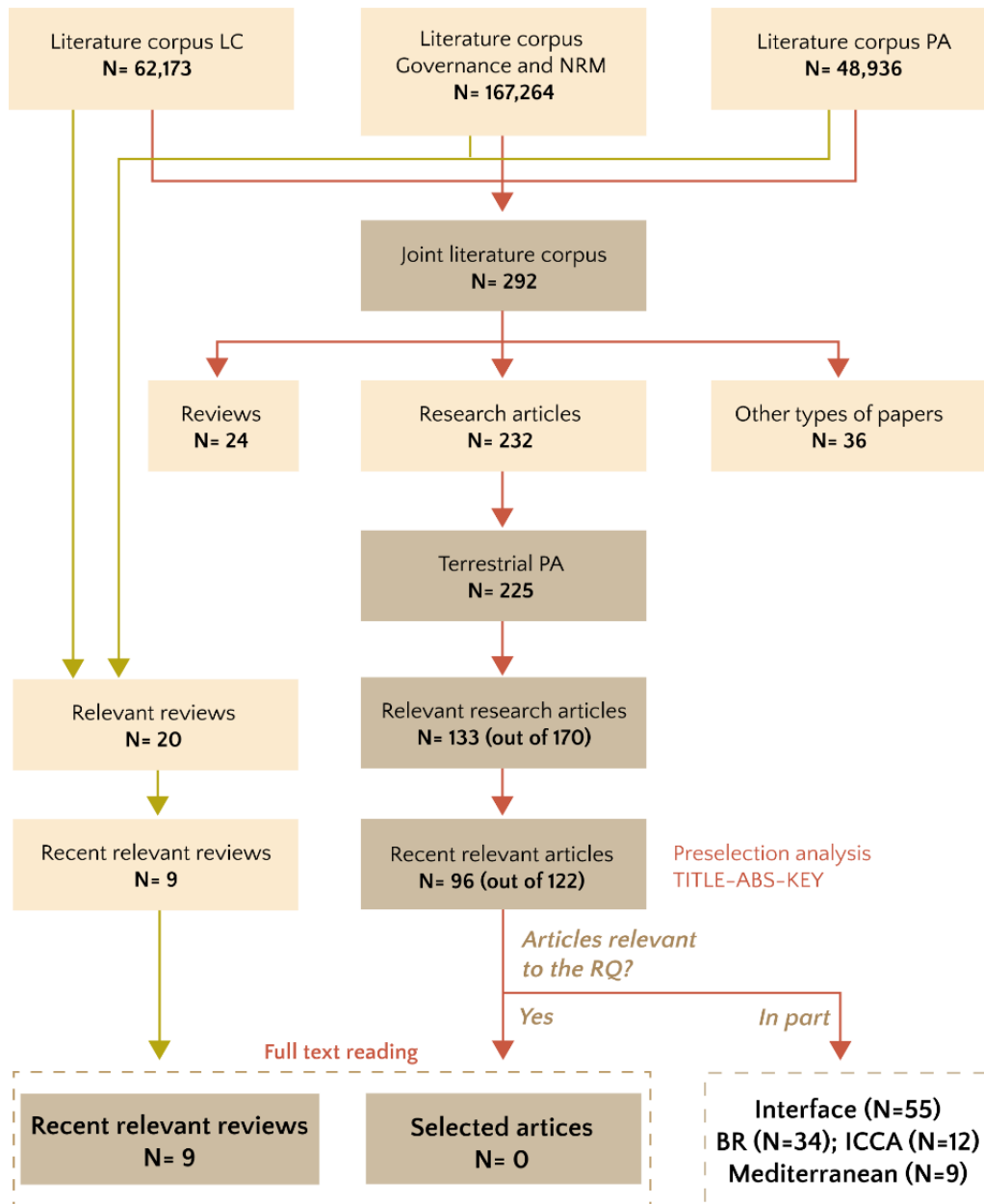



Figure 16: Flow diagram of article selection for the systematic search. Source: own elaboration inspired on Blanco et al. (2020).

The PhD dissertation of Matar (2015) entitled “Status of concept implementation and management effectiveness of Biosphere Reserves in the Arab region” and the related publications by her and her colleagues (Anthony and Matar, 2012; Matar and Anthony, 2018, 2017), are (together with the IUCN study from 2015³⁹) to our knowledge the only relevant publications found in either English, Spanish or French, addressing the North African BRs. Additionally, the systematic search provided no more than 71 peer reviewed studies worldwide related to interface processes between State-level and community-level approaches to governance, and less than 10 addressing the topic in the last decade. Different search strings looking specifically for (i) interface processes in the Maghreb/North Africa region and (ii) BR or ICCA in the Maghreb/North Africa region did not return any result.

³⁹ Análisis Comparado de las Reservas de la Biosfera del Mediterráneo: Hacia un fortalecimiento de la cooperación y las oportunidades de aprendizaje (IUCN, 2015).

In all, the systematic review on “interface processes and factors associated simultaneously with top-down and bottom-up approaches to environmental governance worldwide” presented here is consistent with the recent review published by Blanco et al. (2020), in which authors conclude that critical research gaps remain, not only concerning interface processes in general, but particularly referred to governance issues on that interface.

The gaps and limitations detected in the initial systematic literature search justify the **purposive literature review** choice. Given that the systematic search did not offer enough relevant scientific literature, I conducted a purposive and comprehensive literature review, including French and English papers (not only peer reviewed and not only indexed journals) and book chapters (most frequent in Franco-Moroccan scientific literature) regarding the same three main corpus of literature considered for the systematic search. That is, scientific literature on (1) local communities and community conservation⁴⁰, (2) governance and natural resource management and (3) protected areas, biosphere reserves and ecosystem services related to them. Additionally, publications regarding the argan forest and the argan oil sector, SES, knowledge systems and inclusive/participatory methodologies and methods were considered. Figure 17 illustrates the sub corpus of scientific literature considered in the purposive literature review.

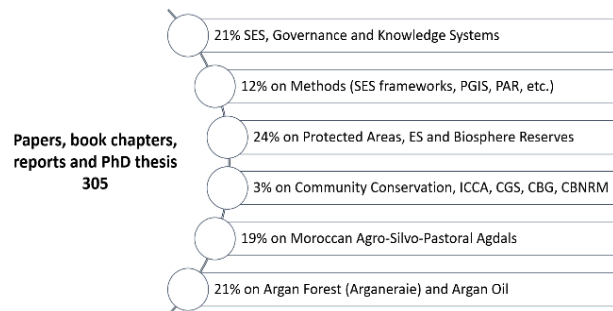


Figure 17: Sub corpus of scientific literature considered in the purposive literature review (English and French languages). Source: own elaboration.

Additional secondary data has been consulted and inductively integrated into the analysis (e.g. policy reports and development project proposals; RBA periodic reviews to the UNESCO MAB Committee and action plans; public presentations, conferences proceedings and workshops minutes regarding either the RBA and the *agdals* and ICCAs); besides conducting (1) archival research (e.g. legislative and statutory provisions, administrative texts and non-published master and doctoral thesis about the argan authored by local researchers/students) and (2) the above mentioned systematic review of peer-reviewed scholarly literature, in French and English.

3. CASE STUDY SELECTION

The **informed selection of two relevant local study cases** aim to showcase how different community-level contexts and dynamics may perform different interactions with the biosphere reserve and its related institutions. To achieve this aim, I first considered an initial set of criteria. It was determined after: (i) previous research and fieldwork (i.e. MSc thesis and three-months fieldwork in 2016); (ii) a

⁴⁰ ICCA: Indigenous peoples and Community Conserved Areas
 CGS: Communal Governance Systems
 CBG: Community-Based Governance
 CBNRM: Community-Based Natural Resource Management

PART 2. METHODOLOGY

comprehensive literature review (focused on Moroccan *agdals* and the Argan sector); and (iii) active participation and exchange with local and international researchers in conferences and events related to either my research topic or my study area (see Table 6).

Second, I carried out the validation process of the research design and the informed case study selection through prospective open interviews (as explained in the next section on data collection and validation). I discussed with most of the key informants and knowledgeable people regarding the RBA (e.g. DREFLCD-SO, ANDZOA, GIZ, UIZ, RARBA, U. Cadi Ayyad, PEC-SM) about the best feasible alternative that could meet the research aims. As a result of the former discussions, a series of inputs were considered (see Fig. 18) and the final criteria for the case study selection established (see Table 6 and Fig. 18). After the diverse sites initially considered (see Fig. 19), the final proposal for case-study sites included the following two local communities: Tiskji and Tamejloucht.

The research process to establish the final selection criteria and select the case study communities is defined in Fig. 18.

Criteria considered	Initial criteria	Final criteria
Suitability to properly respond to the specific research aims and needs	X	X
Conservation status of the selected <i>agdals</i> (active-exemplary <i>agdal</i> vs threatened-disrupted <i>agdal</i>)	X	X
RBA zoning scheme (core areas, buffer zones and transition zones)	X	
Biogeographical, historical and cultural differences among the main “homogeneous” areas within the RBA (Anti-Atlas vs High Atlas)	X	X
Degree of vitality and connectedness of the local community (ICCA- <i>agdal</i> vs ICCA-no <i>agdal</i>)	X	X
Searching for differences while avoiding the extremes		X
Feasibility of doing ethnographic research in the selected community		X

Table 6: Selection criteria of case study communities. Source: own elaboration.

Initial set of criteria

- Suitability to properly respond to the specific research aims and needs
- Conservation status of the selected agdals (active-exemplary agdal vs threatened-disrupted agdal) RBA zoning scheme (core areas, buffer zones and transition zones)
- Biogeographical, historical and cultural differences among the main “homogeneous” areas within the RBA (Anti-Atlas vs High Atlas)
- Degree of vitality and connectedness of the local community (ICCA-agdal vs ICCA-no agdal)

Expert Input from validation

- In the RBA, we can distinguish “broadly speaking” between 4 and 6 large areas with very different realities. Ideally, at least one study area should be chosen in each area if we aim for comparative results.
 - High Coastal Atlas (including the extreme north of the RBA, Marrakech-Essaouira region): low human density, more humid, argan sector and tourism
 - Western High Atlas (towards the interior, Taroudant region): without Atlantic influence
 - Souss Plain (e.g. Admine): highly impacted by modern greenhouse intensive agriculture, mass tourism and urbanisation around the large city of Agadir
 - Anti Atlas (including the extreme south of the RBA, Guelmim region): less humid, high emigration, nomadic camels’ conflict
- The qualitative research ethnographic approach and methodology selected, time and resource constraints **prevent us from choosing 6 or more study areas.** So first, I refused the Souss plain (because of the current poor common management practice “agdal” and the high environmental degradation) and second, I refused the northern and southern extremes of the RBA (Essaouira and northern Guelmim).
- The research topic, the researcher profile and doctoral program and the field work methodology, **prevent me from working on one single local community, because I needed to deeper understand different relevant realities within the RBA regarding the agdal-type organisation.**
- Regarding the RBA zoning scheme, which includes 18 core areas included in 13 buffer zones; it seems it may seem appropriate to choose study areas within or near buffer zones as (conceptually) emblematic areas that encourage activities that are compatible with environmentally sustainable practices. But when it comes to the field, **the RBA zoning is not well defined, and thus not a valid criterion.**
- **On-site realities, logistical or site accessibility issues** (e.g. inaccessible locations, cultural barriers regarding foreigners, interesting collective initiatives, availability of local dialect translators, security issues, etc.) were also taken into account following the advice of local senior researchers and managers.

Final criteria considered

- Suitability to properly respond to the specific research aims and needs
- Conservation status of the selected agdals (active-exemplary agdal vs threatened-disrupted agdal)
- Biogeographical, historical and cultural differences among the main “homogeneous” areas within the RBA (Anti-Atlas vs High Atlas)
- Degree of vitality and connectedness of the local community (ICCA-agdal vs ICCA-no agdal)
- Searching for differences while avoiding the extremes
- Feasibility of doing ethnographic research in the selected community

2 Case Study selected

- **Local Community 1:** Douar (village) **Tisskji**. Imouzzer. Agadir Ida Outanane. High Coastal Atlas (Atlantic influence)
- **Local Community 2:** Douar (village) **Tamejloucht**. Chtouka Ait Baha. NW Anti-Atlas Mountains (Foothills area)

Figure 18: Research process to establish the selection criteria and select the two case study communities. Source: own elaboration.

- Legend**
- RBA Study Areas Proposal:**
- Tiskji 1° Haut Atlas Occidental
 - Tamejloucht 2° Anti-Atlas
 - Ksabi (2°bis) Anti-Atlas
- Other sites considered:**
- Imi n Tlit
 - Inzerqui
 - Ida Ougnif



Figure 19: RBA study area selection. Source: google earth 2018.

4. DATA COLLECTION AND VALIDATION

Experimental setup and data collection strategy were designed, addressed and conducted at two different levels, RBA and local community level, to understand the two approaches to governance on the field (top-down vs bottom-up / global-national vs local-traditional), the realities and mindsets leading to them and the links between both approaches. I found that it was an appropriate frame to properly respond to the specific objectives 1 and 2 in a first stage and subsequently to the specific objective 3 in a second stage of data analysis. Therefore, a suite of qualitative methods was adopted in each case as shown in Fig. 20.

I conducted all the analyses and data collection, with the support of local non-professional translators in the two local communities.

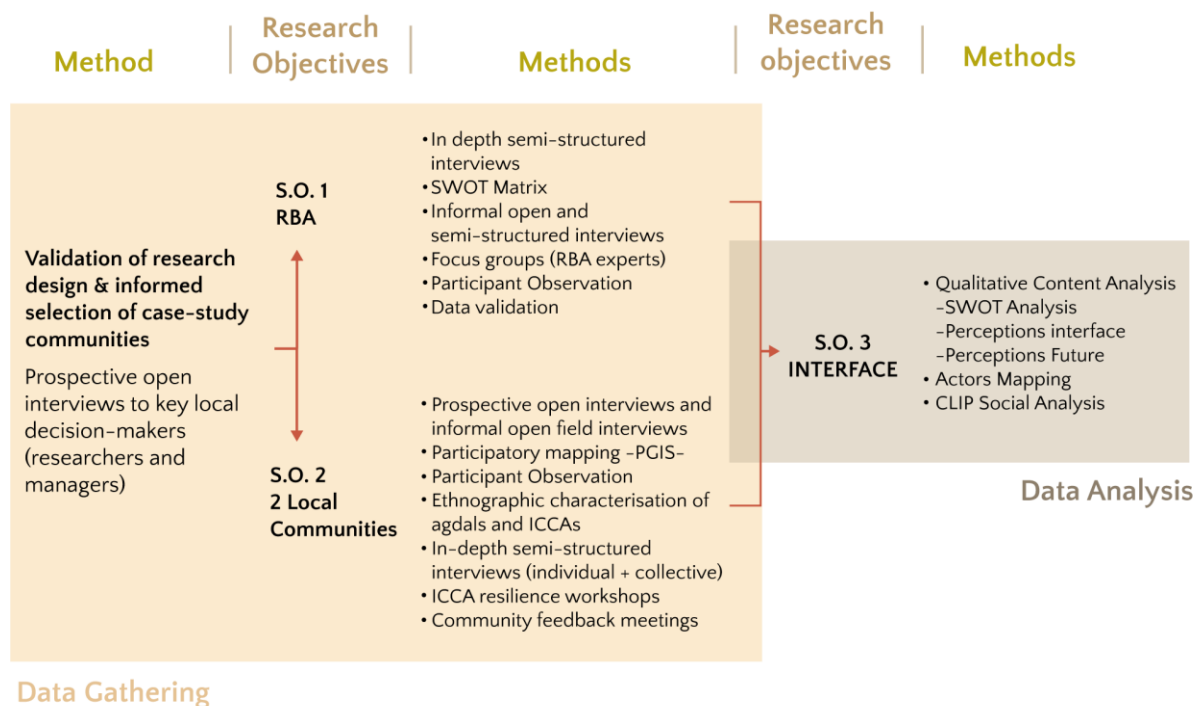


Figure 20: Methodological research design. Specific Objectives (S.O.) versus Methods' Logic. Source: own elaboration.

I use different research methods and data collection strategies in order to answer my **first and (partially) third specific objectives**, which are: (SO1) to analyse the institutional approach to environmental governance of the biosphere reserve (top-down approach); and (SO3) to examine the interface between the biosphere reserve and the two local communities through the identification of the constraints and synergies of their own approaches to governance.

Data collection at the institutional and RBA level involved the following methods:

- Prospective open interviews with key informants (N=20) to identify past and present main actors and stakeholders in the RBA which allow to elaborate an institutional actors' map of the RBA.
- In-depth semi-structured interviews and SWOT analysis (N=42) to:
 - o (1) conduct a comprehensive institutional analysis of how the RBA is being managed,

- (2) conduct a perceptions-based analysis of how this management is being perceived by the main RBA stakeholders (including understanding their worldviews, using their language, etc.)
- (3) explore which are the perceptions of institutional actors about the link with the local communities (real and desired)
- Participant observation and ethnographic approach to gather complementary data, assess, and validate the information collected through other methods.
- Informal open and semi-structured interviews to gather additional data on emerging relevant subjects and validation of results)
- Focus group (N=01) to:
 - (1) validate the preliminary results from the individual interviews.
 - (2) discuss collectively their perceptions of governance within the RBA through two feasible governance scenarios, realistic and ideal. And the link with local communities.

I engaged on a regular basis in on-site research at the institutional and RBA level, not only conducting interviews with most of the relevant informants related to de RBA (Annex II), but also having a permanent contact with the key RBA stakeholders, integrating myself in the context and participating in most of the formal and informal discussions and workshops related to the RBA and the ICCAs which took place at regional and national level during the one-year fieldwork period (ethnographic approach). Relevant informants interviewed include state administrations and public agencies (regional and national level), national and regional institutions and NGOs, public universities and research centres and members of other institutions and organisations present in the RBA, including development agencies such as GIZ and PNUD, academics involved in forest and argan research, rural development, commons/*agdals* or the RBA and representants of the national MAB Committee, UICN and the argan sector among others. The key RBA stakeholders considered include: DREFLCD-SO, ANDZOA, GIZ, PNUD, UIZ and RARBA among others.

In addition, I also use a set of research methods and data collection strategies in order to answer my **second and (partially) third specific objectives**, which are: (SO2) to analyse bottom-up processes of customary and local governance in two rural communities; and (SO3) to examine the interface between the biosphere reserve and the two local communities through the identification of the constraints and synergies of their own approaches to governance.

Data collection within local communities involved the following methods:

- Prospective open interviews with local leaders (N=06) to present, discuss and validate the research methods (at the local level) beforehand in a participatory way.
- Participatory mapping (PGIS) workshops (N=04) to:
 - (1) define the study area at the local level in a participatory way that allows the integration of local knowledge into science (e.g. douar, tribe, commune or municipality, province, etc.)
 - (2) analyse how each case study local community perceives and defines the concept and limits of its “community” (i.e. sense of place, sense of community)
- Ethnographic characterisation of *agdals* and ICCAs (N=02) to analyse how two different communities in the RBA perceive and manage, in the current context of Global Change:
 - (1) their *agdal*-type organisation.
 - (2) their community (i.e. their daily live)
- In-depth semi-structured interviews with locals (N=43) to:
 - (1) dig deeper into local communities’ governance and their *agdal*-type organisation.

- (2) conduct a perceptions-based analysis of how local communities perceive their territory and community at present and in a near future (including understanding their worldviews, using their language and inquiring about their visions)
- (3) better understand how these communities interact with the RBA and the national/regional legislative and policy frameworks (regarding the natural resource management).
- Informal open field interviews to gather additional data on emerging relevant subjects and validation of results)
- Field trips, participant observation and ethnographic approach to gather complementary data (regarding the PGIS and the ethnographic characterisation of *agdals* and ICCAs), assess and validate the information collected through other methods.
- ICCA resilience and security workshops (N=03) to collectively discuss and calculate (through the Resilience Index tool), in a participatory way, the resilience of both case study communities and the potential of traditional management practices for biocultural and community conservation nowadays.
- Community feedback meetings (N=04) to collectively discuss and validate research results and fieldwork.

I also engaged on a regular basis in participant observation at the local community level, by living a period in each of the two rural local communities within the argan area (RBA). This allowed a permanent interaction with community leaders, rights-holders, small peasants, herders, female members of argan-oil cooperatives and their families, household-level argan-oil producers, local NGOs, religious representatives, teachers, local administrators and civil servants in local state forest management, among others.

The first local community (Tisskji) had some previous experience with hosting domestic researchers, while the second one (Tamejloucht) had never had any contact with any researcher. However, local leaders and host families eased my adaptation to and familiarization with the local context, acting somehow as research assistants, which increased responsiveness to household interviews and focus groups. Nevertheless, training to translators took some extra time due to their low previous experience with the research methods and rationale adopted.

In total 42 professionals have been formally interviewed at the RBA institutional level, together with other 43 informants at the local community level. Additional secondary data have been consulted and inductively integrated into the analysis (e.g. policy reports and development project proposals; RBA periodic reviews to the UNESCO MAB Committee and action plans; public presentations, conferences proceedings and workshops minutes regarding either the RBA and the *agdals* and ICCAs); besides conducting (1) *archival research* (e.g. legislative and statutory provisions, administrative texts and non-published master and doctoral thesis about the argan authored by local researchers/students) and (2) *a review of scientific published literature*, in French and English. Finally, preliminary findings were presented during the 5th International Arganier Congress (5th CIA) at the national level to communicate the results and to receive feedback.

4.1. BIOSPHERE RESERVE LEVEL

Research in the Arganeraie Biosphere Reserve (RBA) was undertaken in two main phases between spring 2018 and spring 2019. A first exploratory phase devoted to the presentation of the research project and validation of the research design and a second stage in which the core of the data, in-

depth interviews, focus group, etc., were collected. Through the set of methods described below, I gathered data on how RBA managers, administration officers linked to the RBA, researchers and key stakeholders perceive the RBA today.

During the exploratory phase, I first contacted with local researchers and previous local contacts related to the RBA in order to: formally present myself and my research, have their feedback, validate my research design and criteria for the case study selection and have guidance and advice on the possible study sites within the RBA fitting the final criteria. During the second stage, all the in-depth interviews with RBA related informants were conducted and the rest of research methods deployed. See Table 7 for the profile and number of participants interviewed.

Afterwards, I kept contact with key informants (through email), aiming to be updated about the relevant events and news coming from the field and aware of the high dynamism that the RBA is experiencing today regarding its governance, just after the periodic review of 2018.

RBA-LEVEL	1st Exploratory phase	2nd Main phase	
	Prospective interviews	In-depth interviews	Focus Group
Total number of interviewees / participants	20	42	11
Men	18	32	9
Women	2	10	2
Target Groups (number of interviewees)			
Administrations	1	11	3
Institutions	3	11	2
NGOs	4	8	4
Researchers	10	7	1
Other experts	2	5	1
(Argan sector)	(0)	(4)	(2)

Table 7: Profile of participants by research method at the RBA level. Source: own elaboration.

4.1.1. PROSPECTIVE OPEN INTERVIEWS

Fieldwork comprised an initial period of presentation of the research project and validation of the research design with key informants (local researchers and RBA decision-makers); including the main locations of key actors and institutions related to the RBA: Rabat, Agadir, Marrakech, Meknes and Tiznit. This also aimed at building trust with participants and meeting the country's ethical requirements for social research. 20 prospective open interviews and 10 research-design validation meetings⁴¹ with key informants were held at national, regional and sub-regional levels, covering a purposive sample of governance structures linked to the RBA and relevant research institutions.

Prospective open interviews provided basic updated information about the RBA and permitted the identification of the main past and present actors and stakeholders in the RBA. This data allowed to create the actors' database and elaborate an institutional actors' map of the RBA. Research-design validation meetings allowed to validate the research design with the most knowledgeable domestic researchers and conduct an informed case study communities' selection (as detailed in the previous section).

All the interviews were conducted face-to-face in French and followed a flexible conversational approach (Moon et al., 2019). They lasted between 30 and 90 min and took place at the respondent's

⁴¹ Conducted among the respondents of the 20 prospective open interviews.

workplace or in a quiet public location. Interviews were audio-recorded and transcribed for analysis when the respondent agreed to; otherwise, written notes were taken for further analysis.



Figure 21: Initial prospective open interviews at the RBA level conducted with local researchers and key practitioners (Romera, 2018).

4.1.2. IN-DEPTH SEMI-STRUCTURED INTERVIEWS

Through the 42 in-depth semi-structured interviews conducted with a purposively selected 'extended peer community' of decision-makers within the RBA, I enquired about the state of the art of the RBA, its governance model and its relation to the local communities within the territory of the RBA. These semi-structured interviews were conducted mainly in the Souss Massa region (where most of the key informants related to the RBA are located), but also in Rabat, Marrakech and Essaouira (where relevant national and regional administrations, institutions, research centres and universities are located). Interviewees included key actors like representatives involved in the RBA governance body; sectorial administrations and institutions related to the RBA; international, national and regional NGOs; representatives of the civil society related to the argan forest; researchers and consultants involved in the evolution of the RBA (see Table 8 and Annex II).

Interviews at the RBA-level were conducted making sure to interview a representative and comprehensive sample of people involved (directly or indirectly) in the RBA management and evolution (i.e. RBA managing body, related institutions and public administrations, researchers, related NGOs and related practitioners or consultants among others), including key individuals identified in the prospective open interviews and exploratory phase as the most knowledgeable. Special attention was paid to interview people closely involved in the three main historical periods of the RBA from the 1990s to present day. I stopped interviewing when additional interviews offered little new information and/or the remaining potential informants did not agree to be interviewed. All interviews were conducted face-to-face (except for one made by telephone exceptionally) in French and followed a flexible conversational approach (Fernández-Giménez et al., 2012; Moon et al., 2019). They lasted between 60 and 180 min and took place at the respondent's workplace or in a quiet and undisturbed public location. All interviews were audio-recorded (except for a few cases in which the respondent did not agree) and transcribed for analysis (Fernández-Giménez et al., 2012).

While the interviews were flexible to follow respondents' interests, the main topics discussed covered their understanding of a BR, the management model of the RBA and its territory and their perceptions about the governance of the RBA. Special attention was given to the perceived and ideal link between the RBA and the local communities within its territory. Information was also gathered concerning respondent's profile and link to the RBA, perceptions of different future scenarios for the RBA and the role of research and researchers (Table 8).

Topic	Example questions	Research aim
Participants' profile and relationship with the RBA	Position and profile (engineer, geographer, ...)? How many years have you lived in the RBA? What are your activities related to the RBA? How many years of experience? In which field(s)?	Asses the type and scope of the information provided and the category of actor/stakeholder RBA actors' map
Participants' own definition of BR	What do you know about Biosphere Reserves in general? What is their main interest? What is the Arganeraie Biosphere Reserve for you?	Perspectives from different actors. Assessment of participant knowledge about BR
State of the art of the RBA. Territory and Institutional management	Could you briefly describe the current state of the RBA (e.g. actors, realities, challenges, opportunities, responsibilities, dynamics)? As far as you know, what are the governing bodies of the RBA? Is there an RBA's management committee? Is it active? Management criteria in the different zones (transition, buffer, central)?	RBA management and governance. RBA governance scenario
Perceptions of governance in the RBA	Is the zoning respected? In which zone (A, B or C) is it respected? In your opinion, what can be done to improve management if necessary? Who are the actors most concerned by the RBA and the beneficiaries? Is there an actor(s) who is(are) absent from the RBA and whose presence is important?	Realities and perspectives from different actors
Perceived current and ideal link btw the RBA and its LC	In your opinion, are there relationships between the RBA and local communities, APAC or <i>agdals</i> ? Does this relationship exist? Would it be interesting to establish them? How can this be done? Does the RBA have impacts (as measurable influences) on local communities? Positive or Negative? Describe briefly	Realities and perspectives from different actors
Visions of future (realistic and desired feasible scenarios)	According to your opinion and diagnosis, what will be the evolution of RBA in the future? What image should the RBA ideally portray in the future? How do we achieve this / How do we succeed? What are the keys, responsibilities, etc.?	Feasible Scenarios in mind (realistic and positive)

Table 8: Main topics discussed in the in-depth interviews with the 'extended peer community' of decision-makers linked to the Arganeraie Biosphere Reserve (RBA), Morocco.

4.1.3.SWOT MATRIX

In-depth characterization of the RBA was carried out through a detailed strengths-weaknesses-opportunities-threats (SWOT) matrix concerning specifically the RBA. Respondents were asked to inform about strengths, weaknesses, opportunities, and threats related to a series of preestablished priority topics for the RBA. The nine priority topics considered were: territory and environment, biodiversity and conservation, socio-economic issues, cultural heritage, management, research, funding, tourism, and communication and participation.

The key informants addressed were the ones having demonstrated during the previous in-depth semi-structured interviews to properly know the RBA and/or having a direct link to it. Data was collected individually, either in person or by email and always once the respondent already knew the research aims properly.

4.1.4. PARTICIPANT OBSERVATION

During the one-year fieldwork in Morocco, I took part as participant observer in several events related to either the RBA, the argan sector and/or the *agdals*/ICCAs in order to observe interactions among multiparty and community participants in these projects and initiatives. Participant observation focused on these events because of their proximity and relevance to the research topic and study area, and because of their adequate timing to the fieldwork and research process (i.e. they coincided with the fieldwork period and my participation was feasible and compatible with the research).

Thus, I took part in the Round Table about *agdals* in the RBA during the 4th International Arganier Congress (4th CIA), on the occasion of presenting my research project prior to the fieldwork stage. Then, I assisted at the “Thematic Workshop AGDAL” in Agadir (i.e. *agdals* within the RBA) in 2018 as a continuation of the prior debate of 2017 during the 4th CIA. I also took part in a regional workshop hold in Agadir in 2018 organised by the civil society association “RARBA”⁴² with the support of the Ministry on Human Rights, on the topic of the RBA, civil society and human rights from a policy perspective. Towards the end of the research stay, I took part in the second National Workshop on ICCAs “Supporting conservation by local communities” in Rabat in May 2019, where representatives of the RBA and of one of the two local communities were present, together with representatives from PNUD, civil society associations, rights-holders representatives from other communities and regions in the national level (mainly from the High Atlas), NGOs, researchers and academics. During the national workshop, organised by the PNUD⁴³, I briefly presented my research and conducted an additional written interview/questionnaire (2 open questions) to gather additional data on the different approaches to governance among most of the relevant stakeholders in the country related to the ICCA initiative (including the territory of the RBA). Finally, the other various talks and informal meetings in which I had the opportunity to participate, during my stay in Morocco and in the Arganeraie region, allowed to complement field data, establish connections among different actors, situations, topics and discourses, cross-check information obtained through interviews, have access to certain respondents, build my own network of contacts regionally and build trust among stakeholders and respondents.

4.1.5. INFORMAL OPEN AND SEMI-STRUCTURED INTERVIEWS AND ADDITIONAL DATA COLLECTION

The ethnographic approach adopted and, particularly, participant observation allowed to gather valuable additional data from RBA and ICCA related stakeholders; and to assess and validate the information collected through other data collection methods. This complementary data gathering was often instrumentalised through informal open and semi-structured interviews focused mostly on emerging relevant subjects and validation of results; and as mentioned above, through field notes and participant observation. Example of emerging subjects not included in the interview guide but potentially relevant to the analysis of results and discussion were the “new transhumant herds” conflict, the argan sector and its implications over the gender discourse and reality within the RBA, the rights-holders associations and their representativeness, interlinks between the centralised (state-

⁴² RARBA is the «Network of Associations of the Arganeraie Biosphere Reserve». In French, Réseau des Associations de la Réserve de Biosphère de l'Arganeraie.

⁴³ Project “Strategic support to community heritage areas and territories (APAC) in Morocco”. For the conservation of “bio-cultural diversity”.

led, sectoral) and regionalised (politically led) institutions and implications to the effective management of the RBA, etc.

4.1.6. EXPERT FOCUS GROUP

After a preliminary analysis of results, a focus group was organised towards the end of the fieldwork period, after the in-depth semi-structured interviews campaign with RBA informants, in order to first, validate the preliminary results from the individual in-depth interviews. That is, inform key RBA stakeholders about the main convergences and divergences found among the individual interviews, discuss them collectively, validate and complete the individual RBA SWOT matrix and address potential doubts and information gaps. Second, discuss collectively and document participant's vision of the territorial model of governance within the RBA through two feasible governance scenarios, realistic and ideal. And ideally agree how to set up a common model of governance for the RBA territory that brings together institutions and local communities in a near future. Namely, how to strengthen the RBA-local interface and to describe the role of researchers, academics and scientific research in this respect.

The focus group took place at the headquarters of the DREFLCD-SO in Agadir, with a duration of 3h and with the participation of 11 people, including the key decision-makers directly linked to the RBA nowadays (see Annex II).

I presented first, my preliminary findings and interpretations regarding the different approaches to governance in the RBA, to be discussed collectively; second, the SWOT matrices of the RBA and the two communities studied including gaps in the information (particularly concerning the RBA SWOT matrices that had had a low individual answer rate); and third, a question about the interface to be discussed collectively⁴⁴. Participants provided information to fill the gaps, asked for clarifications and doubts, and either validated or disputed from their perspectives the initial interpretations of results presented. Overall, the "Experts Focus Group" did not reach a common agreed answer to the question asked. However, the RBA SWOT matrix was successfully complemented, contributions were integrated into the results after the collective discussion and, the process contributed to increase results' validity and credibility, which are key aspects of quality in qualitative research (Cortés-capano et al., 2020; Moon et al., 2016).

⁴⁴ "How to implement the RBA, as a territorial project and concept, with an active federation (i.e. commitment and agreement) of actors...? ...considering the links between regional policy and the local community profile. Would it be feasible to implement a strategy of co-management (state-population)?"



Figure 22: Focus group with RBA key stakeholders and managers. Data: 10th April 2019 (Afker, 2019).

4.1.7. DATA VALIDATION

The ten research-design validation meetings in step one allowed considering an inclusive research design and to assess its relevance at a BR level, while building trust with participants. This step (together with the prior participation in some related events such as the 4th CIA above mentioned) guaranteed access to the 42 interviewees and high-quality information from interviews due to trust-building and inclusiveness.

Afterwards, additionally to the initial validation of the research design and the validation of the preliminary results during the regional “experts focus group” in Agadir, I conducted a third validation exercise at the national level. Seven months after the fieldwork, I presented the main findings in a workshop about governance during the Vth International Arganier Congress (5th CIA), held in Agadir in December 2019 (the most relevant international event related to the Arganeraie). The 5th CIA included practitioners and researchers from 11 countries, and representatives from the main national and international institutions regarding the argan sector and argan forest. There, I discussed the preliminary main findings with different relevant stakeholders, in the panel concerning governance (i.e. Axis 4. Social and heritage changes and development in the RBA). None of the major findings was challenged, although participants asked for clarifications and contributed with suggestions that were integrated in the analysis in the form of field notes.

Overall, data validation at any stage and level in this research means to share, discuss and crosscheck information (e.g. research design, preliminary results) individually or collectively with knowledgeable people (e.g. researchers, key informants). As mentioned above, validity and credibility are essential for assessing quality in qualitative research. Overall, the different validation activities considered in the research design contributed to improve results’ validity in terms of appropriateness of the interpretation of the results based on the evidence, research design and social context. Validation exercises also contributed to enhance credibility, understood as the degree to which the research represents the actual meanings of the research participants (Cortés-capano et al., 2020; Moon et al., 2016).

Finally, as main researcher I kept the contact with key informants (through email and telephone), aiming to be updated about the relevant events and news coming from the field and aware of the high dynamism that the RBA is experiencing today regarding its governance, just after the periodic review

of 2018 (a good example of these updates were the access to the report of a “National Symposium on Biosphere Reserves in Morocco held in Agadir in February 2021, organised by the RARBA).

4.2. LOCAL COMMUNITY LEVEL

Through this set of methods, I gathered data on people’s traditional local knowledge (TLK) related to their *agdals* and territory, and I looked at how they understand and manage their link with the RBA and the state institutions.

Fieldwork in Tisskji and Tamejloucht took place at different times between spring 2018 and spring 2019⁴⁵. In each study site, I first contacted with local leaders (ADLs) and local governments (*Caidats*) in order to formally present myself and my research, have their feedback, arrange the logistics and the administrative and ethical issues related to the ethnographic fieldwork.

4.2.1. PROSPECTIVE OPEN INTERVIEWS AND INFORMAL OPEN FIELD INTERVIEWS

In each study site, initial meetings and prospective open interviews were conducted with ADL members and local leaders (5 in Tisskji and 2 in Tamejloucht) to frame and validate each specific research method and adapt it to the community while gaining their confidence and promoting a participatory approach. They consisted of gathering initial data concerning the community relevant to the research design, testing the semi-structured interview guide, and discussing with local leaders the appropriateness of each particular method and the logistics for conducting the ethnographic research in the community. Duration in this case cannot be stated as the research approach and priority at this point was to mimic the local culture, being as fluid and flexible as possible and adapt to their availability. Meaning that some interviews were short conversations of 15-30 min while others took full or half days sitting on the terrace of the local bar having intermittent discussions over a tea, a meal or in their free time. Afterwards, the researcher and translator/s established in the study sites (for an initial period of one month) and deployed the rest of research methods described below.



Figure 23: Initial meeting and prospective open interviews in Tisskji conducted with ADL members and local leaders (Romera, 2018).

⁴⁵ Approximately one month of ethnographic research stay living in each community (September-October 2018 for Tisskji and January-February 2019 for Tamejloucht), plus various intermittent punctual contacts during all the one-year fieldwork.

In line with the ethnographic approach adopted, complementary data was often gathered through informal open field interviews and participant observation. Informal open field interviews were conducted mainly during the different field trips, when an informant was willing to share some relevant information but did not agree to respond to the in-depth semi-structured interview guide and/or to collect additional data on emerging relevant subjects. Additional interviews were also conducted to seek potentially contradictory evidence and confirm or reject initial findings. All these open-ended interviews adopted an informal, fluid and intermittent conversational approach characteristic of the local culture. Examples of emerging subjects not included in the interview guide but potentially relevant to the further analysis of results and discussion were those related to gender, future working perspectives of young people in the douar or village, life experiences of locals with the public administrations or issues regarding sense of place and sense of common good.

4.2.2. PARTICIPATORY MAPPING

Participatory mapping⁴⁶ or participatory GIS (PGIS) relies on the integration of technical or conventional knowledge with socially and gender-differentiated local knowledge (De Souza and Clarke, 2018); also referred to as indigenous technical knowledge (ITK) (McCall, 2003). The relevance of the participatory mapping method for the research topic is that it allows high levels of stakeholder participation (and thus, empowerment) in the processes of spatial learning, decision-making, and action and can bring together diverse groups of stakeholders, from community-based institutions to governmental policy-makers, to exchange ideas, perspectives, and information on a more even playing field (De Souza and Clarke, 2018; McCall, 2003). This process, thus, strengthens and builds new relationships to support practical and inclusive decision-making and strengthens the capabilities of those actors involved (McCall, 2006, 2003).

Initial participatory mapping (PGIS) collective workshops were held in the local communities to properly establish with them the study area and the geographical limits of their *agdal*. The PGIS workshops were based on the use of the most recent digital georeferenced aerial images (2018, ANDZOA -MAPMDREF-, Morocco), which were mosaiced, printed and laminated at a scale of 1:25,000 for Tiskji and 1:20,000 – 1:30,000 for Tamejloucht (size A0) (Fagerholm et al., 2012). In each community the PGIS methodology started with an introductory meeting with community leaders (e.g. ADL members, male family leaders, local officials, teachers) in which I showed and explained in detail the maps, the research aims and the methodology, asking for feedback, advice and questions.

These initial meetings were followed by the actual collective PGIS workshops with community members (men and women separately). Each workshop started with the presentation of myself as researcher and my local translator/s, an introduction to the topic and objectives, and the necessary orientation on the aerial image map. Followed by a quick round of comments, questions and collective discussion on the concept and definition of community, identity and sense of belonging as participants were specifically asked to delimit both their *agdal* and their community. Participants in the workshops were informed and invited by the village leaders (ADL and local officials) according to detailed instructions, balancing both the gender and age structure.

⁴⁶ **Participatory mapping** or participatory geographic information system (PGIS) is the practice of gathering data through traditional methods such as interviews, questions, and focus groups and by using paper maps to record spatial details (see Morrow, 1999). This information is then digitized so that it can be analysed and interrogated using computer GIS software, and results can be communicated using computer-drawn maps (De Souza and Clarke, 2018).

The delimitation of both the *agdal* and study-area community were manually drawn on an A0 transparent plastic sheet attached over the aerial image map. At the end of each workshop, the original image map with the plastic sheet containing the data was also photographed for verification.



Figure 24: Initial meeting and prospective open interviews in Tiskji conducted with Jmaâ members and local leaders (Romera, 2018).

4.2.3. PARTICIPANT OBSERVATION

Through the technique of participant observation, I was immersed in the context object of study, forming part of the community. In both communities, I participated in the context and constant interaction, identifying myself with the locals while maintaining my own role as a researcher. In order to do so, I settled in the village (*douar*) for about a month, sharing with them the daily life, living in the house of one of the families in the community, attending to local festivities and meetings and organising some field trips to properly know the wider context surrounding each community.

The objective was to articulate and broaden the data resulting from the rest of the methods employed, in order to provide as complete a vision of reality as possible. The system used to record and store the observed data has been narrative⁴⁷.

Using a combination of informal open field interviews with community members, formal semi-structured ones with key informants, participant observation, field trips, statistical data and document review, I gathered information in both communities that allowed to make an in-depth ethnographic characterisation of each *agdal* and ICCA or community.

4.2.4. ETHNOGRAPHIC CHARACTERISATION OF AGDALS AND LOCAL COMMUNITIES

Data were collected to make an in-depth characterization of each local community and their *agdal*. As local informants had indicated previously in both communities (during the prospective open

⁴⁷ A narrative system is an open system without predetermined categories, capable of recording broad segments of events and behaviours in oral and written form, in which the observer/researcher is the main instrument of observation. What is recorded depends to a large extent on the perceptual system of the observer and his/her ability to capture and transmit the observed in everyday language.

interviews and the PGIS workshops), their *agdal* and their community are different, so each *agdal* and community were characterised separately when necessary.

The in-depth characterization includes the following main sections: socio-territorial and environmental description of the macro-area of study, description of the agro-silvo-pastoral *agdal*, description of the community (legal and governance issues, TLK and cultural issues).

The macro-area of study includes questions related to the main defining characteristic of the local communities, i.e.: setting, demographics, socio-economy, geography, landscape and main ecosystems, etc. While the description of the agro-silvo-pastoral *agdal* focuses on issues like community rights over resources, *agdal* history and current functioning, institutions of governance, threats and main elements of local identity, among others.



Figure 25: Ethnographic characterisation of each *agdal*, local community and participant observation. (Romera, 2018, 2019).

4.2.5. IN-DEPTH SEMI-STRUCTURED INTERVIEWS

Through individual and collective in-depth semi-structured interviews with community members (see Table 9), I inquired about the current local model of governance, the *agdal*, the ICCA and their relation to both the RBA and the official administrations. These semi-structured interviews were conducted within the two local communities. Interviewees included key local actors like representatives involved in the governance of the ICCA and *agdal*, local official administrators, local NGOs, entrepreneurs and community leaders. In all, 43 interviews (26 in Tiskji and 17 in Tamejloucht) were conducted at the local level.

	<i>TISSKJI</i>	<i>TAMEJLOUCHT</i>
Total number of Interviewees	26	17
Men	15	9
Women	11	8
Target Groups (nº of interviewees)		
Local Administrations	3	3
Local Associations	5	2
Feminine Cooperatives	11	1
Agriculture	2	-
Herders	-	2
Services and Construction	2	-
Tourism	3	-
Emigrants	-	1
Other (housewives)	-	8

PART 2. METHODOLOGY

Table 9: Semi-structured interviews conducted with community members in both local communities, by gender and target groups.

In each community, the criteria for conducting interviews were: (i) to interview a representative sample of the range of gender, activity in the community and knowledge of/link to their *agdal*, and (ii) to include key people identified through community referrals as the most knowledgeable (Fernández-Giménez et al., 2012). I stopped interviewing when additional interviews offered little new information and/or the remaining community members did not agree to be interviewed. Interviews lasted 1-2 hours and took place at the respondent's home (for most women), in the community leader's house (assimilated to a quiet and undisturbed public location), or in the village's restaurant (for most men). All interviews were audio-recorded (except for a few cases in which the respondent did not agree) and transcribed for analysis.

In the interviews, we asked community members about both the *agdal* and the community (ICCA) and about their knowledge and opinion regarding the RBA. Special attention was given to the sense of belonging to their community and the similarities or differences perceived by the respondents regarding the *agdal* and the ICCA and their vision for the future.



Figure 26: Examples of semi-structured interviews conducted with community members in both local communities (Romera, 2018, 2019).

4.2.6. ICCA RESILIENCE WORKSHOPS

The “ICCA Resilience and Security Tool” (i.e. Resilience Index), was developed by the ICCA Consortium (ICCAc) in its draft version in 2011-2012 and tested until 2015 in different regions worldwide (Borrini-Feyerabend et al., 2012), until its simplified version was published in 2017 (Borrini-Feyerabend and Campese, 2017). For the purpose of this research, I used the 2012 version in French, because it was

the one used by the “Moroccan initiative to support *agdals*”, driven by the PNUD⁴⁸ at the time in other 4 communities or ICCAs, and I considered it might be enriching for all parties to networking under the same version.

The “ICCA Resilience and Security Tool” is a particularly appropriate method to better understand the elements that contribute to local resilience⁴⁹, and to promote within the local community a series of collective discussions and a process of self-reflection about phenomena that may affect their *agdal* and community. In this sense, I agree with the authors (Borrini-Feyerabend and Campese, 2017): a key consideration to use this method correctly is that the assessment and analysis need to make sense for the custodian local community in charge of the *agdal*. To this end, I took time during the initial meetings with both community leaders and ADLs to share with them the pros and cons of the method and ask them to decide if this kind of structured collective discussion was meaningful for their communities or not. As in the case of the PGIS workshops, community leaders found the tool meaningful to them (beyond the scope of the research) for the collective discussion it might foster among a wide range of community members.

With the community leaders’ advice regarding each community’s internal characteristics and dynamics, we agreed on the need to organise gender-based discussions but no age-based groups. We chose to invite a representative sample of community members. These collective workshops had a duration of 3 hours each approx. and were carried out in both local communities following the guidelines of the ICCA Consortium (Borrini-Feyerabend et al., 2012; Borrini-Feyerabend and Campese, 2017) (See Annex IV).

The method comprises a set of questions to facilitate the self-evaluation of the local community and their ICCAs’ or *agdal*’s resilience and security relative to a combination of internal and external factors.

The internal components include questions related to the main defining characteristic of the ICCA, i.e.: (1) “strength and solidity of the connection between the community and its ICCA (e.g. richness of motivations, relationship embedded into culture and sense of community identity); (2) capacity of the community to govern the ICCA (e.g. presence of respected institutions and leaders capable of taking decisions and having those implemented, accountability to the community and others, etc.); (3) apparent results of management decisions implemented by the community for both conservation of nature (biodiversity, ecosystem functions) and sustainability of local livelihoods. Questions also relate to internal threats to cohesion, and internal socio-political and cultural change” (Borrini-Feyerabend et al., 2012; Borrini-Feyerabend and Campese, 2017). The external components include questions related to recognition and support, as well as questions related to existing threats and disruptive forces likely to affect the sustainability of the ICCA.

“For each component analysed the members of the community using the tool are invited to consider whether the factor is strong; fairly strong or strengthening; medium; fairly weak or weakening; or weak. Once the members of the community have discussed a question and decided on an answer, they may tick or circle the score that appears in the column corresponding to their answer. The process

⁴⁸ Programme de Micro Financement du Fond de l’Environnement Mondial (PMF-FEM) PNUD, Maroc. GEF Small Grants Programme. Global Support Initiative for ICCAs (ICCA-GSI) Morocco:

<https://sgp.undp.org/component/countrypages/?view=countrypage&country=79&Itemid=204>

⁴⁹ ICCA Resilience: the capacity to fully recover after damage and effectively respond to the threats and opportunities it faces. ICCA Security: the likelihood that it will continue existing and thriving as an ICCA (Borrini-Feyerabend et al., 2012; Borrini-Feyerabend and Campese, 2017).

of asking and answering the questions and thinking about phenomena that may affect their community, ICCA or *agdal* is what makes the method useful” (Borrini-Feyerabend et al., 2012).



Figure 27: Examples of ICCA resilience and security workshops conducted with community members in both local communities (Romera, 2018).

4.2.7.COMMUNITY FEEDBACK MEETINGS

Community feedback meetings in both local communities took place in two stages, following the participatory and ethical approach of the research and the time and technical requirements for data analysis.

The first round was towards the end of the fieldwork period (April 2019). Then, meetings in both communities were organised (8th April for Tiskji and 27th April for Tamejloucht) aiming to: (i) Update the community members about the research since the last contact (a few months before); (ii) Inform them about the next research steps; (iii) Keep them linked in the medium-term to the RBA manager and the PNUD local development agent (in the case of Tiskji); (iv) Thank the community for all their support; (v) Ask for their feedback and feelings about the researcher stay in the community, on the one hand, and their views about the research and researchers in general regarding their community/territory, on the other hand. A total of 24 community members attended the meetings.

The second round took place about one year later (December 2019). Community validation workshops (*approx.* 2 hours each) were held to assess and validate the digitalisation of the hand-drawn transparent sheets resulting from the first PGIS workshop. The initial analysis and digitalisation of the hand-drawn mappings were reflected on and slightly corrected by participants. All the previous participants were invited to participate, together with other interested members of the community; however, women did not attend this time and only a few community representatives were present in the second local community meeting. A total of 18 community members attended the meetings.

5. DATA ANALYSIS

In line with the research strategy adopted, social analytical tools and data analysis techniques described below were used first to answer specific objectives 1 and 2, but most importantly to address the **specific objective 3**. To do that, I used different sources of data from previous data collection methods (see Fig. 28). Data analysis at the global-local interface involved the following **sources of data** gathered during the fieldwork:

RBA

- Interviews, audio-recorded from RBA informants (in French)
- RBA SWOT matrices
- RBA focus group cards
- Policy reports related to the RBA (DREFLCD-SO, Land Planning Service)

Local Communities

- Interviews' transcriptions from local communities (Amazigh-French; written and audio-recorded)
- Participatory maps of agdals and ICCAs
- ICCAs' ethnographic characterisation tables
- ICCAs' resilience and security index
- Statistical data from the HCP (Haut Commissariat au Plan)

Other

- Fieldwork notes (from the local communities, the RBA and some other workshops)
- Questionnaires from the 2nd national ICCA workshop

Figure 28: Sources of data gathered during the fieldwork, jointly coded during the data analysis process. Source: own elaboration.

5.1. QUALITATIVE CONTENT ANALYSIS

The Grounded Theory lens (Lawrence and Tar, 2013) have been a logical and coherent continuation of the ethnographic, case study and participatory approaches used during the fieldwork. Because Grounded Theory aims at generating testable knowledge inductively from data rather than testing existing knowledge on the field, this approach fits the research aims and has guided the process of coding, analysis and interpretation of data obtained in the field from multiple empirical sources.

I used qualitative content analysis for the joint coding and analysis of the field data obtained (e.g. interviews' transcriptions and field notes). The data were analysed following constructivist analytic methods (Charmaz, 2014; Cortés-capano et al., 2020), iteratively integrating both inductive and deductive approaches⁵⁰. The analysis was performed with the Software *QSR NVivo 12* (see Fig. 29) for

⁵⁰ Inductive (i.e. grounded in the views and experiences of the participants) and deductive (i.e. inquiring about topics related to existing theoretical frameworks, such as good governance and post-normal conservation) approaches (Lockwood, 2010; Moon et al., 2016).

coding social research data. The analysis and coding mainly relied on audio transcriptions, written transcripts, ethnographic field notes from participant observation, memos and field notes from informal conversation when interviewees did not give permission to record audio.

5.1.1. CODING PROCESS

I first coded information by assigning codes based on the main research questions and topics addressed in the different sources of data; namely, interviews, focus group and workshops, fieldnotes, etc., to specific units of analysis (i.e. paragraphs, sentences, words, maps, audio clips). To ensure consistency of the ethnography information reported, I organised the information provided by respondents and participants into a final codebook, comprising 33 codes and 46 subcodes. For example, the code “Interface” includes four additional subcodes (i.e. influencing factors, jurisprudence – law, proposals for link RBA-LC, relationships).

The results of qualitative content analysis informed the stakeholder and SWOT analysis explained in detail below, as well as the rest of analysis regarding the RBA and local governance and perceptions about governance, visions of future and perceived global-local and local-global interface within the Arganeraie. For example, results of qualitative content analysis provided the basis for the perceptions-based analysis of how RBA governance and management is being perceived by the main RBA institutional stakeholders.

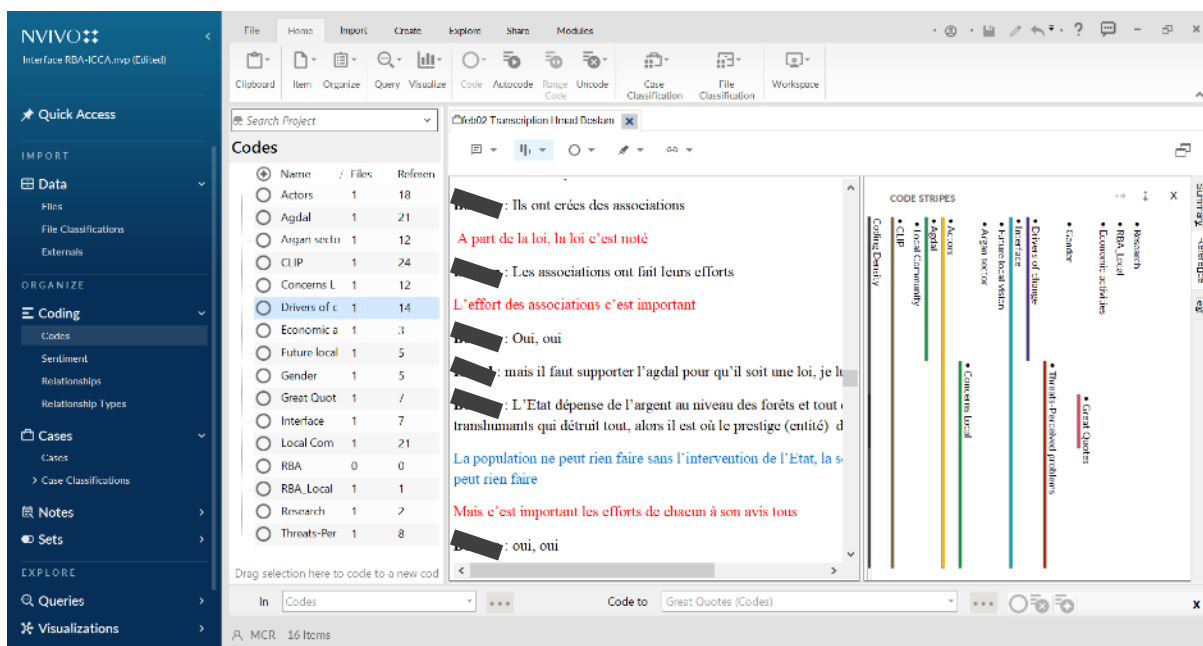


Figure 29: Example of the coding process. Software QSR N*VIVO 12.

5.1.2. SWOT ANALYSIS

The RBA SWOT analysis was conducted from (i) data in the individual SWOT matrices as perceived by the institutional stakeholders interviewed, plus (ii) the complementary info gathered during the Expert Focus Group, plus (iii) further strengths, weaknesses, threats and opportunities raised from the content analysis of interviews, field notes and the RBA *agdal* workshop (through the specific code and subcodes assigned). This RBA SWOT analysis contributed to the examination of the institutional approach to environmental governance of the RBA.

The local SWOT analyses were obtained from the content analysis of all sorts of local level interviews, field notes, the ICCA resilience workshops and the RBA *agdals* workshop.

5.1.3. PERCEPTIONS OF THE INTERFACE

The analysis of perceptions about the interface between the RBA and the local communities was made bidirectionally. That is, from the local perceptions of the actual and potential link between the RBA or its related institutions and the local communities within the RBA; and from the RBA level perceptions about the same link (RBA-local communities and *agdals*) in two scenarios, namely the current actual link and the feasible potential one. Data were obtained from the specific codes assigned during the content analysis of all sources of data at the local and RBA level.

5.1.4. PERCEPTIONS OF THE FUTURE

The analysis of perceptions about future scenarios was made separately for each of the two case-study local communities and for the RBA. While at the local level perceptions about the future were mainly focused of development issues, basic needs, and concerns regarding local communities' resilience; at the RBA level a wealth of information was obtained on two feasible future scenarios for the RBA (i.e. realistic and positive), plus stakeholders concerns and proposals for the future governance of the RBA. Similarly to the analysis of perceptions about the interface, data were obtained from the specific codes assigned during the content analysis of all sources of data at the local and RBA level.

5.2. STAKEHOLDER ANALYSIS

Stakeholders⁵¹ analysis allows identifying how different actors interact in multi-layered and local network governance structures. To explore networks in a systematic manner (Alexander et al., 2016), I have (1) reflected on the specific ways in which governance actors are embedded in a broader constellation of stakeholders, rights-holders, and decision-makers; (2) examined the diverse values and interests of governance actors and the implications for governance outcomes at the RBA and local communities level; and (3) reflected on the specific structure and formal and informal dynamics of social relational networks; given the implications for decision-making and IEG outcomes.

Building up mainly on the prospective open interviews, the in-depth semi-structured interviews and field notes from participant observation, three comprehensive stakeholder analysis (i.e. RBA, LC1 and LC2) were conducted in two stages each. First, through a stakeholder identification and mapping (actor's map); and second, through a subsequent in-depth analysis of the relationships of Collaboration and/or Conflict, Legitimacy, Interest and Power (i.e. CLIP analysis) existing among actors identified.

5.2.1. ACTOR'S MAPPING

Drawing on the actor's databases built during the fieldwork for the RBA and each local community and on data gathered through interviews and field notes, we identified and characterised each actor

⁵¹ Stakeholders are the parties whose interests may be affected by an action or who can influence a process (e.g. policy-making or implementation), using means at their disposal, such as power, legitimacy, and existing ties of collaboration and conflict (Reed et al., 2009).

according to their legitimacy, power, interests and relationships following Chevalier and Buckles (2008). The ethnographical approach and long stay in the region allowed for an iterative process comprising different types of interviews with key informants at the different levels plus field notes to identify and characterise other local stakeholders (e.g. landowners, municipal authorities, private companies and businesses, etc.) in the area. The results of this process were then used to understand the local context, to inform sampling design (i.e. aiming to represent a diverse set of contexts and perspectives) (Cortés-capano et al., 2020); and to build a new database of actors adapted to its analysis in the software *Kumu* (Kumu, 2020).

Stakeholder identification and mapping was then performed using the relationship mapping software *Kumu* for the RBA and each of the two local communities (see Fig. 30). The degree of centrality is a *Kumu*'s Social Network Analysis metric representing the total value of each actor's (i.e. element in the network) connections. That is, each actor's weighted number of connections with other actors regarding the RBA. Additionally, "key actors" here are those with a maximum degree of influence (equal to 6 on a 0-6 scale) regarding the RBA decision-making.

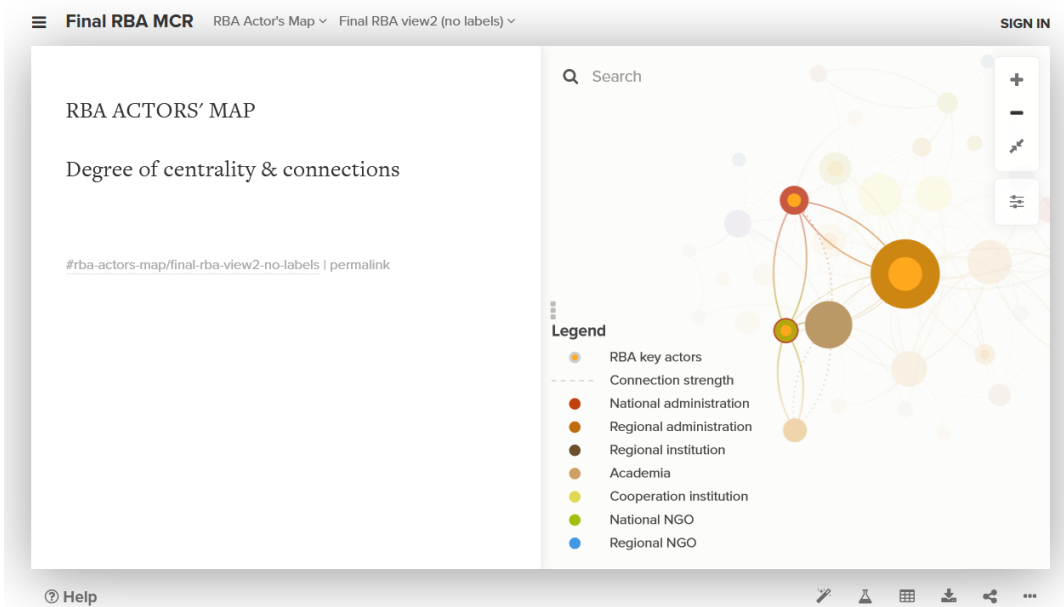


Figure 30: Example of the actors' mapping and visualization process through relationships maps. Software (online) *Kumu*.

5.2.2. CLIP SOCIAL ANALYSIS

To complete the stakeholder analysis, I conducted three subsequent in-depth analysis of the relationships of Collaboration and/or Conflict, Legitimacy, Interests and Power (i.e. CLIP social analysis) existing among actors linked to (i) the RBA, (ii) the first local community, and (iii) the second local community. The so-called CLIP prescriptors were measured following the CLIP methodology⁵² as described in Chevalier and Buckles (2008). See Annex III for further detail on how each stakeholder or actor has been considered and which are the elements pondered to characterise and measure legitimacy, interests, power and existing relationships of collaboration, concurrence and/or conflict.

⁵² The CLIP methodology is part of the set of methods within the Social Analysis Systems (SAS) methodological framework proposed by Chevalier and Buckles (2008) in its work "SAS2: A Guide to Collaborative Inquiry and Social Engagement".

The relevance of the CLIP technique for the research topic is that it allows creating profiles of actors involved in a particular situation in a more comprehensive way than the classical stakeholder analysis based on interests and power (or importance and influence). Thus, it allows to describe the characteristics and relationships of the main actors involved in a particular situation and explore ways to solve social problems (Chevalier and Buckles, 2008). Figure 31 illustrates the classification of actors depending on their overall degree of Interest (I), Power (P) and Legitimacy (L) regarding the particular situation under analysis. Then, the relationships of collaboration, concurrence and/or conflict between each actor with each other are analysed through a double entry matrix as presented in Annex III.

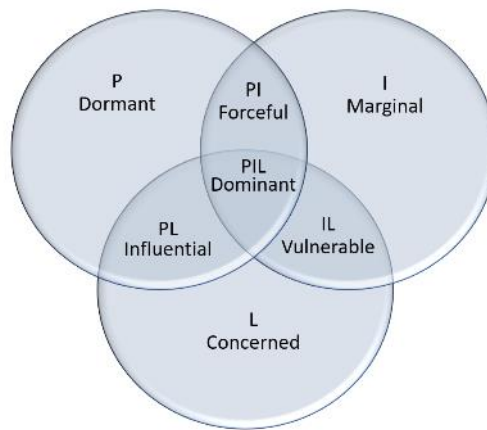


Figure 31: CLIP Social Analysis technique for the classification of stakeholders looking at existing relationships of legitimacy, interests and power. Source: Chevalier and Buckles (2008).

Finally, the Conflict-Collaboration-Legitimacy-Power-Interest matrix (i.e. CLIP matrix) enables the visualization of the main relationships of collaboration or concurrence/conflict according to the category of actors and if they may be considered as net winners or losers in relation to the situation under analysis (see Figure 32 as an example matrix).

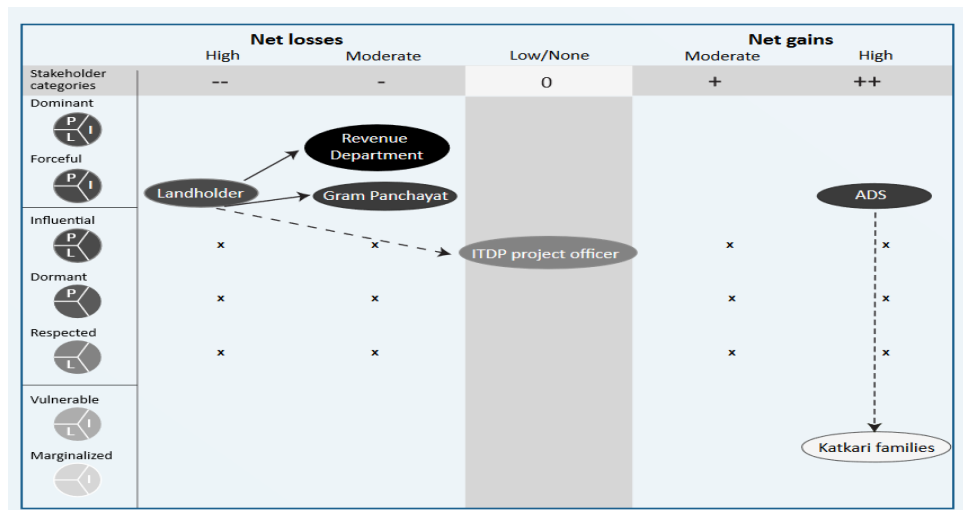


Figure 32: Conflict-Collaboration-Legitimacy-Power-Interest matrix. Source: Chevalier and Buckles (2008).

5.3. POLICY ANALYSIS

Policy analysis has informed a first stage of the examination of the institutional management of the RBA. That is, what formal policies and regulations stipulate versus what was actually happening at the time of the fieldwork -2018-2019- concerning the RBA.

To this end, I have consulted and analysed information on the most relevant policy documents regarding formally acknowledged actors, governance and management structures and formal institutional attributions (e.g. the RBA Framework Plan of 2002 and the RBA Action Plan of 2020, official web pages and strategic policies for key institutions such as DREFLCD-SO, ANDZOA, ADA, Land Planning Service or the Regional Council, among others). Then, I have compared this official information with data coming mainly from in-depth semi-structured interviews, informal open and semi-structured interviews and field notes from participant observation. However, it must be noted that I have mobilized information from the joint content analysis of the field data obtained at the RBA level (e.g. by assigning a specific code and subcodes to each of the issues to be analysed).

6. ETHICAL CONSIDERATIONS

The research design followed the UAB ethical guidelines and further specific CEEAH's recommendations about ethnographic and anthropological research conducted in non-European countries and vulnerable populations. Special attention was put over the national formal ethical requirements for research projects in Moroccan territory. Since my host Moroccan university (University Cadi Ayyad de Marrakech, UCAM) had no ethics committee, I first got the formal approval of the Moroccan Ministry of Internal Affairs (Authorisations Division, authorisation no. 5614) which formally allowed me to move around the whole study area (including the cities of Rabat and Marrakech and the administrative provinces comprised by the RBA), present myself and my research project to local authorities and conduct the ethnographic research as planned. I also had the authorisation from the RBA authorities (i.e. DREFLCD-SO). In this way, I ensured that the research design was culturally appropriate and met national ethical requirements.

Participation in all the instances of this study was voluntary. Informed consent was granted by all participants after adequately understanding the research aims, the institutions promoting and funding the research, how their data would be used and their rights as participants. It was possible for participants to withdraw from the study at any time and that it would not affect them in any way. It was stated that every opinion was valid as the aim of the study was to understand participants' perceptions, experiences and reflections.

The anonymity and confidentiality of all participants were strictly preserved by not revealing their personal data at any stage of the research process (i.e. data collection, analysis and reporting of the main findings)⁵³. Therefore, personal data obtained were pseudo-anonymised and kept in a separate file confidentially with a code. Verbal consent was sought and gained from all participants when conducting interviews, collective workshops, field trips, the focus group and when participating in

⁵³ For reasons of confidentiality, in-text quotations, personal communications and fieldnotes have followed the standard procedure, by putting the quote in quotation and the (fieldnotes, date) right after. Concerning quotes from my interviewees, referring to specific participants was not relevant, but more information was appropriate sometimes (e.g. distinguish their profile). In these cases, I have cited them by providing the interviewee profile/role and date: e.g. (community leader, date), (wise woman, date), (social researcher, date).

events, as well as for note-taking, recording and taking pictures. Additionally, discussions were audio-recorded and pictures taken only after asking for expressed permission by the participant/s.

At the **institutional level** (national, regional and subregional), no interviewees nor their institutions asked for a formal interview request letter. In some cases, they asked for either the scientific hosting certificate from the UCAM or the research authorisation from the Ministry. In all cases, I asked in advance for permission to audio record the interview.

At the **local level**, in addition to the formal ethics guidelines and research authorisations, I adopted an approach based on "community consent" and "procedural consent"⁵⁴ (Molina et al., 2018). It consisted of several steps that ended up in providing high levels of community acceptance (towards me as researcher and person), relatively quick trust-building and great help in conducting my research. The first step consisted of a preliminary long field phase to get to know and gain trust and consent from the local leaders and host families in order to settle in the communities and conduct ethnographic research. Second, I obtained local authorities' permission upon arrival, by providing them (and the community leaders) with (a) the formal research authorisation, (b) a letter signed by the hosting university indicating the purpose and length of my stay in the village and my contact details⁵⁵ and (c) additional explanations about the research plan and logistics, while remaining open to their feedback. Third, once settled in each local community and before starting the data collection, I hold preliminary collective meetings also with local household heads and representatives of community governance institutions to introduce myself and my research methods again (with the support of local leaders) as a sign of respect and actively asking for their advice and feedback. Finally, I continued asking for explicit oral consent to interview, record the interview, take notes, and occasionally take photographs before each interview or discussion.

At the beginning of each collective workshop and the first formal interviews, I briefly introduced myself and explained the research (until a point where most community members already knew it). I emphasised that I was a university student with individual and independent funding, but that due to my research design and topic I was also in close contact with domestic researchers, administrations, development agencies, etc. I would then shortly introduce the objectives of my research and the importance of the information participants could provide. I did my best to not generate expectations of further benefits or rewards to the community. I also paid attention to not guide discussions on possible answers. However, a certain amount of bias must be acknowledged here, as most respondents already knew me and my research in advance (due to my long stay in the communities and the ethnographic research design). Further detail on sources of bias will be provided in the "Strengths and limitations" section.

Overall, by following these ethical criteria, the approach complied with the ethical principles of research in the human sciences both in Barcelona (CEEAH-UAB ethical guidelines) and Morocco (Authorisations Division, Ministry Internal Affairs). However, I deem enriching and necessary⁵⁶ ethical

⁵⁴ Procedural consent: consent must be considered not as a discrete act but as a renewable process as the research progresses, from open and exploratory phases to more focused and structured phases. Under these conditions, initial assent must be progressively replaced by explicit consents for each data collection and/or processing (Molina et al., 2018).

⁵⁵ In case the participants would like to contact me or express any concern during the research stay or afterwards.

⁵⁶ In a context of post-normal science addressing wicked socio-environmental problems, in which researchers and academics jointly contribute with other social actors to the production and deployment of relevant and useful knowledge, mutually recognising their specific expertise and experience.

PART 2. METHODOLOGY

considerations that go beyond the most referred ones in environmental social science research (like the disclosure risk or consent detailed above). In that sense, approaches like participatory research, participatory action research (PAR) or co-research, among others have a huge potential to advance ethics in social-environmental research while enhancing data quality, inclusiveness, equity and significance.

Since one of the initial concerns was to explore how the present research could be conducted jointly with and for the direct benefit of the local communities, participatory research was an imperative research framework. Therefore, a participatory approach was implemented at a local and institutional level, addressing three main aspects:

1. Ethics and Trust: (a) Presenting a research topic and “open research design”; (b) Discussing and validating results with participants, that is, assessing the fieldwork.
2. Validity and Local Knowledge. Selecting the study area.
3. Data collection. Ethnographic participatory approach.

Besides the participatory research aims themselves mentioned at the beginning of this chapter, community leaders of both communities had acknowledged in the initial meetings that the combination of research methods agreed with them (e.g. PGIS workshops, ethnographic characterization of the local community and the “ICCA Resilience and Security Tool” workshops), offers useful information to the community leaders in charge of the local and customary governance structures.

PART 3. STUDY AREA

This chapter offers an extensive description and analysis of the geographical, historical and ethnographical contexts of the Arganeraie Biosphere Reserve (RBA) and the two rural local communities studied. This comprehensive contextualization of each of the local communities and the biosphere reserve itself, complements and allows a proper understanding and framing of the results chapter. I build up on scientific, policy, legal and grey literature when possible and provide empirical and ethnographical data when other information sources are lacking.

1. ARGANERAIE BIOSPHERE RESERVE

The Arganeraie Biosphere Reserve is located in the southwest of Morocco. It covers a vast intramontane plain of more than 2,500,000 hectares⁵⁷ (DREFLCD-SO, 2019) bordered by the High Atlas and Anti-Atlas mountains and open to the Atlantic Ocean in the west (see Fig. 33). Thus, it has Atlantic and a continental influence, as it runs almost 300 km inland from the Atlantic shore. The RBA extends along the coastal fringe from northern Essaouira to southern Sidi Ifni with continental projections from Taroudant and Taliouine. It encompasses the plains of the rivers (*oueds*) Souss and Massa. The territory of the RBA stretches over an altitudinal range varying from sea level to 2,500 MASL, mainly on the southern flanks of the High Atlas and the northern exposures of the Anti-Atlas (DREFLCD-SO, 2019).

As the name of the biosphere reserve suggests, it was the Argan forest the fundamental incentive to urge the creation of the RBA in 1998. It is a remarkably large biosphere reserve including major cities such as Agadir (amongst the six most populous cities of the country), Essaouira, Tiznit and Taroudant.

⁵⁷ The new updated and georeferenced zoning of the Arganeraie Biosphere Reserve proposed in the Action Plan of 2020 (still to be validated by the participatory body), considers a total surface of 2,985,592 ha (DREFLCD-SO, 2020:46).

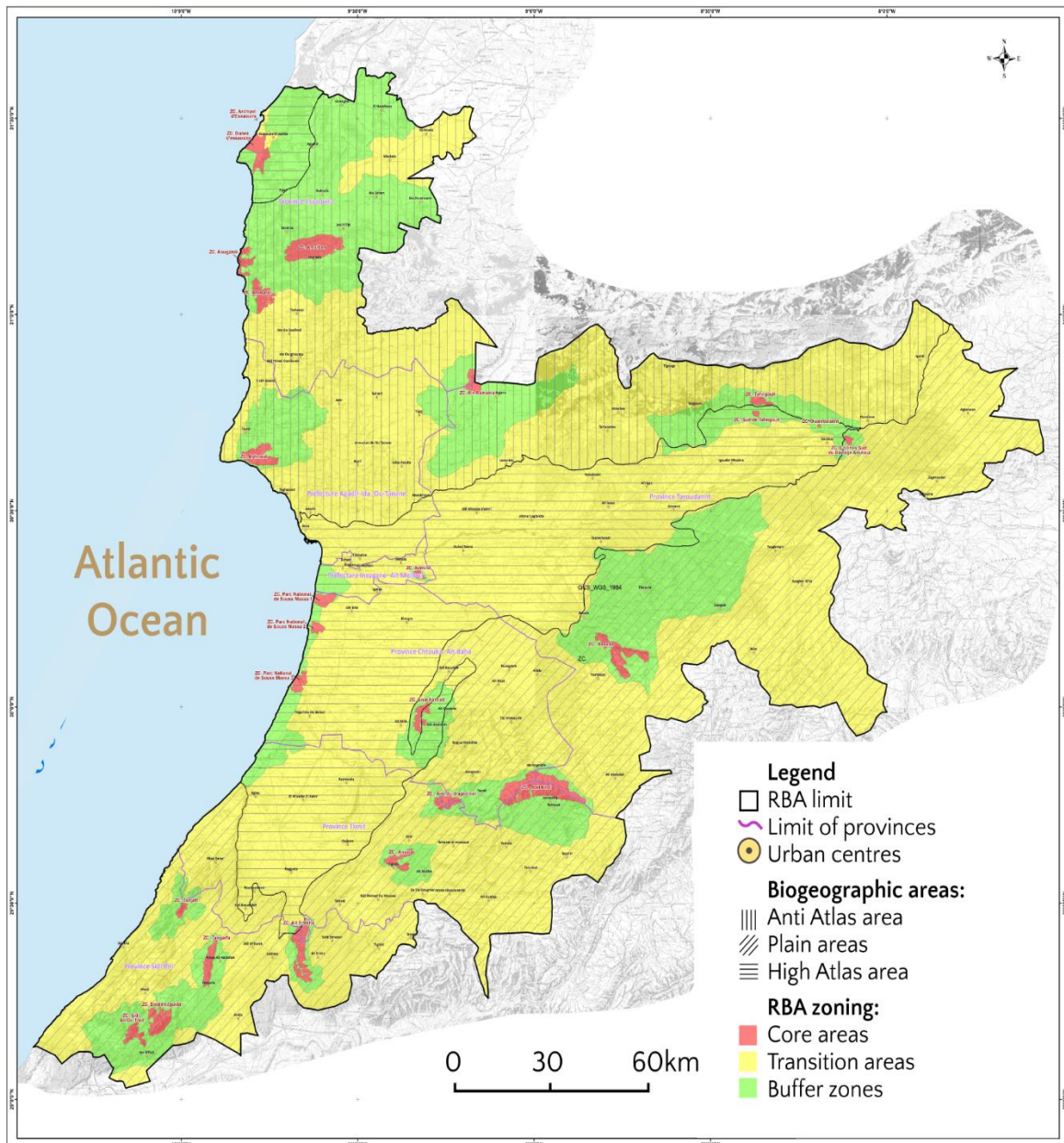


Figure 33: New zoning in the RBA indicating the three main biogeographic zones (Anti-Atlas, High Atlas and plains area), 2020. Source: DREFLCD-SO (2020).

Regarding the RBA zoning, it has recently been updated in the new Action Plan of 2020. See Fig. 33 (DREFLCD-SO, 2020). Previous RBA boundaries, still valid in the last UNESCO's ten-year periodic review of 2018 (DREFLCD-SO, 2019), were not properly georeferenced. They have therefore been revised and calibrated to match the official provincial and municipal boundaries, so that the new updated boundaries overlap properly on a GIS, something that has been lacking to date.

Following the new zoning of 2020, the Arganeraie Biosphere Reserve's total Surface stands for 2,985,592 ha (DREFLCD-SO, 2020:46):

- Core area: 66,352 ha (2.2%) divided into 24 core areas (11 in the Anti-Atlas, 5 in the High Atlas, 3 in the plains and 5 in the littoral area)
- Buffer zone: 684,181 ha (22.9%)

- Transition area: 2,235,059 ha (74.9%)

Other protection figures (i.e. protected areas) included in the RBA are the National Park of Souss Massa and 12 other SIBEs (i.e. Biological and Ecological Interest Sites), most of them included as core areas of the biosphere reserve: Dunes of Essaouira, Amsitten, Ain Asmama, Tamri-Cap Ghir (core and buffer area), Tafingoult, Admine, Assads, Dar Lhoucine (transition area), Jbel Kest, Anezi, Ait Erkha, Bou Tmezguida. In addition to the former protection figures, the inclusion of the Arganeraie in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity (2014) reinforces the recognition of the deep Human-Nature interconnection within the RBA.

1.1. BIOGEOGRAPHICAL AND ECOLOGICAL CONTEXT: THE ARGAN FOREST

The RBA is part of the Mediterranean-Saharan transition zone (Afker et al., 2019), established around the argan tree (*Argania spinosa* (L.) Skeels). The origin of the argan tree is one of the most controversial historical unknowns in this system. Some scientists consider it as a relic of the Tertiary period (i.e. 65 million to 1.8 million years ago) (Afker et al., 2019; Kenny, 2007; Lybbert et al., 2004; Turner, 2014)(Kenny, 2007). The argan tree, endemic to the sub-Saharan region in Morocco, is the only species of the tropical family *Sapotaceae* remaining in the subtropical zone (Lybbert et al., 2004; Msanda et al., 2005). “The goat, the eternal companion of the argan tree⁵⁸ (see Fig. 34), also appeared towards the end of the tertiary era” (Kenny, 2007).



Figure 34: Argan goat (A) and aerial grazing on the argan tree (B) (Romera, 2018; Romera, 2019).

The written history of the argan tree dates from the 9th century (Ibnou Rédouane). First Arabic writings by Ibnou Rédouane and Ibn Al Baytar attest to the age of the argan tree in Morocco; while the first publications in foreign languages, particularly in French, date back to the 16th century (Kenny, 2007). In the book “Atlas de l’arganier et de l’arganeraie”, Kenny (2007) notes that the term “*arganier*” is a recent term used in French-speaking literature and refers to the tree and the forest⁵⁹. In other languages such as English, German or Spanish, it is the term “*argan*” the one used to refer to the tree,

⁵⁸ There is an autochthonous race of goats that has co-evolved with the argan tree in the region since ancient times.

⁵⁹ Historical and scientific writings on the argan tree have never mentioned the etymological origin of the term “argan” or “argane”. However, the evolution of the vocabulary that has marked its use can be traced (Kenny, 2007).

the forest and the oil⁶⁰. In Arabic and Tashelhit, the same word is also used to designate the three entities: the argan tree, the argan forest, and the argan oil (Kenny, 2007).

The argan forest (i.e. arganeraie) is one of the most unique and ecologically valuable plant formations in the world, an unparalleled ecosystem formed by the emblematic argan tree (Afker et al., 2019; Lybbert et al., 2004; Turner, 2014). The argan forest covers approximately 950,000 ha (Le Polain De Waroux and Lambin, 2012) of calcareous arid or semi-arid land bounded by mountains (Msanda et al., 2005) and has more than 20 million trees (Charrouf, 2007), heterogeneously distributed throughout the territory (DREFLCD-SO, 2019). Figure 35 shows the last National Forest Inventory from 2016 corresponding to the RBA and the argan forest area. The argan forest constitutes a singular and original space with the mixing of five floristic elements: Mediterranean, Macaronesian, tropical, Saharan and endemic (Azenfar, 2007; Peltier, 1982). The RBA encompasses a vast and climatically diverse land, from the High Atlas mountains' Mediterranean steppe climate to the Anti-Atlas' semi-arid and arid climate. See Fig. 36 for the bioclimatic distribution, Fig. 37 for the large biogeographic zones of the RBA and Fig. 38 for a sample of representative landscapes.

⁶⁰ It is worth noting that in 2021, United Nations declared the first International Day of Argania (on 10th May 2021) to recognise the importance of the Argan tree in achieving the 3 dimensions (Economic, Social and Environmental) of sustainable development at the local level. From this moment, the English language also recognises the term "argania" to refer to the argan forest/ecosystem.

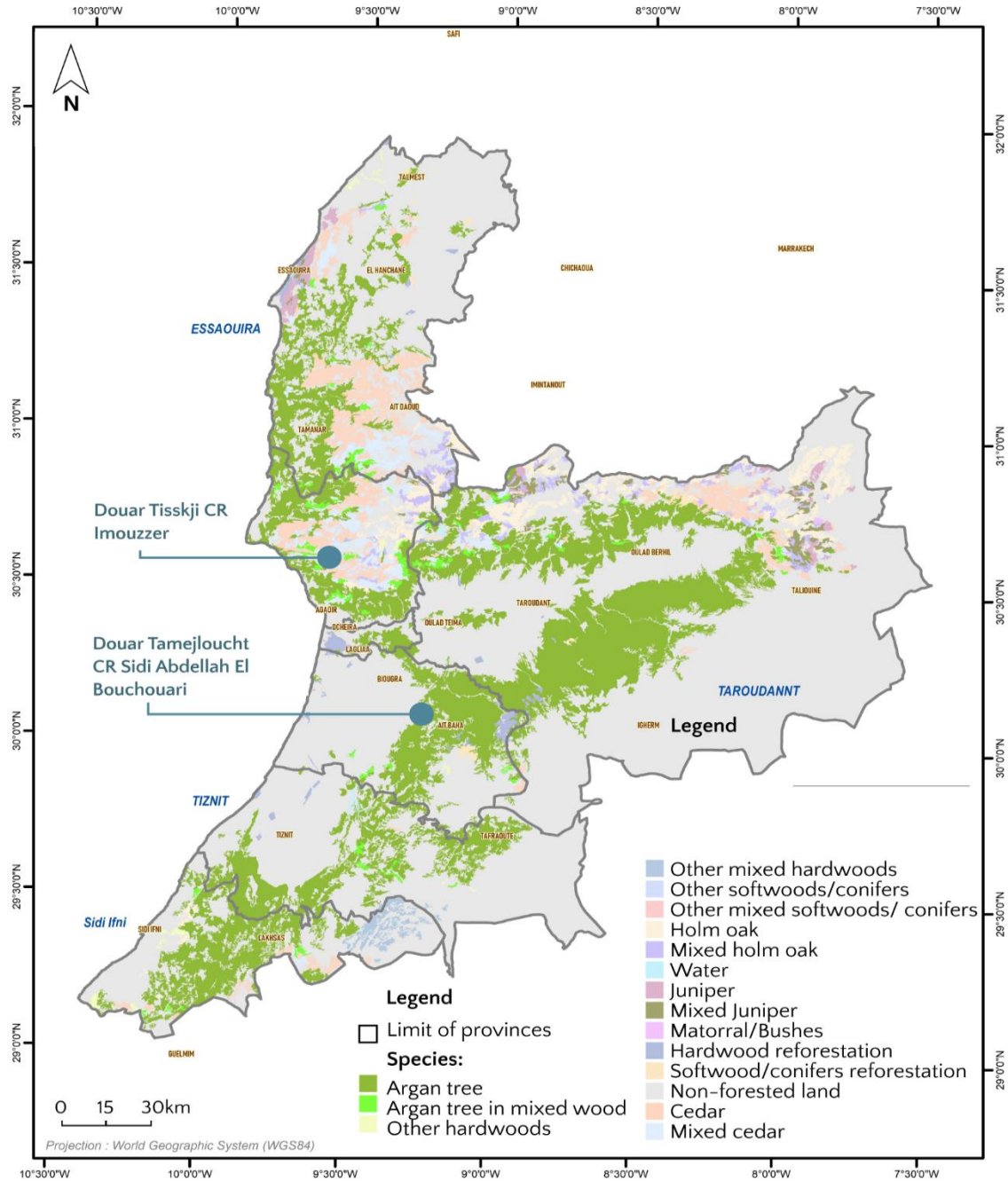


Figure 35: Last National Forest Inventory (IFN) from 2016 corresponding to the RBA area. Source: HCEFLCD, 2016.

Its location, in a mostly semi-arid region at the edge of the Sahara Desert, and its ecological singularity, adaptability and robustness make the argan forest the last bastion against desertification (Azenfar, 2007; Turner, 2014). The argan tree covers difficult latitudes, geographically and ecologically, is particularly resistant to drought and capable of adjusting to many environmental changes (Afker et al., 2019). Hence, the arganeraie *plays an irreplaceable role in the ecological balance and in the preservation of biodiversity*. The powerful root system of the argan tree is considered by many authors (M’Hirit et al., 1998; Mellado, 1989) as “the most important stabilizing element in the arid ecosystem” since it contributes to soil maintenance and helps to combat water and wind erosion, which threatens to desertification most of the region (Morton and Voss, 1987 as cited in Lybbert et al., 2004).

The argan tree is the second most important forest species in the country, after the holm oak (*Quercus ilex* L.) and just before the sandarac (*Thuja articulata* Vahl / *Tetraclinis articulata* (Vahl) Mast). It is a tree that can live up to 200 years (some 250-year-old subjects have been observed) (Charrouf, 2007). It may be shrubby or reach up to 10 m, occasionally 20 m, with a main trunk which may be a fusion of several interlaced stems. The rough bark is grooved longitudinally and transversely. The branches are spiny (Msanda et al., 2005). The altitudinal range of the argan tree extends from sea level up to 1,500-1,700 m (Azenfar, 2007; DREFLCD-SO, 2019).

1.1.1. CLIMATE AND PRECIPITATION

The argan tree formations are located in an arid to semi-arid lower thermo-Mediterranean with strong oceanic influence. The most correct expression would be "oceanic type of the lower thermo-Mediterranean stage" (Msanda et al., 2005). Its fundamental climatic characteristics are aridity, heat and high atmospheric humidity. In the whole arganeraie region, the intensity of aridity increases as one moves from west to east and from north to south. Thus, the northern part of the Atlas-dominated region is characterised by a humid to semi-arid climate, progressing towards the plain. In turn the plain, occupying the lower part of the Atlas relief as well as the Souss and Massa basins, has an arid climate. Finally, the southern and south-eastern part of the region that makes up the northern side of the Sahara is covered by a desert climate.

The Argan tree zone benefits from more temperate oceanic influences with annual precipitations between 150-400 mm and frequent fog throughout the year (see Fig. 36). Argan trees are subjected to drought 6 to 10 months a year (DREFLCD-SO, 2019); Msanda et al. (2005) note from April to October approx. Argan tree can withstand temperatures ranging from 3 to 50°C and subsist with very low rainfall (ANDZOA and FAO, 2018; Charrouf, 2007; Kenny, 2007) in a variety of soils, except for the deep mobile sands (Msanda et al., 2005). The area is exposed to the Atlantic's humid winds, which become an important source of humidity (for the argan forest and its productivity); even more relevant than the rainfall itself, especially during the summer season. This is a common fact for almost the entire argan forest (whether areas exposed to humid winds, or interior areas prone to humid fogs).

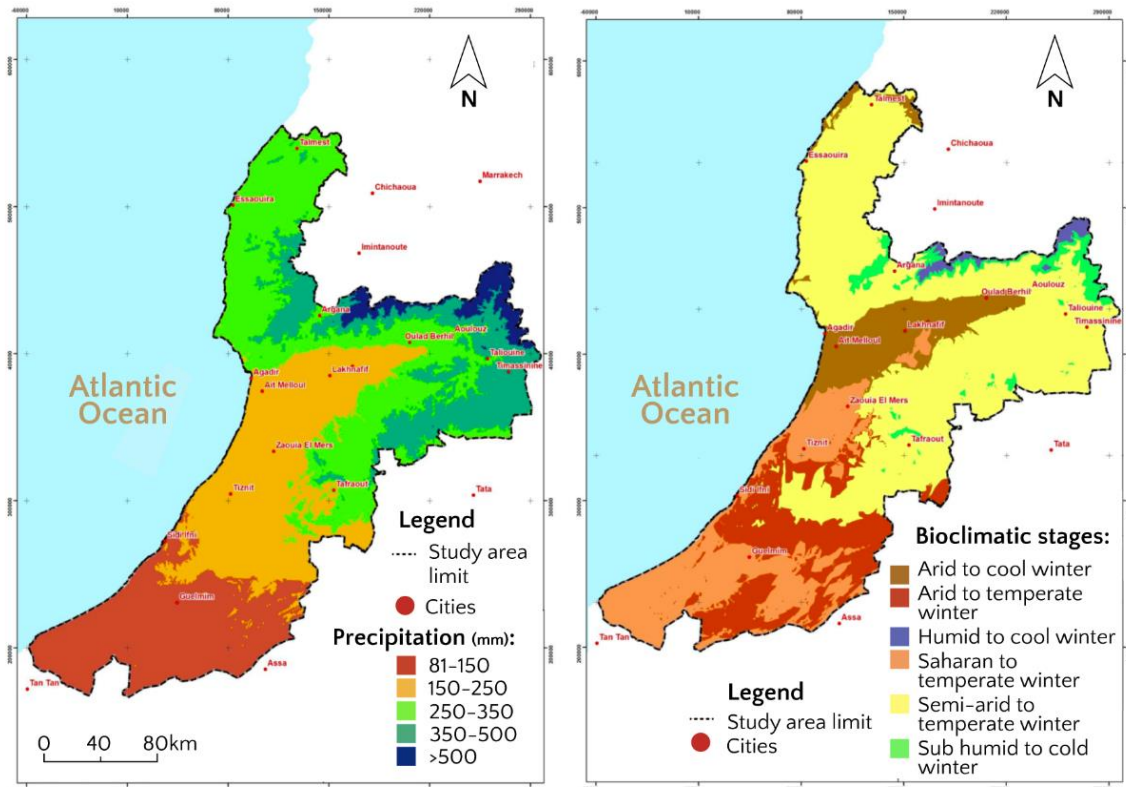


Figure 36. A: Annual average rainfall distribution (in mm): 250-350 for Tisskji (322mm) and 150-250 for Tamejloucht (187mm). B: Distribution of the bioclimatic stages according to the Emberger Climagram: Semi-arid with temperate winter for Tisskji and Saharan with temperate winter for Tamejloucht (ANDZOA, 2020)⁶¹.

1.1.2. BIODIVERSITY

Due to its size and the diversification of its relief and habitats, the RBA territory includes a great wealth and diversity of ecosystems and flora, representing almost a third of the country's total flora, with a marked level of endemism (Afker et al., 2019). The plant biodiversity of the argan zone reflects the biogeographic heterogeneity where Mediterranean, tropical⁶², succulent and endemic taxa coexist, resulting essentially in Mediterranean sclerophyllous forest, woodland and brush vegetation (Msanda et al., 2005).

The **floristic biodiversity** is quite remarkable, as it reflects the richness of up to eleven diversified habitats covering the different biogeographical zones of the RBA. The specific floristic diversity in the RBA area includes more than 550 species. As far as endemic plant species are concerned -apart from *Argania spinosa* and *Dracaena draco*- other prominent species are *Olea maroccana*, which is highly localised in the area; and *Acacia gummifera*, which is found in isolated places in the Argan and Atlas Cypress ecosystems (Afker et al., 2019).

⁶¹ Due to the lack of available data for the RBA, these maps include the RBA plus other territories under the attributions of the ANDZOA (mainly the southern Guelmim area).

⁶² For further information on these species of tropical of tropical origin, see: (1) Msanda F. Végétation de l'Anti-Atlas occidental et de sa retombée saharienne (Maroc): essai de synthèse. Doctorat ès-Sciences, université Ibn Zohr, Agadir, 2004. And (2) Fennane M, Ibn Tattou M. Catalogue des plantes vasculaires rares, menacées ou endémiques du Maroc. Bocconeia 1998, 8.

With regard to **endemic mammalian species**, the most noteworthy are, among others, the following: Barbary sheep (*Ammotragus lervia*), caracal or desert lynx (*Felis caracal*), gloved cat (*Felis libyca*), Saharan striped polecat (*Poecilictis libyca*), common genet (*Genetta genetta*), striped hyena (*Hyaena hyaena*), Cuvier's gazelle (*Gazella cuvieri*), Barbary squirrel (*Atlantoxerus getulus*), crested porcupine (*Hystrix cristata*), European otter (*Lutra lutra angustifrons*) and pharaoh's rat (*Herpestes inchneumon*) (Afker et al., 2019).

Concerning **endemic bird species**, some of the most representative would be the bald ibis (*Geronticus eremita*), the ferocious buzzard (*Buteo runfinus*), the lanner falcon (*Falco biarminus*), the peregrine falcon (*Falco peregrinus*), the tawny eagle (*Aquila rapax*), the booted eagle (*Hieracetus pennatus*) or the griffon vulture (*Gyps fulvus*). The inventory of terrestrial avifauna in the study area identified at least 61 sedentary breeding species, and a number of species that can only be observed on migration in spring or autumn. The bald Ibis remains the most remarkable element of this avifauna, constituting the emblem of the study area. The RBA is home to the last breeding colony of the world's largest Northern Bald Ibis (estimated at some 589 individuals) (DREFLCD-SO 2017).

Moreover, the RBA area has remarkable **herpetofauna**. It is home to a diverse mix of mountain species (*Bufo bufo*, *Laserta pater*, *Acanthodactylus erythrurus*, *Quedenfeldtia moerens*), some forest species (*Ophisaurus koellikeri* and *Blanus mettetalii*), as well as a good representation of the Macaronesian procession. Finally, tropical relics, notably *Bitis arietans* and *Naja haje*, are present (Afker et al., 2019).

1.1.3. GEOMORPHOLOGY AND LANDSCAPE

The last periodic evaluation report of 2018 (DREFLCD-SO, 2019) confirms the RBA's high diversity of natural environments (e.g. altitude, vegetation, soils, bio-climates, surface water, groundwater or fauna), which, in turn, strongly conditions land uses, livelihoods, cultural traditions, etc. of the inhabitants of the RBA. The geomorphologically complex physical environment encompassing the RBA, results in three significant major physico-geographical units (as shown in Fig. 37), namely:

- The Western High Atlas (rose area in Fig. 37). This unit can be divided in two sub-units: (i) the North-Western area of the Atlantic High Atlas (Chiadma-Haha Plateaux and the lower Tensift); and (ii) the inland area of the Western High Atlas (from the Argana corridor to the coast and the southern slope of the Marrakech High Atlas).
- The area of the Souss, Massa and Tiznit catchment areas; together with the plain of Essaouira (i.e. plain areas, in green in Fig. 37);
- The Western Anti-Atlas (blue area in Fig. 37).

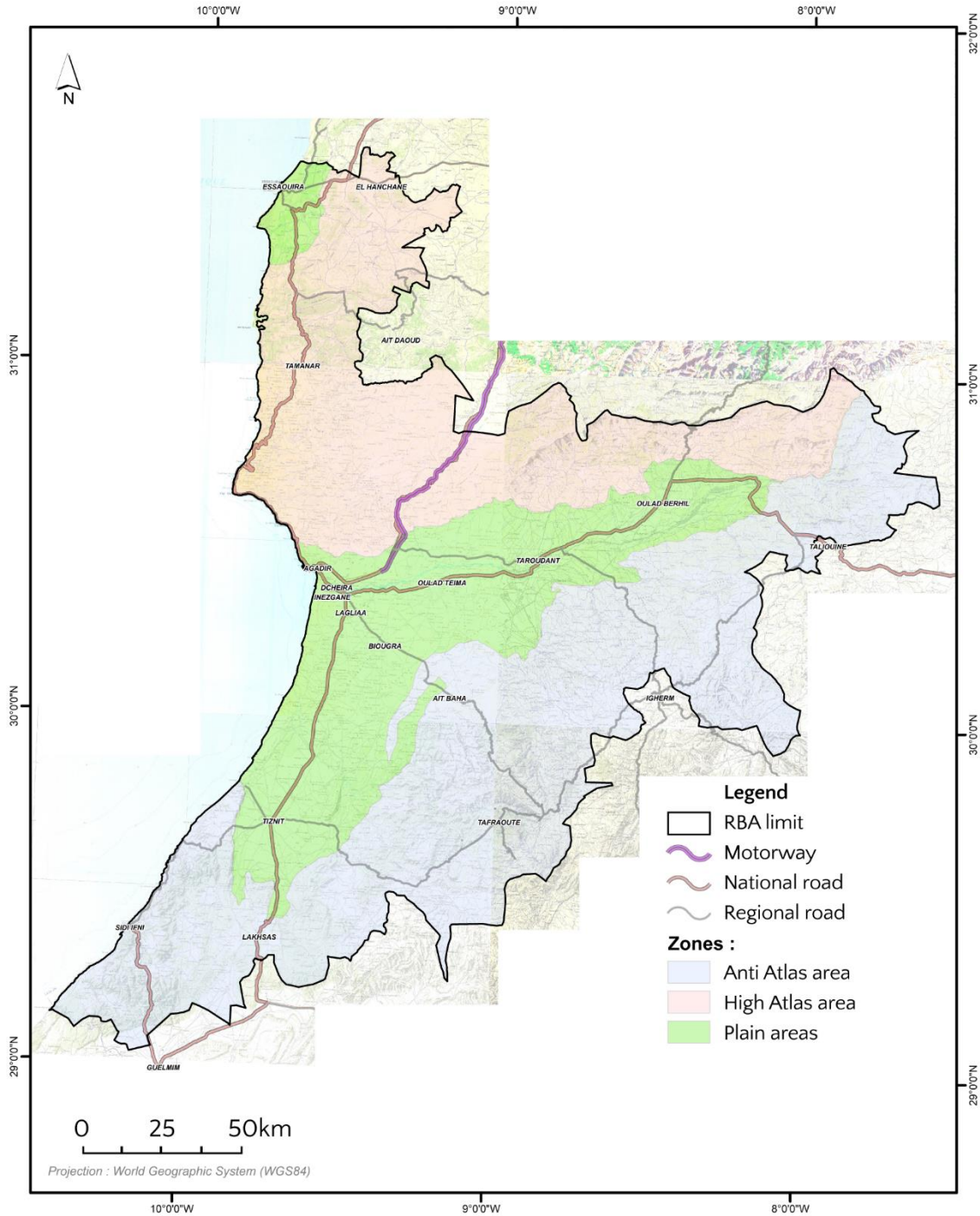


Figure 37: Large biogeographic zones within the RBA. Source: DREFLCD-SO (2019).

These large units have alternating mountains, hillcrests and plateaus covered with argan forests which play a very important role in ecological and socio-economic terms (DREFLCD-SO, 2019). In fact, its broad territory turns the *Arganeraie* into a highly diverse complex, not only from a geomorphological and ecological perspective, but also from a social point of view (Afer et al., 2019). The typical diversified landscape of the RBA faithfully reflects this strong relationship between Humans and Nature (Afer et al., 2019). In this sense, Azenfar (2007) highlights that the argan forest differs from other classic forest formations by the wide range of uses and exploitation it offers, either as a tree or as a space. Dry ploughing, grazing and fruit picking, among other activities, have shaped this multi-use forest throughout time and space, resulting in the characteristic landscape of the arganeraie social-

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ecological system nowadays. The geology also offers several very striking landscapes in the Anti-Atlas in particular (Afker et al., 2019). Figure 38 offers a sample of the most representative large biogeographic zones within the RBA, illustrating the diversity of climatic conditions, land uses within the argan forest, ecological units, geological landscapes and Macaronesian vegetation of the southwestern Anti-Atlas Argan forests.





Figure 38: Landscapes of some of the most representative large biogeographic zones within the RBA. A: Inland High Atlas mountains in Essaouira province (Romera, 2018). B: Littoral High Atlas mountains in Essaouira province (argan trees shaped by salty ocean winds) (Romera, 2019). C and D: Intensive irrigated agriculture among argan tree in the Souss Massa plain, prefecture of Inezgane-Ait Melloul (Romera, 2019). E and F: Argan landscapes of the Anti-Atlas mountains in Chtouka-Ait Baha and Tiznit provinces (Romera, 2019). G and H: Macaronesian vegetation of the South-western Anti-Atlas Argan forests, provinces of Chtouka-Ait Baha and Sidi Ifni (Romera, 2019).

1.2. ADMINISTRATIVE AND SOCIAL CONTEXT

The administrative division of the RBA includes three **administrative regions** (as shown in Fig. 39). The Souss Massa region constitutes 74% of the RBA's surface, whereas the Marrakech-Safi region (Province of Essaouira) stands for 18% and the Guelmim-Oued Noun region (Province of Sidi Ifni) for the remaining 8%. The main cities and towns are Agadir⁶³, Taroudant, Tiznit and Essaouira. Among all the three administrative Regions, the RBA includes the two 2 Prefectures of Agadir-Ida Outanane and Inezgane-Aït Melloul; and the five Provinces of Chtouka-Aït Baha, Taroudant, Tiznit, Sidi Ifni and Essaouira. In total 236 territorial communes are included in the RBA (DREFLCD-SO, 2019).

In terms of **administrative forest division**, the DREFLCD of the South-West (i.e. DREFLCD-SO) manages 82% of the RBA and the DREFLCD of the High Atlas manages 18% (see Fig. 40).

⁶³ Agadir, a city with more than half a million inhabitants (known as "Le Grand Agadir" or "The Big Agadir") is the major pole of the RBA. Agadir city and its surroundings have experienced in modern times an economic boom (tourism, fishing, food processing industry, etc.) such that today it exerts a strong influence on an area extending beyond the limits of Souss-Massa. "Agadir, the capital of the South, at the same time has become an area of openness towards northern Morocco and, conversely, the gateway to the southern provinces" (Région Souss-Massa, 2015:2).

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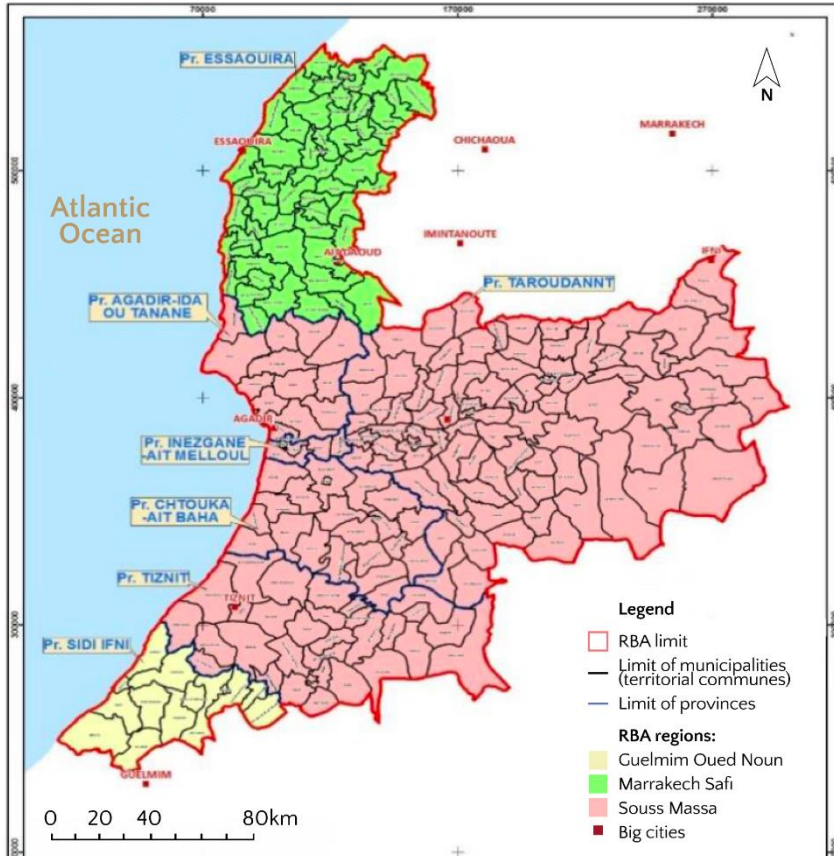


Figure 39: Administrative context of the RBA at present. Marrakech-Safi Region including the province of Essaouira; Souss Massa Region including the Prefectures of Agadir Ida Ou Tanane and Inezgane-Ait Melloul; and the Provinces of Chtouka-Ait Baha, Taroudant and Tiznit; and Guelmim-Oued Noun Region including the province of Sidi Ifni (DREFLCD-SO, 2020).



Figure 40: Forestry divisions of the RBA, under two regional departments: the DREFLCD Sud-Ouest and the DREFLCD Haut Atlas (DREFLCD-SO, 2020).

1.2.1. LANGUAGE AND DEMOGRAPHY

Ethnically, the population of the RBA is mostly Amazigh or Arab. Amazigh populations have inhabited the argan forest region since immemorial times, while the Arabs have historically concentrated in the plain areas (valleys and cities). Currently, with social changes and socio-economic evolution, the RBA's society is characterised by high mobility to major urban centres and to the economic capital (Casablanca), with strong historical links to the region (Afker et al., 2019).

Arabic has been the official language in Morocco since 1956. Yet, since 2011 Amazigh has become a co-official language in the country, spoken by the 26% of the population in the country (HCP, 2014)⁶⁴. French is still taught as a first foreign language and it is very often used in the administration, medium and high socio-economic classes of Morocco. Last years, English is starting to become relevant among high socio-economic classes and a share of youth at university level and private education centres. In the RBA, the most used vernacular languages are Darija (the Moroccan dialect of Arabic, strongly influenced by Amazigh and French) and Tashelhit (the most southern Amazigh dialect). Darija is used by a 68.8% of the RBA population and Tashelhit by a 63.4% (HCP, 2014). Yet, in the rural areas of the RBA territory Tashelhit is used by 72.6% of population and Darija by a 53.3% (HCP, 2014). There are no statistics on the distribution of faith-based groups, however, article 3 of the Constitution provides that Islam is the official religion of the State (Bendella, 2019).

The total population in the provinces concerned by the RBA is more than 3.12 million people in 2014, with **55 per cent of the population living in rural areas** (DREFLCD-SO, 2019; HCP, 2014). In the period 2004-2014, the number of households increased with an increase rate of twice the population growth rate (DREFLCD-SO, 2019), while the population density remained relatively low in 2014 (DREFLCD-SO, 2019).

There exist statistics and estimations of **annual income per household** within the RBA (e.g. in 2016 the annual revenue per household of the region was estimated to be about 35,000MAD); however, because there are still notable income distribution inequalities, namely among those living in the cities and those living in the mountainous area (Afker et al., 2019), those estimations at the regional and provincial level risk to not being representative. The same constraint persists for the analysis of economic activities at the local level, notably rural communes and douars.

1.2.2. SOCIO-ECONOMICS

Given the large extension of the RBA (covering nearly 5% of Morocco) and its diversified territory in terms of resources, the economic activities that are pursued coincide with those generally representative of Morocco. It is a region that supports the national economy, producing 6.4% of GDP and generating 8% of the jobs created at the national level with its three most productive sectors: agro-food (e.g. intensive agriculture, transformation and canning, packaging), tourism and fishing. The area also contributes more than 9% to national agriculture and participates in more than 34.5% of the fishing sector and 17.4% in the hotel and restaurant sector (DREFLCD-SO, 2019:24).

However, the distribution of the economic activities over the regional territory still reflects the existence of **significant disparities** at the level of (i) the different provinces and municipalities (i.e.

⁶⁴ Concerning demo-linguistic data, official statistics are controversial and remain widely debated. Data from the several studies published on language proficiency and Amazigh dialects vary significantly. The estimated proportion of Amazigh speakers in Morocco varies from the 40-45% of Salem Chaker (INALCO, 2011) and Ahmed Boukouss (IRCAM, 2006) to the 27% of the official census, RGPH (HCP, 2014) as noted in Boukouss (2006:80).

collectivités territoriales); and (ii) between rural areas, where the 55% of the RBA population lives, and the urban and peri-urban regions, where the main economic sectors operate (Région Souss-Massa, 2015).

The economy, within the RBA and in the Souss Massa region, is marked by its **export orientation** towards the international market. It is based on the dynamics of exports of agricultural and sea products (including argan oil) as well as the tourism sector (Région Souss-Massa, 2015). In absence of appropriate and comparable statistical data, Table 10 summarizes the main economic sectors for the region (agro-industry, industry, mining, tourism) and those productive sectors which remain relevant sources of income for a large share of rural populations within the RBA despite they are secondary in terms of GDP (argan oil and craft sectors, traditional agriculture and fishing, extensive pastoralism and rural tourism).

RBA main productive sectors	
Sector	Description
Industrial agriculture	The Souss-Massa plain is one of the most developed agricultural areas in the country. The agricultural sector is the cornerstone of the region's economic activity. Modern export-oriented agriculture in this plain consists of intensive irrigated systems inside and outside greenhouses. This industrial agriculture generates considerable foreign exchange earnings, occupies a large workforce and enables the development of the food industry. The agricultural sector accounts for 13% of GDP, i.e. 5.3 MDHs.
Industry	The industrial sector occupies the second position in the regional economy by its importance. It mainly concerns the processing industries of the agro-food sector (essentially the valorisation of agricultural and fish products), chemical and para-chemical industries, metallurgy and mechanical engineering, textiles and leather and electrical and electronics. However, the distribution of activity at the regional level reflects, once again, a real imbalance in the territory. The Agadir agglomeration alone concentrates 59% of the industrial establishments and 90% of the permanent jobs.
Industrial sea fishing	The industrial sea fishing sector is the third economic asset of the region, due to its role in the development of the industrial and commercial sectors
Mining	Within the RBA, the region of Souss-Massa is a region with a mining vocation, notably in the province of Taroudant). The main mineral and rock deposits exploited are: gold, copper, barite, silver, manganese, cobalt, iron oxide, marble, talc, mica and feldspar. In addition, 128 quarries were exploited in the region in 2012, to produce construction materials. The mining sector is important for employment and foreign exchange earnings that it provides to the country.
Intensive livestock	Intensive breeding is present in the plains of Taroudant and Souss. These are cattle farms for industrial milk production. The goats for which the Arganeraie is the preferred area represent 16% of the goat herd at national level, followed by cattle and sheep.
Tourism industry	The tourist sector increasingly considered as strategic for the economic development of the main urban areas of the RBA; an activity that employs more than 120,000 people. The city of Agadir accounts for almost 73% of the region's tourist offer. The tourism industry linked to the two main tourist poles of the country (Marrakech for the Essaouira province and Agadir for the Souss Massa region), offers a varied range of types of tourism: seaside tourism, spa and surf, cultural tourism and tourism of mountains and oases, landscapes, culture and adventures (hiking, trekking, gorges, etc.).
Craft sector	The craft sector plays an important role at the economic and social level in the RBA, as one of the complementary assets of the local tourist product. This sector employs a large workforce and generates significant income. It reflects the cultural richness of the area and contributes to its influence with products that reflect the Amazigh way of life and traditions. The main craft activities are: leatherwork (tannery), pottery, copper and silver work, cabinet making, carpets, marquetry, basketry (raffia) or weaving.
Argan oil	The exploitation of the argan forest and the manufacture and export of argan oil is becoming increasingly important in the regional economy. Activities of the rural populations living in the regions covered by the RBA are strongly concentrated around the manufacture of Argan products (mainly cosmetic and edible argan oil). However, most income is based on this activity for only a minority.
Traditional agriculture	In addition to the extensive cultivation of cereals, the RBA territory is marked by the presence of important traditional agriculture, in mountain rural areas (frequently under the argan trees and around the villages) and oases with a specific cultivation system. Local and niche products like saffron, dates, henna, roses or argan, constitute an important local source of revenues for local populations in the RBA rural area

Extensive pastoralism	Extensive livestock farming is widespread in the RBA rural area. It constitutes one of the most important sources of income for rural populations, as a complementary activity to agriculture in the region, especially in the areas with limited potential for cultivation (mountainous areas where it is the mainstay of the entire rural economy).
Traditional fishing	Traditional fishing activity also exists but has no statistical relevance, despite being a relevant source of income for some small coastal villages within the RBA.
Rural tourism	Rural tourism within the RBA is becoming an incipient sector in mountain areas. Its development is supported by the Regional Council of Souss Massa and other institutions through the creation and support of the Rural Tourism Development Network (RDTR) and the Rural Development Society with a focus on tourism (SDR). The RDTR supports small and medium enterprises includes more than 50 structures and are currently spread throughout the RBA territory.

Table 10: RBA main productive sectors. Sources: Afker et al. (2019), DREFLCD-SO (2019), Région Souss-Massa (2015).

1.2.3. CULTURAL HERITAGE

The Argan tree has conditioned the culture and customs of the native populations of the RBA since ancient times. “Of all the forest and fruit species in Morocco, the argan tree is certainly the most deeply rooted in the traditions and customs of the native populations” (Kenny, 2007:21). Being straddled between the High Atlas and the Anti-Atlas, the RBA area presents an undeniable variability in terms of cultural and heritage capital, as attested by the following assets (Afker et al., 2019).

MATERIAL ASSETS: Prehistoric sites (dating back to the Palaeolithic and Neolithic periods). **Collective granaries (*Igoudar*)**, which are forms of fortresses located on a steep place with difficult access used to store crops and family possessions. Chtouka-Ait Baha province is well-known for its *Igoudars*. ***Kasbahs*, *Zaouïas* and *Ksour***.



Figure 41: Kasbah of Taliouine, left (Afker 2019); prehistoric rock engraving in the Jbel Lkest region, right (Afker, 2021).

IMMATERIAL ASSETS: Moussem, which are annual meeting rituals and places of cultural discovery of ancestral traditions. Still alive today a hundred *moussem*. **Artisanal know-how:** Mats, pottery, jewellery, babouches characterise the RBA region and reflect the diversity of local trades. Essaouira, Tiznit and Tafraout stand out for this know-how. **Argan tree-related know-how and management in *agdal*:** both are a major socio-cultural heritage of the RBA, as attested by the inclusion of the Arganeraie in 2014 in the UNESCO Representative List of the Intangible Cultural Heritage of Humanity. Rituals and events are organised around this sacred and legendary tree, showing its central historical role in the local culture and the livelihood of local populations (Afker et al., 2019). **Cultural traditions and folklore:** Folklore in the RBA is a translation of the different facets of local culture and identity. It consists of diverse rituals of dancing, music and poetry, full of symbolic significance and spirituality,

like the "*Ahouach*", the "*Rwaïess*" and the "*Gnaoua*". These rituals offer a valuable showcase of local know-how through the various jewellery, traditional dance costumes and locally made instruments.



Figure 42: Babouches from Tafraout (RDTR, 2017), cedar wood crafts from Essaouira (RDTR, 2017) and folklore from Tiout (RDTR, 2017).

Concerning the **uses of argan tree, fruit and oil**, “the people of south-west Morocco have cleverly integrated this natural resource into their economic and social activities by using local know-how and rudimentary means, which is a testimony to an incomparable and unique genius in the history of the Moroccan rural world” (Kenny, 2007:21). The talent of these people has favoured the development and elaboration of some thirty products and services derived directly or indirectly from argan (as illustrated by Fig. 43) (Kenny, 2007). For thousands of years, the Argan forest has provided the local population with a 100% renewable source of energy (dead argan wood was used as fuel); a highly nutritional oil used for culinary purposes; and fruits and leaves used as fodder for goats (M’Hirit et al., 1998). In this way, as already mentioned, the argan forest has always played a major socio-economic and environmental role.

However, not all current uses of argan date back to antiquity. An evolution that can be summarised in three phases: (1) a discovery phase during which local populations appreciated the virtues of argan products; (2) a small-scale exploitation phase, which lasted several centuries, that can be described as family or subsistence exploitation during which argan was used as a means of subsistence; and (3) a quite recent phase of commercial exploitation first and then semi-industrial exploitation where argan products have acquired a market value (dating from the beginning of the 21st century) (Kenny, 2007).



Figure 43: Types and categories of uses derived from the argan tree. Source: adapted from Kenny (2007).

1.2.4. HISTORICAL EVOLUTION OF THE ARGAN FOREST

According to several authors, the argan tree must have covered a much larger area than it currently does, as shown by the relics found in different regions of Morocco (Boudy, 1950 as cited in Kenny, 2007) evaluated that the biogeographical area of the argan forest covered an area of 3,193,000 ha (2,128,000 ha for the argan tree). The events that have marked the history of the argan forest show that this natural resource has shaped the socio-economic life of southwest Morocco for centuries; at the expenses sometimes of the ecosystem integrity (Fig. 44 shows the most relevant waves of degradation of the arganeraie in recent history). Thus, becoming an emblematic species for the region and for the country and part of its collective memory (Kenny, 2007).

In the past, the uses of the argan tree and forest were more diversified and its exploitation was more rational and less intense. Since mid-2000s and earlier on, various authors warn about the **risks of overexploitation**; among them, Kenny (2007) stated “By pushing the exploitation dynamics further on and in the absence of a programme to safeguard and restore the forest, we take the risk of losing the species and centuries of history-linked tradition. The argan tree has become a victim of its fame”. Indeed, socio-economic changes in rural areas⁶⁵ together with this semi-industrial exploitation of the argan oil, focused exclusively on its high market value, have a deep impact in the multiplicity of local traditional uses and the system resilience.

⁶⁵ e.g. electrification, gas, abandonment of herding activities or impact of argan high prices in local impoverished economies, among others.

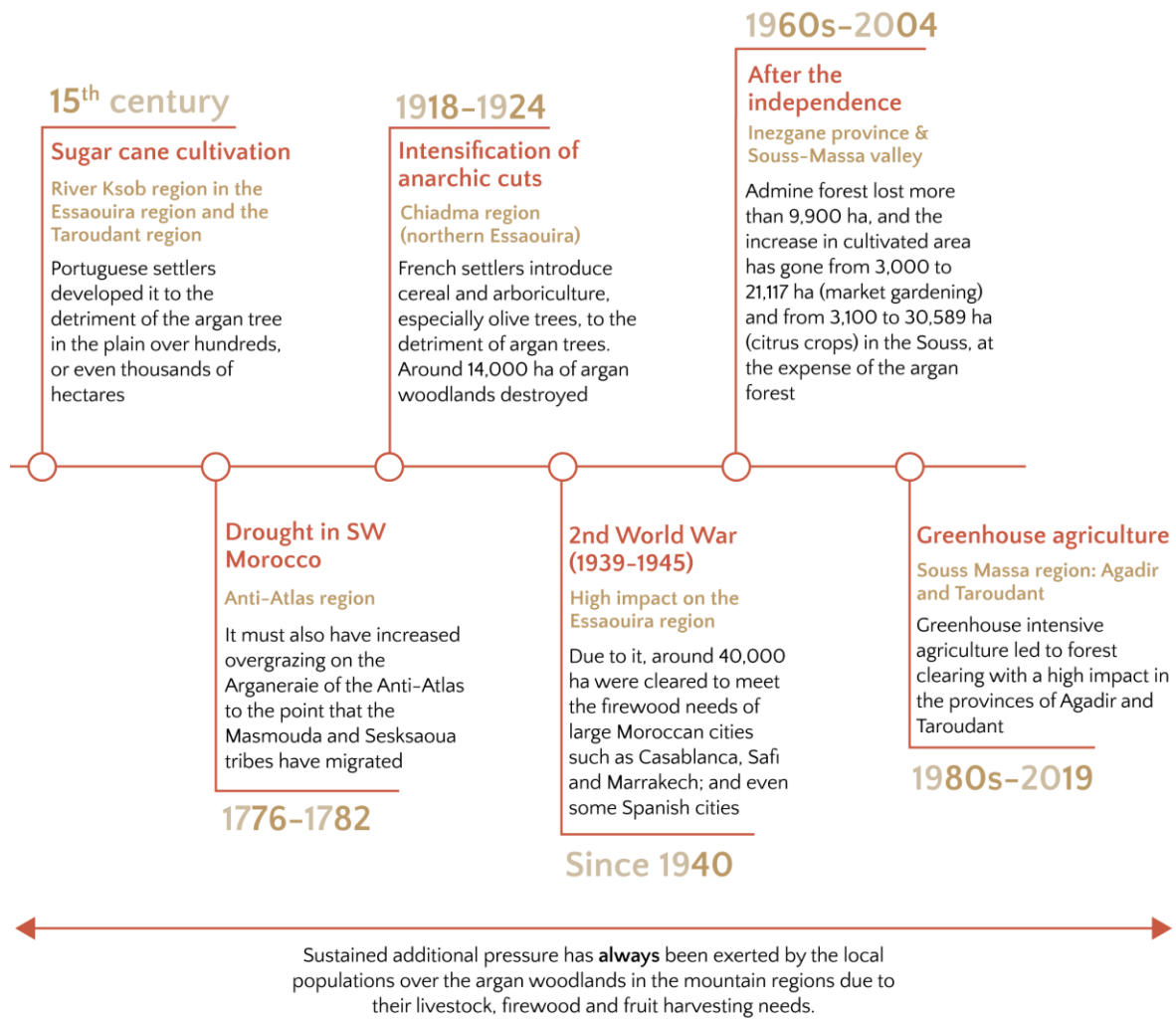


Figure 44: Timeline for the waves of degradation of the arganeraie in recent history. Source: own elaboration.

1.2.5. LEGAL FRAMEWORK

The argan forest plays a major socio-economic and environmental role in Morocco. Hence, its special legislative status (see Fig. 13 in the “conceptual framework”). Even though forests in Morocco are public state-owned since 1917 and some of them have certain use rights dedicated to local populations; the argan forest is the only one with a specific legislation that recognises the singularity of this forest social-ecological system and grants extensive usufruct rights to its traditional populations. The two main texts regarding the argan forest’s specific legislation are the Dahir 04-03-1925 (first legislation regulating the conservation and exploitation of the arganeraie) and the Decree of 1st May 1938 (in application of the Dahir of March 1925), which established the 7 usufruct rights granted to the people belonging to the tribes and fractions traditionally users (usufruct rights-holders). In particular, the seven extended usufruct rights are (Azenfar, 2007; Bouzemouri, 2007):

1. collection of dead wood (for domestic use)
2. fruit harvesting
3. herds' pasture (right of grazing or free course)
4. land use for cultivation (right to plant/cultivate under trees)
5. cutting firewood, coal and service wood
6. cutting branches for enclosures

7. extraction of soil, sand and stone for domestic needs or those of local handicraft

However, when it comes to the RBA, the rural world in Morocco and the national, transnational and customary laws and policies related to them, it is important to highlight that we are dealing with “...a *plural legal constellation in rural Morocco*” (Turner, 2006), not always consistent and sometimes ambiguous, overlapping or even contradictory in practice. The Arganeraie, as a complex and singular social-ecological system is a textbook case of what it means this plural legal constellation. Figure 45 shows just a rough simplified outline.



Figure 45: Mind Map with the plural legal constellation regarding the Arganeraie. Source: own elaboration.

2. ETHNO-ECOLOGICAL CHARACTERIZATION OF LOCAL COMMUNITIES

As mentioned in the methodology chapter, to showcase how different community-level realities and dynamics may perform different interactions with the biosphere reserve and its related institutions, I selected two case study local communities (i.e. villages or douars) attending to the criteria of Table 8 and Fig. 18: douar Tisskji in Imouzzar Ida Outanane, High Atlantic Atlas, and douar Tamejloucht in Chtouka Ait Baha, NW Anti-Atlas mountains. See Figs. 46 and 47 for the general location of both local communities in tribal and administrative maps of the Arganeraie region⁶⁶.

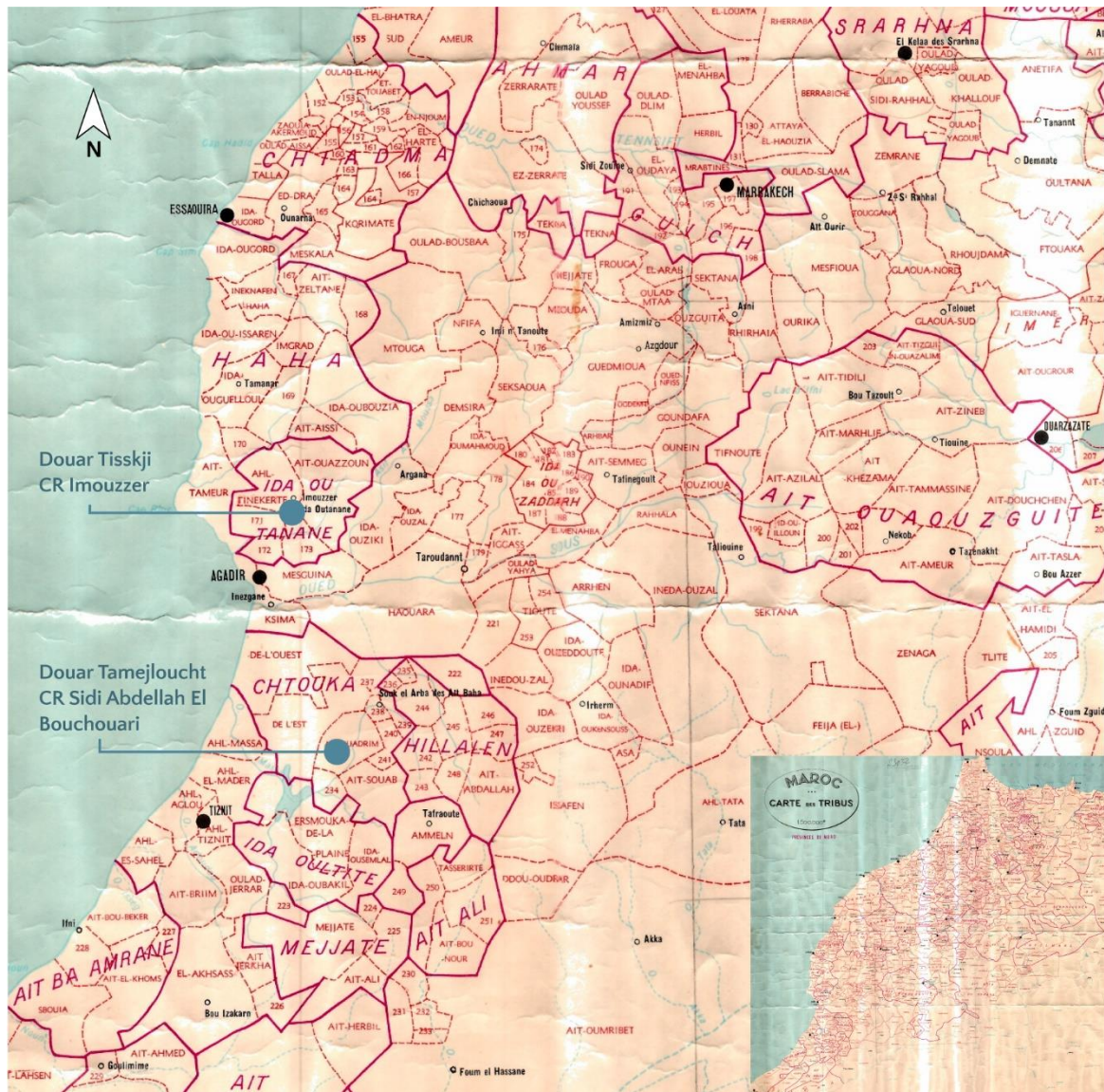


Figure 46: Tribal context (past) including the tribes of Ida Outanane and Chtouka, where the two case study communities are located. Source: Tribus Maroc, Carte 1977.

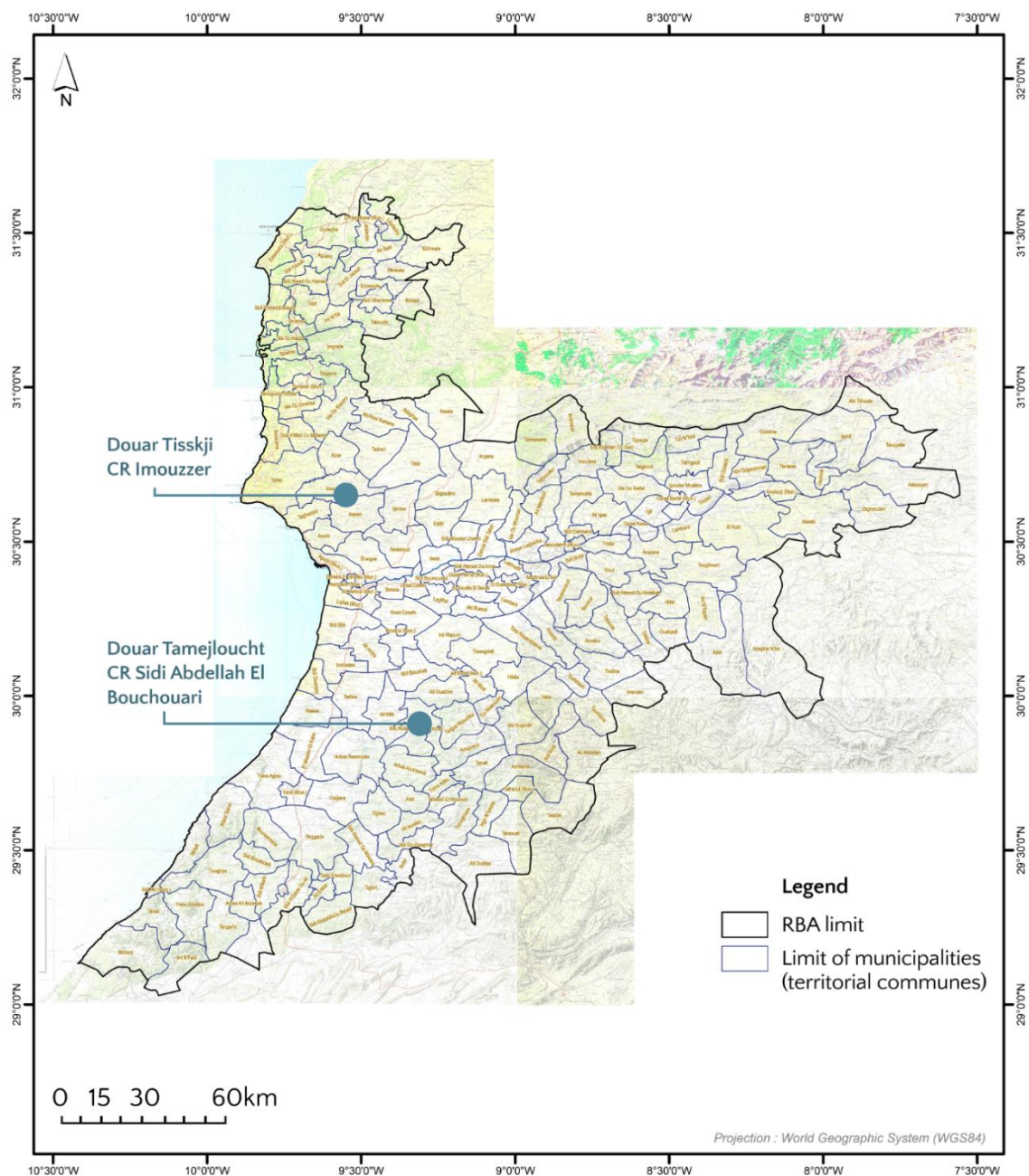
Because the tribal context continues to be relevant at present at the local level, I have considered it in the characterization and analysis of the study area. Moreover, most of the population inhabiting

⁶⁶ Since Morocco's independence in 1956, the territorial and administrative organisation of the study area has no longer been officially aligned with the traditional tribal and ethno-lineage distribution (Bendella, 2019).

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the RBA (mainly in rural areas) may be considered, in one way or another, as native. This sense of identity was reinforced by the episodes of the French and Spanish protectorates (1912-1956), which categorized native populations as 'indigenous' in contrast to the European population settled in Morocco at the time. Rural population was traditionally organised in tribes linked together by a system of alliances (i.e. *leff-s*, *çoff-s*) (Lakhsassi and Tozy, 2000:183-214), and maintaining variable relations with the *Makhzen*⁶⁷ and between them, depending on the region and the period. Alliances between groups generally arose depending on each context's power relations to try to compensate any dominant group.

Regarding the **administrative distribution**, the two selected study sites belong to the Souss-Massa region (see Fig. 47).



⁶⁷ *Makhzen*: State or Government "power".

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Figure 47: Administrative division of the RBA, including territorial communes (rural and urban municipalities). Source: DREFLCD-SO (2020).

Figure 48 shows the general new administrative organisation of the country since 2015, which may clarify further descriptions, analysis and debates presented in the following chapters. It may be informative, not only in the description of local case studies, but also in the results and discussion chapters because of, among others, the national “Advanced Regionalisation” strategy (i.e. decentralization) which is central to various of the current debates regarding land management policies and regional governance schemes, including those linked to the RBA.

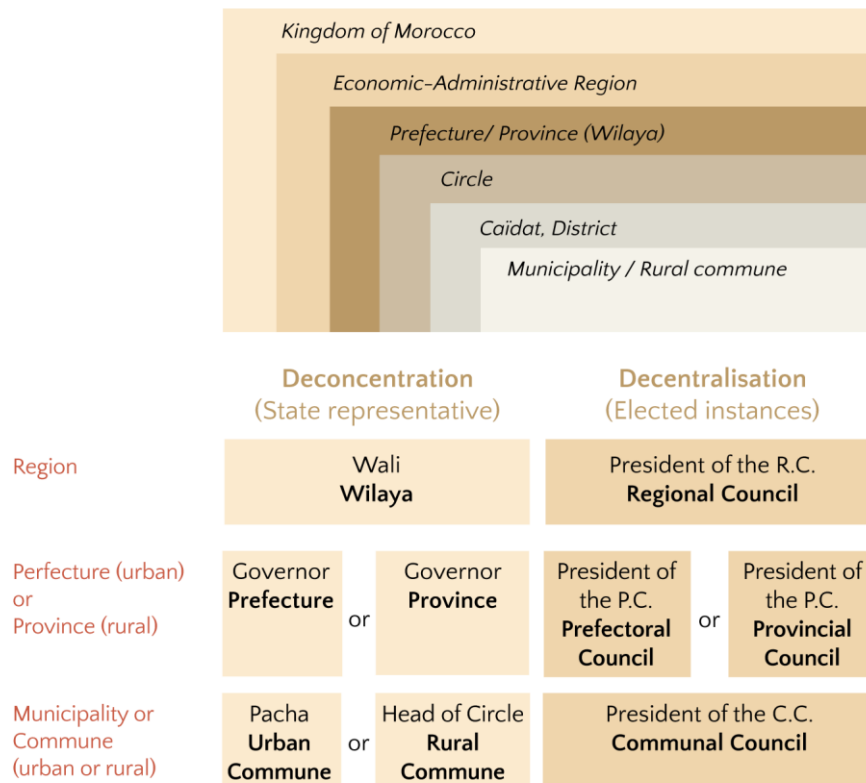


Figure 48: New administrative organisation of Morocco since 2015. Source: adapted from (OECD, 2018).

Before elaborating on the comprehensive ethno-ecological characterisation of each local community, Table 11 presents a brief overview of the most relevant features of both case study sites.

	Tiskji	Tamejloucht
Management/governance model	<i>Agdal</i> practice (argan and olive tree) active; in decline. Recent original model of assembly organisation, governance and local decision-making.	<i>Agdal</i> practice (argan and extensive livestock); in risk of disappearing. Recent official-customary hybrid model of local governance and decision-making.
Extension	<i>Agdal</i> : 293 Ha; Community: 18,600 Ha	<i>Agdal</i> : 424 Ha; Community: 18,200 Ha
Surface protected	100% Arganeraie Biosphere Reserve (RBA) Transition zone	100% Arganeraie Biosphere Reserve (RBA) Buffer zone (Boulbaroud Core area)
Public institutions of conservation	HCEFLCD (Haut-Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification) <u>International figures of conservation:</u> RBA (UNESCO)	HCEFLCD (Haut-Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification) <u>International figures of conservation:</u> RBA (UNESCO)

Official Population data vs Population self-reported by communities	229 inhabitants (HCP, 2014) / 200 inhab. (ADL Imal, 2018)	No disaggregated data (HCP, 2014) / 48 residents, 115 inhabitants ⁶⁸ (ADL & women, 2019)
Rural Commune	Imouzzer Ida Outanane	Sidi Abdallah El Bouchouari
Socio-economic categorization	The main economic sectors are traditional rural agriculture (mainly olive crop and family horticulture), argan harvesting, services, tourism, mobile honey production.	The main economic sectors are extensive subsistence livestock and argan harvesting. Nevertheless, the main family's income comes from emigrants and workers on intensive modern agriculture farms and services in the Souss valley
Ecological characterization	Typical ecosystems in this region are mixed woodlands of argan with cedar and olive trees.	The dominant ecosystem in this area is the argan forest, mixed with Macaronesian scrubland.
Local description of habitats	Local people distinguish between reforested areas close to Imouzzer (by French foresters and mainly with pines), mixed argan forest, palm groves, and cultivated areas (fruit trees, olive trees, crops and orchards). They also point out the waterfalls and rivers.	Local people distinguish between mountainous, plain areas and rivers; then between areas where there are argan trees and those where there are not; and then cultivated plots from open pastoral and forest spaces.

Table 11: Key characteristics of local case study sites: Tiskji and Tamejloucht. Source: own elaboration.

2.1. STUDY SITE: TISSKJI

2.1.1. SITUATION

Geographically located in the High Atlas mountains, Tiskji belongs to a territory strategically placed in an ancient nomads' route crossing the south-western High Atlas mountains towards the north (i.e. towards Essaouira and Safi) by hassaniya dromedary herders. See Figs. 46 and 49 for the location of Tiskji in the tribal location map of the Arganeraie region and within the confederation of tribes of Ida Outanane, respectively. This emplacement and this fact, has influenced some of its historical, economic, social and cultural dynamics. See Fig. 54A and 54B for a general view of the landscape and the village of Tiskji.

⁶⁸ **Inhabitants:** people formally belonging to the douar or village, with a house there and inherited rights over natural resources. Inhabitants include residents plus migrants. **Residents:** Fraction of people among the inhabitants that reside permanently in the douar or village.

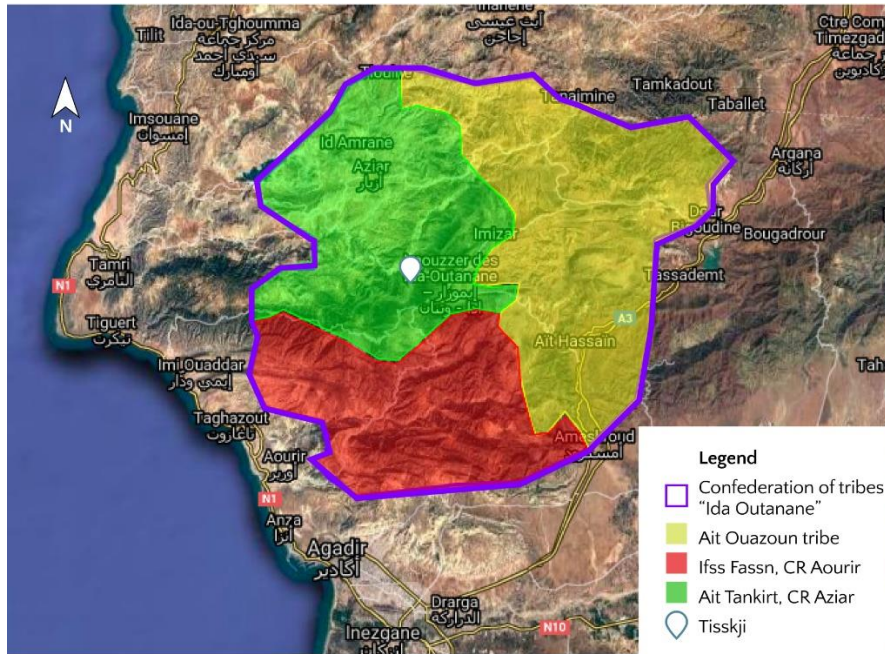


Figure 49: Location of Tisskji within its tribal customary context, namely the confederation of tribes or “Big Tribe” Ida Outanane. Sources: Google Earth and TribusDuMaroc (2020)⁶⁹.

Regarding the tribal context, Fig. 49 shows the location of Tisskji in relation to the Ait Tankirt tribe. The Ait Tankirt tribe is one of the three tribes of the Ida Outanane confederation of tribes which gives name to the region. In absence of any cartographic information overlapping the administrative and tribal contexts, Fig. 50 shows a schema of this overlapping designed based on the information gathered through local interviews.

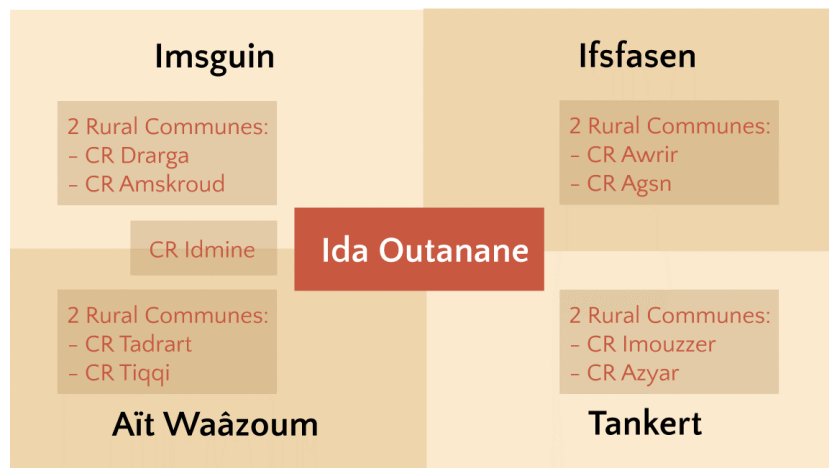


Figure 50: Local Community schema of the tribal context versus the administrative overlapping contexts of the Ida Outanane region and tribal confederation. Source: local interview, October 07, 2018.

⁶⁹ Note: Tankirt is also spelled in different sources as Tinkirt or Tankert. See Glossary of terms in Tashelhit for further details on diverse spellings of terms in Tashelhit within the text.



Figure 51: A and B: Tiskji landscape and douar (village). C: Imouzzer centre village and Caïdat. (Romera, 2018).

Administratively, the douar Tiskji falls within the rural commune of Imouzzer or Imouzzer Ida Outanane, which is the main town or municipality (see Figs. 47 and 51C). Caïdat Imouzzer is divided into four rural communes⁷⁰ in 2013 (i.e. Imouzzer, Tiqqi, Tadrart and Aziar) (see Fig. 52). Surrounding villages to Tiskji are: Tidili, Togro, Timkti, Targa, Tagmit, Ait Oanlla, Lmjdidc (which, we will see, play a relevant role in the community-level governance and sense of place).

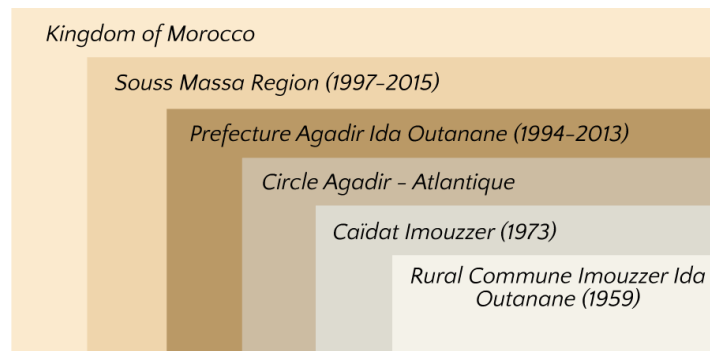


Figure 52: New administrative organisation (since 2015) related to Tiskji. Source: own elaboration.

The commune of Imouzzer comprises 47 douars, with 1,111 households and 5,385 inhabitants (HCP, 2014). Imouzzer Ida Outanane (in the Amazigh local language, Tashelhit⁷¹: Imouzzar Ida Utanan) is a small town located 60 km north-east of Agadir. Imouzzer (*Imouzzar*) is the plural of the word "amazzer" which means waterfall in Tashelhit (Oulhadj, 2014).

2.1.2. BIOGEOGRAPHICAL AND ECOLOGICAL CONTEXT

The territory of the rural commune of Imouzzer covers an area of 186 km² and is located at an altitude of 1,250m (Chbani, 2006). Its centre dominates a wide valley occupied by a mountain palm grove. Highest and lowest points in meters above medium sea level: Highest point 1,229 MASL; Lowest point 723 MASL.

The Imouzzer Ida Outanane region has a semi-arid **climate** and an average rainfall that varies between 120 and 400 mm per year (Fig. 36). It is of 386 mm for Imouzzer and 322 mm for Tiskji. The average temperature for Imouzzer is 13.2 °C throughout the year. Which varies by 12.2 °C approx. between

⁷⁰ Four rural communes: Imouzzer (233 km²), Tiqqi (263 km²), Tadrart (205 km²) and Aziar (198 km²) (Chbani, 2006).

⁷¹ In French sources the language is called tachelhit, chelha or chleuh. While in English source it may also be spelled as Tashelhiyt.

the hottest month (August; 25.2 °C max. average) and the coldest (January; 7.3 °C min. average). It is of 15,3 °C for Tisskji⁷².

Imouzzer Ida Outanane is known for its travertines built on the successive waterfalls of a tributary of the river n'Aït Oualla, high branch of the Tamri river. These waterfalls are due to the close crossing of an anticlinal zone where the calcareous and dolomitic formations of the Late Jurassic dominate (Ambroggi, 1963).

The **vegetation** of the region is very rich and varied: argan tree (*Argania spinosa*), olive tree (*Olea europaea*, *O. maroccana*), juniper (*Juniperus phoenicea*), thuja (*Tetraclinis articulata*), holm oak (*Quercus rotundifolia*), acacia (*Acacia gummifera*), lavenders (*Lavandula maroccana*, *L. dentata*, *L. stoechas*, *L. multifida*), thymes (*Thymus leptobotrys*, *T. saturejoides*, *T. broussonetii*), doum (*Chamaerops humilis*), and medicinal plants mainly. There are 25 species of **mammals**: crested porcupine (*Hystrix cristata*), European otter (*Lutra lutra angustifrons*), common genet (*Genetta genetta*), striped hyena (*Hyaena hyaena*), Barbary sheep (*Ammotragus lervia*), Barbary squirrel (*Atlantoxerus getulus*); 72 species of **wild birds**: Bonelli's eagle (*Aquila fasciata*), golden eagle (*Aquila chrysaetos*), Egyptian vulture (*Neophron percnopterus*), peregrine falcon (*Falco peregrinus*), Eurasian blackbird (*Turdus merula*), Tristram's warbler (*Sylvia deserticola*), etc.; and 20 species of **reptiles**: cobra (*Naja haje legionis*), Mauritania tarantella (*Tarentola mauritanica*), common chameleon (*Chamaeleo chamaeleon*), lizards (*Lacerta andreanszkyi*, *Acanthodactylus sp.*, *Timon tanginatus*) and vipers (*Vipera monticola*, *Vipera sp.*) among others (Abaouss, 2021; Chbani, 2006).

Landscapes and natural sites:

The town of Imouzzer is the centre of the Ida Outanane confederation of tribes, known as "the city of white houses" (TribusDuMaroc, 2020). The numerous natural sites, picturesque landscapes, natural and cultural resources of the region explain its touristic relevance nowadays. Among the most relevant natural sites are the following ones: Paradise Valley; Assif El Had (river); Inzerki (ancient collective apiary; the largest traditional apiary in the world); bride's veil waterfall; Win Timdowin cave (the biggest in Africa; a major place for speleology). And two picturesque rural landscapes: (1) between Imouzzer and Assif El Had, including a geological folding (cave); and (2) the Inzerki apiary road, well known for the high plant diversity (including that of its mountain melliferous flora) (Chbani, 2006).

Inzerki is a small Amazigh village on the border of three tribes, Haha, Ida Ou Ziki, and Ida Outanane. This village has the largest traditional apiary in the world. The apiary of Inzerki is collective, managed by several surrounding villages, 10 hives is the maximum allowed per owner. The Inzerki apiary dates back to the beginning of the 19th century (TribusDuMaroc, 2020).

⁷² In Tashelhit the word "Tisskji" refers to the action of hatching, referring to the geomorphological enclave of the village and the mild climate of its micro-environment.



Figure 53: Landscapes and natural sites. A & B: Inzerki, the largest traditional and collective apiary in the world (Romera, 2017). C: Cave Win Timdownin. (Romera, 2017). D: Paradise Valley (Romera, 2018).

2.1.3. ADMINISTRATIVE AND SOCIAL CONTEXT

The total **population** of the rural commune of Imouzzer (HCP, 2014) is of 5,385 inhabitants (2,593 men and 2,792 women). For the douar Tisskji, the local community study site, the official data are shown in Table 12, while the permanent population reported by its local representatives in 2018 is of 200 inhabitants approx. (ADL Imal, interview, September 30, 2018).

Douar grouping/ Douar ⁷³	Source	N. inhabitants	N. households	N. Women	N. Men	N. Youths
Tisskji	IMAL2018	200	70	110	70	20
<i>Almachyakha-Tisskji</i>	HCP2014	229	47			
<i>Almachyakha-Timkti</i>	HCP2004	193	41			
Tribe fraction- Imgatti	HCP1994	207	42			

Table 12: Demographic evolution in Tisskji (1994-2018). Sources: HCP and ADL Imal.

Regarding **public infrastructures** for Tisskji, there is no public transport and private transport includes “petit taxi”, “grand taxi” and “bus”. There is one public health centre and one middle school in

⁷³ **Note:** official population censuses have historically considered slightly different spatial subdivisions depending on a variety of factors. So, for the HCP, in 1994 Tisskji was included in the tribe fraction Imgatti, in 2004 in the douar grouping or tribe fraction (i.e. Almachyakha) Timkti, and in 2014 in the douar grouping or tribe fraction (i.e. Almachyakha) Tisskji.

Imouzzer (for all the region) and one primary school in each village or douar. In Tisskji there is one primary school (from 5 to 11 years old) (ADL Imal, interview, September 30, 2018). According to official data for 2013 (Wilaya Souss Massa Draa, 2013:97), Imouzzer has 5 public health facilities in the caïdat: 1 CSCA (Community Health Centre with Childbirth); 2 CSC (Community Health Centre); 2 DR (Rural Dispensary)⁷⁴.

Economic activities: Agriculture is the main income-generating activity in the region, despite low and poorly distributed rainfall and scarcity of arable land. Fruit trees, almond and olive trees in particular, cover an area of 3,284 ha, vegetable crops 61 ha, cereals 2,914 ha, and other crops 105 ha (Chbani, 2006). Despite not being an economic activity, migrant revenues and other economic revenues from family members are a relevant source of income for many households in the region. See Table 13 and Fig. 54 for further detail on local economic activities and self-assessed sources of income.

Tisskji main productive activities		
Sector	Activity	Description
Agriculture	Argan oil	Argan oil production and commercialisation.
	Olive oil	Olive oil production and commercialisation. Argan and olive oil are the main economic activities of the area.
	Traditional agriculture	Secondary agriculture activities carried out in the area include fruit trees (e.g. date palm, carob tree, pomegranate) and cereal (wheat and barley) mainly
Services		Other economic activities carried out in the municipality include services, construction and commerce mainly. In these activities people are self-employed (e.g. commerce) or mostly day laborers (e.g. some services and construction).
Tourism	Rural tourism	Main tourist activities are focussed on accommodation and restaurants (2 hotels, 4-5 informal apartments to rent and 3 restaurants in Imouzzer). There are also some informal tourist guides. However, most income from tourism in the area is captured by agencies in Agadir city.
Other	Livestock	Livestock farming is a complementary activity in the region, mainly made up of goats and sheep. Regarding the stock breeding or traditional pastoralism, it has almost disappeared in the study area (although it still exists in other areas of the Tankirt region (Ida Outanane tribe). In Tisskji, sheep and goat livestock have almost disappeared, and families currently raise chicken and rabbits mostly.
	Beekeeping	Imouzzer Ida Outanane is an outstanding beekeeping region. Annual honey production is estimated at around 120 tonnes. This typical local product plays an important role in the economy of the hilly and mountainous areas. The region, which is well known for the diversity of its mountain melliferous flora, produces the best thyme-flavoured honey in the country. It is also home to one of the oldest collective and the world's largest apiary: Inzerki's apiary (see Fig.53A and 53B). However, due to the extremely high variability and dependence on yearly climatic conditions, it remains just a complementary source of revenues.

Table 13: Tisskji main productive activities. Sources: local interviews (October, 2018) and Chbani (2006).

⁷⁴ **CSCA:** Centre de Santé Communale avec accouchement. **CSC:** Centre de Santé Communale. **DR:** Dispensaire rural.

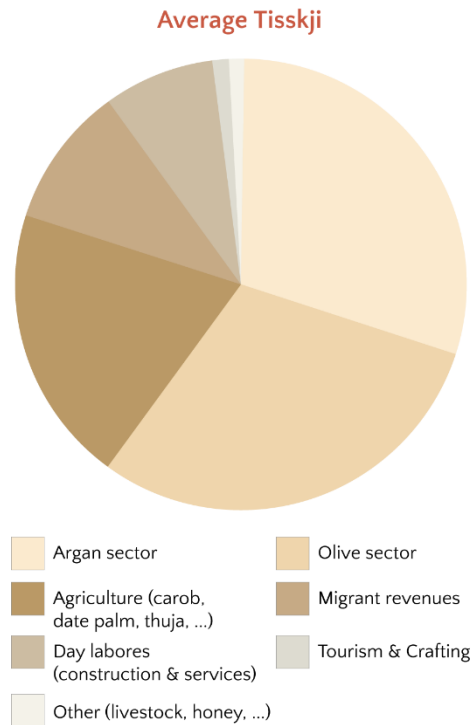


Figure 54: Local community' self-assessment of the main economic activities and sources of income. Source: local interviews, October 2018.

2.1.4. RELIGIOSITY AND CULTURAL IDENTITY

Islam is the main **religion**, although it is highly influenced by Amazigh (Berber) cultural and religious-related traditions and beliefs.

The main **religious festivities** are the two Moussem of Tighanimine honouring the saint Sidi Brahim Ali in May and October. They are the two annual "grand Moussem" of the tribe Tankirt (to which Tisskji belongs). They honour the same saint. It is a big region, so the families of one half of the region organise the one in May and the families of the other part of the region the one in October. The one in May is the most important and numerous, among others, because it is the one organised by the families close to the place where the sanctuary is. In both Moussem the dynamic is the same: a souk where people meet and religious rites honouring the saint (including the sacrifice of a cow) take place (see Fig. 55).



Figure 55: Moussem of Tighanimine honouring the saint Sidi Brahim Ali (Romera, 2018)

The relevance of these traditional festivities from the point of view of local, customary governance lies in the fact that it is where relevant political issues (at the tribe-level) are discussed and resolved. So, the Moussem of May and October are traditionally the two moments a year to resolve issues at the level of the entire tribe. At a more local level, each douar or village has its own religious festivity⁷⁵.

The most singular element of **local identity** is the *agdal*, together with the rest of Argan, practices and know-how concerning the argan tree (see Fig. 56A and 56B). All the religious and agro-pastoral festivities linked to the Amazigh tradition are also central elements of the local and cultural identity. Identity in the *agdal* is mostly linked to patrilineal lineages, according to the tribe concerned; in this case, the tribe Tankirt.

Regarding the **gender division of labour** and other tasks or social roles within the *agdal*, traditionally women harvest argan nuts, take them in big bags to "meeting points" (for men to transport them in donkeys and/or cars) and produce argan oil (high labour-intensive and time-consuming task). While men prune and maintain argan trees, transport the nuts from the forest to the villages and souks and commercialise either the fruits, the almonds or the argan oil manufactured by women.

Another relevant and more recent **cultural event** is the honey festival organised every year in Imouzzer, in August. A final element of **cultural identity** that has nevertheless practically disappeared in a few years is the art of draping (see Fig. 56C). Traditionally, the women of Ida Outanane, like their neighbours of the Ihahan, wore the haik (in Amazigh: tahaikt). As for men, as everywhere in Amazigh territory, they wear the djellabah (in Amazigh: tajellabit) (Damgaard, 2008).



Figure 56: Elements of local and cultural identity in the Imouzzer Ida Outanane region. A & B: Practices and know-how concerning the argan tree (Romera, 2018). C: Traditional costume, Djellabah, fine rayon fabric in wool and cotton. Photo by (Damgaard, 2008).

⁷⁵ For Tisskji the two relevant religious festivities are the Moussem of Tisskji honouring the saint Sidi Lhash Mhand Oubrahim in August and the Moussem of Aziar, honouring the saint Sidi Said Tanani Drkaoui at the end of September.

2.1.5. TRIBAL AND COMMUNITY HISTORY

Imouzzer Ida Outanane ⁷⁶(Imouzzer des Ida-Outanane, *Imuzzar n Id aw Tanan*) takes its name from the big waterfall in its territory and the tribe Ida Outanane who have populated it since ancient times⁷⁷. Imouzzer is the centre of the confederation of tribes Ida Outanane.



Figure 57: Cascade d'Imouzzer or Bride's veil waterfall («le Voile de la mariée»), douar Tamarout. Photo by Terrier Michel, 2010.

Like the vast majority of the tribes in the Souss region (Morocco), the Ida Outanane are a confederation of tribes consisting of sedentary Imazighen/Ishelhin⁷⁸ peoples, settled on the high plateaus overlooking the sea, a mountainous region at the extreme west of the High Atlas (north of Agadir city), who speak Tashelhit (Gaudefroy-Demombynes, 1933). As illustrated in Fig. 49, **the Ida Outanane confederation comprises three tribes** of the Masmouda branch⁷⁹ (TribusDuMaroc, 2020): Ait Tankirt, Ait Ouazoun and Ifss Fassn⁸⁰.

Historical writings make frequent references to the independent character of the Ida Outanane tribe (Jackson, 1811; Segonzac and Gentil, 1910) and its rebellion against the *Makhzen* (Rabii, 2017; TribusDuMaroc, 2020). In 1910s, the French and the *Makhzen* considered the Ida Outanane tribe part of the territories called "*Bilad as-Siba*" (in Moroccan Darija dialect: region of anarchy) (Outachfit, 2010). The Ida Outanane confederation of tribes is one of the last ones in Morocco to have been officially subjected to the *Makhzen*⁸¹, and only with French military aid in January 1928 (Lahnite, 2011; TribusDuMaroc, 2020).

⁷⁶ **Toponymy:** Imouzzer (in Latin Amazigh script: *imuzzar*) is the plural of the word "*amazzer*" which means waterfall in the Amazigh language, while Ida Outanane people are an Amazigh confederation of tribes of the Souss region. *Imuzzar n Id aw Tanan* therefore means "Waterfalls of the Ida Outanane" (see Fig. 57).

⁷⁷ The ancient origin dates back to a time prior to the Xth century.

⁷⁸ **Imazighen** (sing. m. Amazigh; sing. f. Tamazight); **Ishelhin** (sing. m. Ashelhi; sing. f. Tashelhit).

⁷⁹ **Masmoudas** (in Amazigh: *Imasmouden*) "form one of the three large Amazigh groups (together with the Izenaten and the Isenhadjen). It is a large confederation native of the High Atlas in Morocco and the regions surrounding it. They are the founders of the Almohad and Hafsid dynasties in North Africa. Among the large tribes belonging to this confederation are the Ida Outanane, ..."

⁸⁰ Ifessassen (i.e. Ifss Fassn) is the name of the local forest too.

⁸¹ Several reasons were behind the difficulty to subjugate the Ida Outanane confederation. The difficult relief but also the solidarity of its tribes and their social systems based on solidarity and governance of tribal affairs to protect and avoid the risk of conflict.

The tribes of the Souss region offer an insightful example of the harmony of tribal structures and its relevance today for governance and resilience. This is so because all these tribes have almost the same general construction which is governed by the same relational constructions horizontally and vertically (Rabii, 2017). In this sense, Robert Montagne (1929), as cited in (Gaudefroy-Demombynes, 1933), showed how tribal structures and, sometimes precarious, alliances succeeded to face external menaces (such as the power of the sultan and his Makhzen) by being reassembled under the rule of a random tribal chief, but without losing anything of their local customs, nor their taste for independence.

TRIBE TANKIRT

The ancestors of current inhabitants of Tisskji belonged to the territory and the tribe Ait Tankirt. Most interviewees consider themselves from Tankirt as a community in the wide sense.

The tribe Tankirt, it is composed of several different groupings of douars or fractions which come from six descendants (*Ikhssan*) according to the 1924 census (A. Afker, personal communication, April 21, 2020). Most of the douars geographically close to Tisskji belong to one of these six fractions.

Furthermore, there are two tribal local authority figures: (i) the *Cheikh* at the tribe level; and (ii) the *Mokadem* at the douar and/or tribe fraction level. While the official local authority is the Caïd (dependent from the Ministry of Internal Affairs). In Tankirt region there are 3 *Cheikh*.

Despite the tribal context may enlighten the local sense of belonging, peoples character or spatial issues; for understanding current local governance is relevant to consider which are the times of shock in recent local history. Figure 58 illustrates the timeline for the most relevant key dates and periods in Tisskji and its region (i.e. South-western High Atlas).

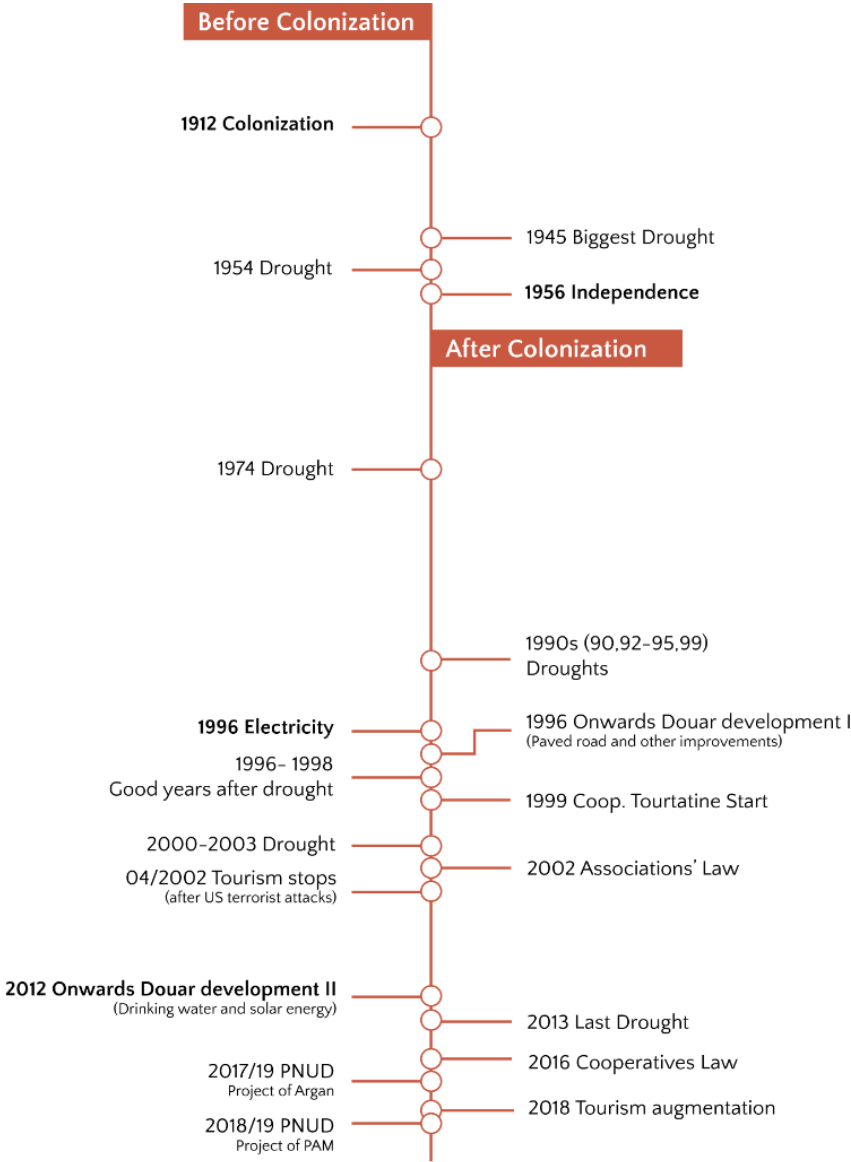


Figure 58: Timeline for the most relevant key dates and periods in the community/region (Tisskji/South-western High Atlas). Times of shock in recent history. Source: Own elaboration from local interviews.

2.2. STUDY SITE: TAMEJLOUCHT

2.2.1. SITUATION

Located in the North-west of the Anti-Atlas mountains, Tamejloucht belongs to a territory strategically placed in the foothills between the Anti-Atlas mountains and the plain of Chtouka (Souss Valley). See Figs. 46 and 59 for the location of Tamejloucht in the tribal location map of the Arganeraie region and within the confederation of tribes of Chtouka, to which it belongs. This emplacement has strongly determined many historical, economic, social and cultural dynamics of the douar⁸²; in addition to its geological and ecological configuration as a bordering territory too. See Fig. 61 for a general view of the landscapes and the village of Tamejloucht.

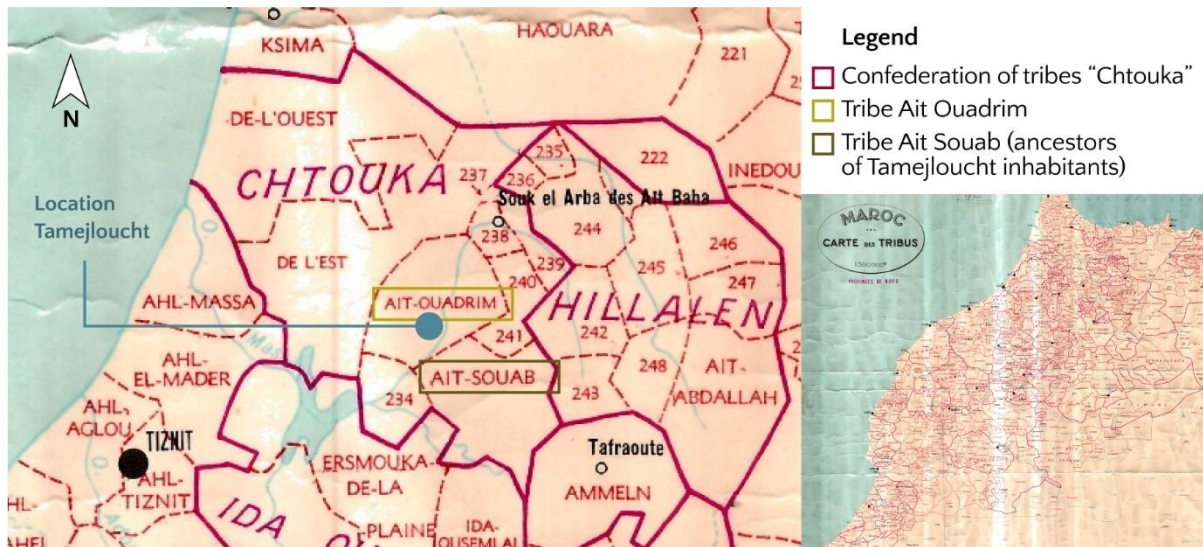


Figure 59: Traditional tribal customary context. Source: Tribus Maroc Carte 1977.

Regarding the tribal context, Fig. 59 shows the location of Tamejloucht in relation to the Ait Ouadrim tribe (whose area equates that of the Caïdat Ait Ouadrim) and to the Ait Souab tribe. The Ait Souab tribe, as we shall see later on, is the origin of the ancestors of Tamejloucht's inhabitants.

In absence of any cartographic information overlapping the administrative and tribal contexts, Fig. 60 shows a schema of this overlapping designed according to the information gathered through local interviews.

⁸² As any other foothill village in a country or region which has swift from an agro-pastoral society to an increasingly urbanised society with an export-oriented economic model.

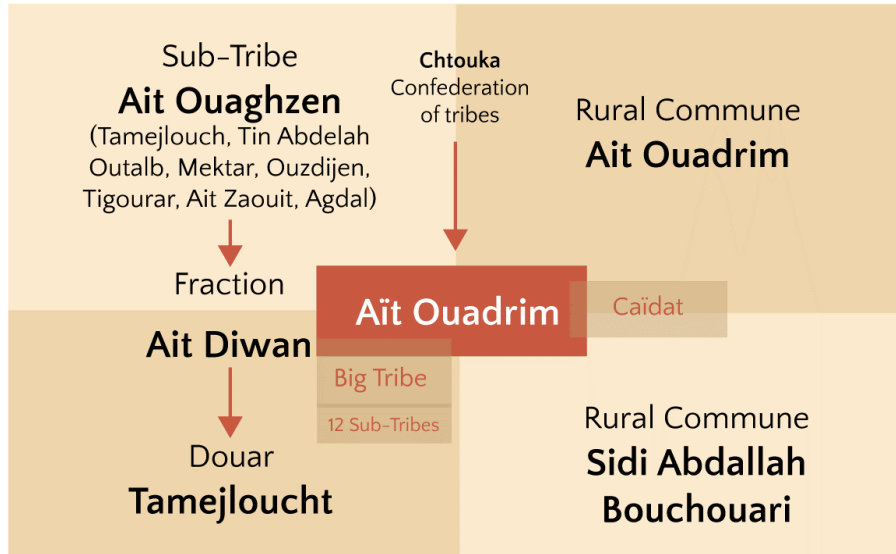


Figure 60: Local Community schema of the tribal context versus the administrative overlapping contexts of the Ait Ouadrim region and tribal confederation. Source: ADL Tamejloucht, interview, January 09, 2019.



Figure 61. A: Douar Tamejloucht (Romera, 2019). B: Satellite image of Tamejloucht’s location in the border between the Anti-Atlas mountains (East) and the Chtouka plain (West) (Google Earth). C: Landscape of the Chtouka plain from the douar (Romera, 2019). D: Landscape of the Anti-Atlas mountains from the douar (Romera, 2019).

Administratively, the douar Tamejloucht falls within the rural commune of Sidi Abdallah El Bouchouari; one of the two rural communes into which the Caïdat Aït Ouadrim was divided in 1992⁸³ (see Figs. 47 and 62). The main town or municipality, administrative centre of the Caïdat, is Ait Ouadrim. Nevertheless, at present, it is Biougra (the head of the province, located in the plain of Chtouka) who acts as the main economic and health centre of the whole region though (local interview, January 26, 2019). Surrounding villages to Tamejloucht, within the Taqbilt⁸⁴ Ait Ouaghzen, are: Mektar, Ait Zaouit, Agdal, Ouzdijen, Tigourar, plus other 11 taqbilts nearby.

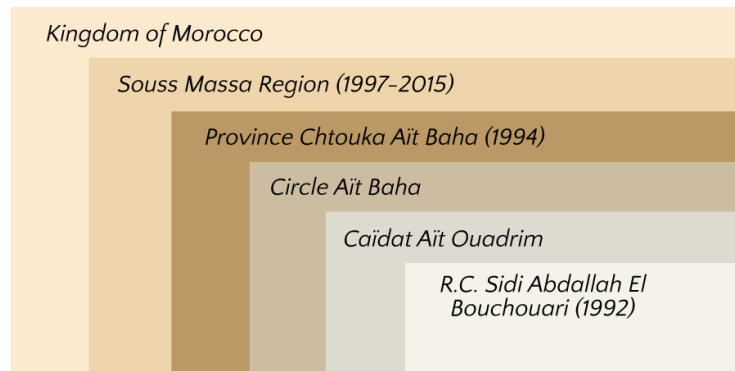


Figure 62: New administrative organisation of Morocco since 2015. Source: own elaboration.

The commune of *Sidi Abdallah El Bouchouari* consists of 135 douars (local interview, January 10, 2019), with 1,764 households and 8,079 inhabitants (HCP, 2014). It borders the rural communes of Aït Milk, Sidi Boushab, Ait Ouadrim, Targa n Touchka, Aouguez; and Arbaa Ait Ahmed, on the Tiznit province.

2.2.2. BIOGEOGRAPHICAL AND ECOLOGICAL CONTEXT

The territory of the rural commune of Sidi Abdallah El Bouchouari covers an area of 182 km² and is located at an altitude <400 m on the northwest slope of the Anti-Atlas mountains bordering the plain of Chtouka (Souss Valley). Highest and lowest points in meters above medium sea level: Highest point 475 MASL (Targa N'Touchka); Lowest point 314 MASL (Tamejloucht).

The Ait Ouadrim region has an arid **climate** (Saharan with temperate winter). There is little rainfall at any time of the year, with an average rainfall that varies between 150 and 250 mm per year (Fig. 36). It is 214 mm for Biougra, 218 mm for Ait Ouadrim and 187 mm for Tamejloucht (Ait Milk). Ait Ouadrim has an average temperature of 18.4 °C throughout the year. Which varies by 11-13 °C approx. between the hottest month (August) and the coldest (January). It is 19.3 °C for Biougra and 19.5 °C for Tamejloucht and Sebt Ait Milk.

The ecosystems represented in the area are characterised by a high floristic and faunistic diversity marked by a singular endemism, the Argan tree. The widely spread **floristic composition** is of sub-Mediterranean series and is essentially composed of: *Argania spinosa*, *Genista ferox*, *Chamaecytisus albidus*, *Withania frutescens*, *Salsola longifolia*, *Ziziphus lotus*, *Periploca laevigata*, *Acacia gummifera*, *Launaea arborescens*, *Bryonica dioica*, *Linaria sagittata*, *Senecio anteuphorbium*. The faunistic diversity includes: Cuvier's Gazelle (*Gazella cuvieri*), a rare and **endangered species; hunting species**

⁸³ Rural Commune of Aït Ouadrim comprising 6 *taqbilts* and Rural Commune Sidi Abdallah El Bouchouari comprising 6 *taqbilts*. Source: ADL Tamejloucht, interview, January 09, 2019.

⁸⁴ *Taqbilt*: sub-tribe or small tribe.

PART 3. STUDY AREA

such as wild boar and hare (mammals) and perdrix gabra (*Alectoris barbara*), common quail (*Coturnix coturnix*), goshawks and turtle doves (birds); **carnivores**: ratel (*Mellivora capensis*), mongoose ichneumon (*Herpes ichneumon*); **birds**: The white stork (*Ciconia ciconia*), perdrix gabra (*Alectoris barbara*) and the common quail (*Coturnix coturnix*); marbled teal (*Marmaronetta angustirostris*), long-legged buzzard (*Buteo rufinus*), common kestrel (*Falco tinnunculus*), peregrine falcon (*Falco peregrinus*); tawny eagle (*Aquila rapax*), booted eagle (*Hieraetus pennatus*); and **reptiles**: cobra (*Naja haje legionis*), Mauritania tarantella (*Tarentola mauritanica*), chameleon (*Chamaeleo chamaeleon*), lizards (*Lacerta andreanszkyi*, *Timon tanginatus*, *Acanthodactylus erythrurus*, *Acanthodactylus sp.*) and vipers (*Vipera monticola*, *Vipera sp.*), among others (Abaouss, 2021; Chbani, 2006; DREFLCD-SO, 2016; Peltier, 1982).(DREFLCD-SO, 2016; Peltier, 1982)

Landscapes and natural sites:

Despite its location as a bordering territory in the foothills between the Anti-Atlas mountains and the plain of Chtouka, the cultural and territorial identity of Tamejloucht are linked to the Anti-Atlas. Figure 63 shows four of the most representative landscapes of this old pre-Saharan mountain. On top of the identity and natural beauty of the area, the marks of a past intense agrarian civilisation are also translated into original landscapes of innumerable terraces (see Fig. 64) (ANDZOA and FAO, 2018) or the mountain oasis of Targua n'Touchka in which a traditional village stands out near a vast palm grove. Other relevant socio-cultural features, characteristic of the whole region, are the traditional and modern architectural styles of the rural villages and scattered houses in the Anti-Atlas mountains (see Fig. 65). In fact, the modern architectural style characteristic of many of the rural landscapes throughout the Anti-Atlas are a result of a particular urban mentality with deep impact in decision-making (as I will analyse in the results section).



Figure 63: Landscapes and natural sites. A & B: Characteristic argan mountainous landscapes of the Anti-Atlas (Afker, 2019). C: Palm grove and cultures besides the river and Macaronesian vegetation among the argan trees in the Rural Commune of Sidi Abdallah El Bouchouari (Romera, 2019). D: Tafraout granitic argan landscape (Afker, 2019).



Figure 64: Terraces of the Anti-Atlas in the route of Targua N'Touchka (Romera, 2019).

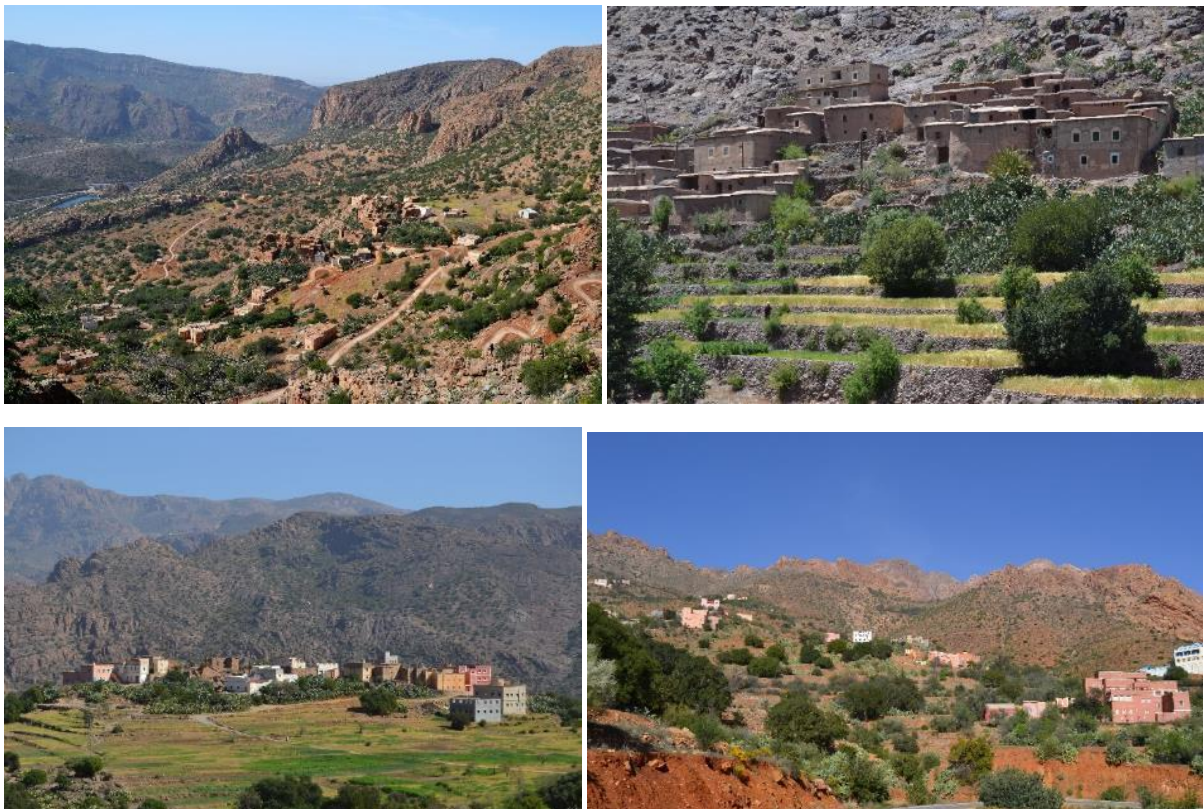


Figure 65: Villages and scattered houses shaping the Anti-Atlas landscapes. A & B: traditional douars (Afker, 2019); and C & D: modern architecture with coloured concrete buildings -characteristic of urban areas- in the Anti-Atlas rural environment (Romera, 2019).

2.2.3. ADMINISTRATIVE AND SOCIAL CONTEXT

The total **population** of the rural commune of Sidi Abdallah El Bouchouari (HCP, 2014) is of 8,079 (3,482 men and 4,597 women) distributed in 1,764 households. The population in Tamejloucht (the local community study site), as reported by its local representatives in 2019, is of 80 inhabitants approx. in total: 36 permanent residents (that is 10-12 permanent resident families) and 15 families coming back during holidays, religious festivities and *agdal* opening (local interviews, January 2019).

At present, it is Biougra (the head of the province) who acts as the main economic and health centre of the whole region though. The second main economic, health, economic and education centre for Tamejloucht is Sebt Aït Milk; administratively situated in a different Cercle and Caïdat but geographically the closest to Tamejloucht, 5 km (ADL Tamejloucht, local interview, 02 February 2019). It is in Sebt Ait Milk where it is the weekly souk and the annual local Moussem.

Regarding **public infrastructures** for Tamejloucht, there is no public transport and private transport includes informal individual and/or collective taxis (only until the point where the paved road ends, 3 km before the douar). There is one small public health centre close to the village, in Sebt Ait Milk (neighbouring rural commune) and the closest emergencies and childbirth services are in Biougra (head of the province) or Inezgane (metropolitan area of Agadir city). Yet, for assistance with snake bites the closest hospital is Agadir city (ADL Tamejloucht, local interview, 02 February 2019). According to official data for 2017 (Ministère de la Santé, 2017), the Province of Chtouka Aït Baha has 35 public health facilities: 2 CSU (Provincial Hospital and Urban Health Centre with delivery units); 9+11 CSR (Rural Health Centre); 13 DR (Rural Dispensary)⁸⁵. As for the public education centres, there is one middle school for all the caïdat of Ait Ouadrim, and no primary school in each village. Tamejloucht has no primary school. Families take children either to Sebt Ait Milk or Mektar for primary school and to Sebt Ait Milk for middle school (much closer than Ait Ouadrim's) (local interview, January 26, 2019).

Economic activities: modern agriculture is the major characteristic of the province Chtouka-Ait Baha. It is considered the agricultural centre of the Souss region due to its 2,010 km² of agricultural land and its economy based on irrigated intensive agriculture export oriented (working mass of 70,000 people). However, for the Caïdat of Ait Ouadrim (mountainous region next to the Chtouka plain) the reality is quite different. In addition, Ait Baha gathers a big cement factory belonging to the *Ciments du Maroc* (a subsidiary of the Italian group *Italcementi*).

In addition, and despite not being an economic activity, migrant revenues and other economic revenues from family members are a vital source of income for many households in the region, as illustrated by Fig. 66. See Table 14 for further detail on local economic activities and Fig. 66 for self-assessed sources of income.

Tamejloucht main productive activities		
Sector	Activity	Description
Agriculture	Argan	The main income-generating activity carried out in the study area includes: <ul style="list-style-type: none"> • Commercialisation of Argan nuts and kernels (through intermediaries). • De-pulping and crushing of argan nuts (the raw material for the argan oil industry absent in the area). • A small artisanal production of argan oil (subsistence) sold in local souks.
	Traditional agriculture	In addition to argan, agriculture carried out in the Caïdat Ait Ouadrim is typically subsistence agriculture. It includes cactus and cereal (wheat, barley) mainly.
	Modern agriculture	There exist recent public investments supporting the "arganiculture" in the douar and also other public investments backing olive trees and aromatic and medicinal plants (PAM) plantations in the Caïdat (of unknown economic returns to present).
Livestock		There exists traditional subsistence pastoralism of sheep and goats (in decline) that is an important complementary source or income in rural areas.
Services	Day laborers	Day labourers and informal jobs mainly related to the intensive agriculture industry in the area nearby (big greenhouses, farms and agro-food industries).
	Commerce	Mainly informal jobs related to the services and commerce sector.

⁸⁵ **CSU:** Centre de Santé Urbain avec accouchement. **CSR:** Centre de Santé Rural. **DR:** Dispensaire Rural.

	Beekeeping	The production and commercialisation of honey in the area is a complementary activity, but it plays an important role in the economy of rural areas because it is an important lever for the households involved (given the price of honey). Ait Ouadrim belongs to a beekeeping region known for producing the best cactus-flavoured honey in the country. While traditional beekeeping is mainly aimed at satisfying family needs for self-consumption, in recent times public investments (e.g. Green Morocco Plan and the national beekeeping programme) have incentivised the honey sector (i.e. providing materials or fostering cooperatives and commercialisation strategies). However, honey production is highly irregular due totally to the rainfall of the year, and despite public subsidies for the modernisation of apiaries.
Other	Tourism	There is no tourist activity in the area (Caïdat Ait Ouadrim or Sebt Ait Milk); and just some in the Ait Baha region (only 2 hotels in the whole province of Chtouka-Ait Baha) However natural and cultural tourist assets exist in the region that already attract national and local visitors. And the area is included in a regional development strategy to foster rural tourism.

Table 14: Tamejloucht main productive activities. Sources: local interviews (January-February 2019), ANDZOA (2017-2018) and ANDZOA and FAO (2018).

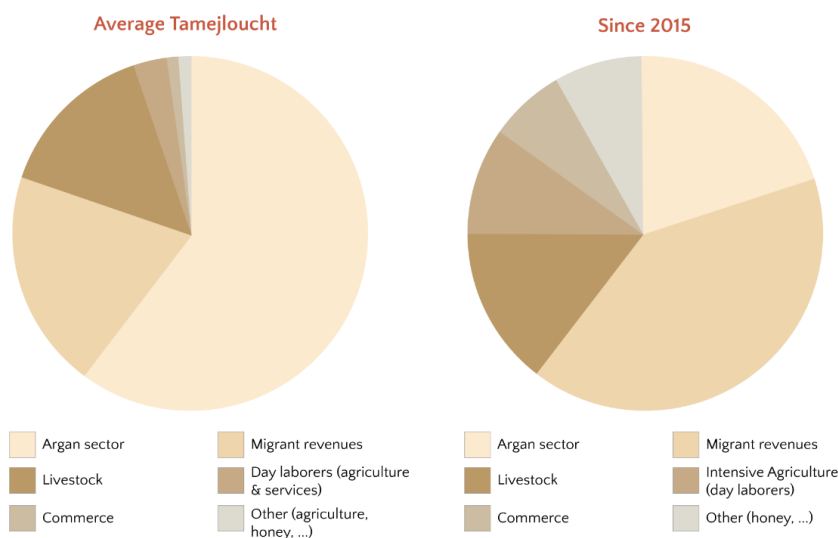


Figure 66: Local community' self-assessment of the main economic activities and sources of income since 2015 approx. Source: local interviews (January-February 2019).

2.2.4. RELIGIOSITY AND CULTURAL IDENTITY

Islam is the main **religion**, although it is highly influenced by Amazigh cultural and religious-related traditions and beliefs.

The main **religious festivities** are the two Moussem of Ait Ouadrim honouring the saints Sidi Brahim Ouâli (21-22 April; closing of the *agdal*) and Sidi Abdallah Bouchouari (towards end August; opening of the *agdal*). They are the two annual "grand Moussem" of the tribe Ait Ouadrim, and they also testify the close ancient spiritual link of native people to the argan forest and the *agdal* system. In both Moussem the dynamic is the same: a souk where people meet and religious rites honouring the saint take place. The relevance of these traditional festivities at present lies in the fact that they remain relevant occasions for gathering of people around traditional festivities and traditions which contribute to maintain and revitalise the community's sense of belonging, identity and keeps the group cohesive.

"In Ait Ouadrim there are two Moussem: Sidi Brahim Oâl for the closing and Sidi Âbl for the opening, the fourth month, April is the closing, they call Sidi Brahim Oâl, yes. The end of the agdal is the Moussem Abdallah

Bouchouari, the opening. Everyone is in Ait Ouadrim" (PGIS men workshop, January 20, 2019).



Figure 67. A: Sanctuary of Sidi Brahim Ouâli in Itnin (Ait Ouadrim). Sacred place of pilgrimage and religious rites honouring the saint (eventually including the sacrifice of chickens or the like). B: "Ahouch", traditional dance performed on the occasion of diverse festivities and moussems (Romera, 2019).

At a more local level, for Tamejloucht the most relevant religious festivity is the *Moussem* of *Sebt Ait Milk* honouring the saint *Sidi Sâaid Oumssôud*, mid-September (local interview, 02 February 2019).

People in Tamejloucht do not point out any **agro-pastoral festivity** as such. However, they highlight as a source of joy the fact that during summer holidays (in August) the argan harvest takes place and this is the time when all the non-permanent residents return to Tamejloucht and join their families and relatives (the permanent residents) "bringing back to life" the douar.

Concerning **local and cultural identity**, as in the case of Tisskji, Tamejloucht belongs to a Berber mountain territory⁸⁶. In the north-western Anti-Atlas, the Imazighen/Ishelhin⁸⁷ peoples (speaking the Tashelhit dialect) are sedentary grain farmers and arboriculturists. Numerous confederations of tribes share the territory; nevertheless, the history of their evolution is not well known (Riser, 1988). Morocco retains a strong Amazigh minority, solidly established in the large mountainous massifs such as the Anti-Atlas. Isolation, it is said, has allowed traditions -ancient customs and language- to be maintained for longer here than in the plains, where Arabization has spread more easily. Two examples worth mentioning of local and cultural agrarian identity of the region are the original and diverse modes of cultures in terraces and oases (Figs. 64 and 65B-C).

The current economic development of South Morocco, emigration and the boom in tourism threaten the old Amazigh background. However, these activities only penetrate very slowly into the heart of the massifs. In contact with the welcoming populations of these mountains, one can guess their fierce autonomy and their will to preserve their culture. They have managed to preserve their long-held traditions; particularly in the fields of architecture, costumes, dances, gastronomy⁸⁸, customs and natural resource management. *Igoudar*⁸⁹ (plural of Agadir in Amazigh) are unique examples of architectural cultural heritage linked to the socio-political, economic and security-related history of the region. See Fig. 68.

⁸⁶ For about three millennia the Anti-Atlas has been populated by Berbers (Riser, 1988:31).

⁸⁷ **Imazighen** (sing. m. Amazigh; sing. f. Tamazight); **Ishelhin** (sing. m. Ashelhi; sing. f. Tashelhit).

⁸⁸ Examples are special recipes using amlou and argan oil, "Tafarnout" bread (literally meaning "oven" bread), etc.

⁸⁹ **Igoudar** are ancient collective granary-citadels (of a rich architectural and social culture) that served as safe places to store foodstuffs, crops, jewellery and precious documents; protecting them from invasions of nomads from the South. Igoudar frequently served also as places where to dispense justice. Good examples of Igoudar in the region are the Agadir Inoumar, which is the largest collective granary of the Western Anti-Atlas, Agadir Imchguiguiln or Agadir Ikounka among many others.



Figure 68. A: Collective granary "Agadir Imchguiguiln" located in the commune of Ait M'zal (Chtouka Ait-Baha), whose history dates back almost 760 years. B: 13th century Kasbah of Tizourgane in Ida Ougnidif (Afker, 2019).

Despite its proximity to the plain of Chtouka and to the modern socio-economic influences of big economic centres such as Biougra, Inezgane or Agadir city, Tamejloucht and many other small rural villages remain strongly attached to the traditions and cultural characteristics of the societies of the Anti-Atlas mountains region (e.g. worldviews and social relations; gender roles related to work, society, education or family; sense of place or identity, entrepreneurship, migration, etc.). This cultural identity of the Anti-Atlas is totally different from that of the High Atlas mountains⁹⁰ for example, or other nearby regions (such as the plains of Souss, Massa, etc.). However, as in the High Atlas case study, Argan practices and know-how concerning the argan tree (including the *agdal*, religious and agropastoral festivities) remain alive and important elements of local identity.

Regarding the **gender division of labour** and other tasks or social roles within the Argan practices, the traditional customs in Tamejloucht (as in many other rural villages of the Anti-Atlas) have been highly impacted by emigration. Most of the local rights-holders are not permanent residents, so they ask labourers or local neighbours to harvest their argan trees for them (a traditionally women role in the past). Also, the traditional task of pruning and maintenance of argan trees (men role) is mostly neglected at present. However, other gender-related tasks are still maintained at present and remain strongly rooted. For example, women continue being in charge of the argan nuts de-pulping, crushing and production of argan oil (high labour-intensive and time-consuming tasks), while men are those in charge of commercialisation of the fruits, the nuts or kernels and/or the argan oil.

Emigration in the Anti-Atlas:

To understand governance, livelihoods and local economy in the Anti-Atlas, the emigration phenomenon needs to be considered in the analysis. Since independence, the wealth of these villages comes mainly from emigration.

Men leave the land for a few years to look for work in the cities from the coast (mainly Casablanca) or abroad. The savings made are then reinvested in the villages in the form of a house or a business (see Fig. 65). As stated by Lacroix (2005), "Emigrating for a Berber from southern Morocco is not a neutral and individual act. The meaning of the migratory act is rooted in a historical and social background. It involves an entire community so that the price of the loss of a worker is compensated by the wealth he or she will bring back".

The migration phenomenon in the Anti-Atlas region is all but a "way out" of their homeland.; as argued by Lacroix (2005), "it cannot be assimilated to an escape from a hostile country or to a survival reflex in the face of the decay of a social and economic fabric. On the contrary, the Imazighen social structures have been maintained through the management of a

⁹⁰ Cultural originality of the Anti-Atlas is mostly determined by historical isolation, climate, migration phenomenon and other historical, economic, socio-political and geographical configuration of the massif.

complex balance between mobility and sedentariness". For the community of origin, the entire migratory act is geared towards the "return on investment" that transfers represent. To understand the social meaning of migration and remittances in southern Morocco, it is first necessary to acknowledge the two main features of this region: its geography and its history (Lacroix, 2005).

2.2.5. TRIBAL AND COMMUNITY HISTORY

The entire old massif of the Moroccan Anti-Atlas has experienced a remarkable unity of way of life. During the historical period, the isolated Anti-Atlas mountain remained alien to the great Moroccan dynasties. This strong isolation has been continued until the last stage of the French conquest, when the whole Anti-Atlas finally submitted (Riser, 1988; Ziyadi, 2011).

In turn, Tamejloucht is descended from a single lineage: "*We are from Tiwazouyl in the mountains... Ever since my parents came down from the mountain, they found Argan here [in Tamejloucht]*" (leader family member, interview, January 26, 2019). The ancestors of current inhabitants of Tamejloucht belonged to the **tribe Aït Souab** (south-east neighbouring tribe of Aït Ouadrim) (Fig. 59). Nevertheless, geographically, Tamejloucht is located in the territory of the **tribe Aït Ouadrim** (Fig. 59). And the 100% of interviewees consider themselves from Aït Ouadrim as a community.

Both tribes, Aït Ouadrim and Aït Souab, like the vast majority of the Anti-Atlas and Souss region, are sedentary Imazighen/Ishelhin who belong to the Tashelhit linguistic group. Their sedentarisation and the ancient origin of the tribes are unknown (as they go back to a time prior to the historical sources available) (Ziyadi, 2011). Nevertheless, they have always been able to keep its independence from the central power, it was only in 1936 that Aït Ouadrim joined the Makhzen.

TRIBE AÏT OUADRIM

The tribe Aït Ouadrim is located in the plateau of Aït Ouadrim which dominates the plain of Chtouka. It is a bordering territory linking the mountains with the Souss valley. Aït Ouadrim is the "big tribe" including 12 "small tribes" or taqbilts, among them the Aït Ouaghzen tribe to which Tamejloucht belongs, through the Aït Diwan fraction tribe (see Figs. 59 and 60). The tribe Aït Ouadrim is part of the confederation of tribes of Chtouka (*Achtouken* in *Tashelhit*). Today, Aït Ouadrim comprises 135 douars.

TRIBE AÏT SOUAB⁹¹

The tribe of Aït Souab occupies the north-western slopes of the Anti-Atlas mountain range. The country of the Aït Souab is a relatively high mountainous area, difficult to penetrate, rich in water and poor in cultivated land (Unknown, 2010; Ziyadi, 2011). The tribe of the Aït Souab is therefore a mountainous island, very different in character and customs from its immediate neighbours. The Aït Souab are called *Iboudraren* (i.e. mountain people) by their neighbours for their firm character, their harsh and difficult life (Unknown, 2010; Ziyadi, 2011).

As for Tisskji, the tribal context may enlighten the local sense of belonging, peoples character or spatial issues. However, for understanding current local governance is relevant to consider which are the times of shock in recent local history. Figure 69 illustrates the timeline for the most relevant key dates and periods in Tamejloucht and its region.

⁹¹ It should be pointed out that this tribe is little known to both historians and geographers. In all fields of research, studies are rare. Because of its geographical position, the travellers (Léon the African, El Bekri, Charles de Foucauld) who have travelled through Morocco from North to South have probably forgotten it or simply avoided it. On the other hand, the Tazeroualt in the southwest of our study area benefits from precious descriptions (J. Podeur, 1995 in Ziyadi, 2011).

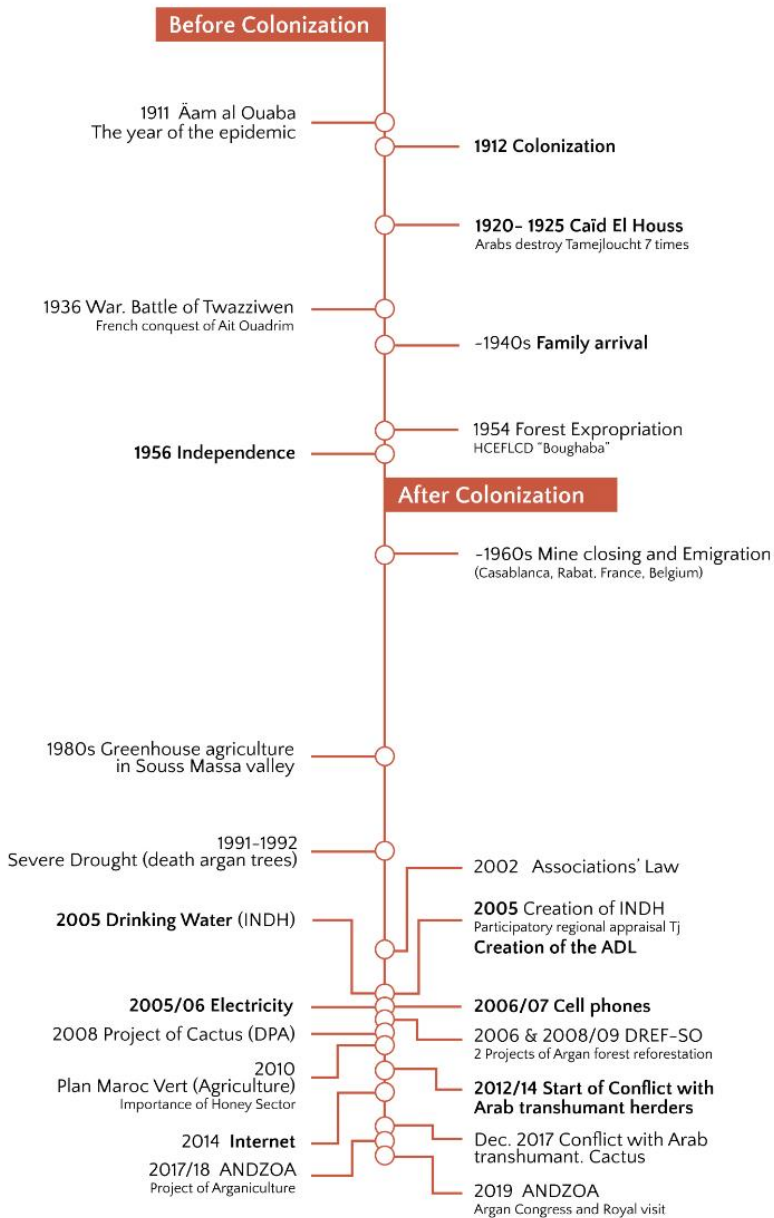


Figure 69: Timeline for the most relevant key dates and periods in the community/region (Tamejloucht/North-western Anti-Atlas). Times of shock in recent history. Source: Own elaboration from local interviews.

PART 4. RESULTS

The results of the thesis are structured in four chapters and presented according to the three specific objectives (S.O.) considered, as follows: Chapter 1 of the Results section, “Institutional Governance in the Arganeraie Biosphere Reserve”, addresses the Specific Objective 1, namely, to analyse the institutional approach to environmental governance of the biosphere reserve. Chapter 2 “Local and Customary Governance in Tisskji” and Chapter 3 “Local and Customary Governance in Tamejloucht” present the results from the two local case study sites considered, addressing the Specific Objective 3 “to investigate the bottom-up processes of customary and local governance in two rural communities”. Lastly, Chapter 4 “The Global-Local Interface” responds to the Specific Objective 3 “to examine the interface between the Arganeraie Biosphere Reserve and the two local communities through the identification of the constraints and synergies of their own approaches to environmental governance”.

1. INSTITUTIONAL ENVIRONMENTAL GOVERNANCE IN THE ARGANERAIE BIOSPHERE RESERVE

To answer the **first specific objective** (S.O. 1), I have focused on several aspects essential to dig deeper into policy, natural resource management and governance model at an institutional and RBA level.

Overall, the methodological research strategy and experimental set-up (see Fig. 14), seek an in-depth understanding of the research topic. To achieve this, I have developed and adopted a **pluralistic integrative approach** which encompasses a variety of qualitative research methods and social analytical tools which were also compatible and well suited to our focus on the multi-scale analysis of environmental governance. Figure 20 eases to grasp the Specific Objectives (S.O.) versus Methods’ Logic that has guided the data collection and data analysis processes.

This chapter looks at the governance model of the RBA but also at other institutional governance issues with a strong relevant impact over the RBA. Thus, based on participatory and ethnographic research methods of data collection and validation and on qualitative data analysis, this chapter follows the following structure: actors analysis; analysis of the RBA management and governance model; and RBA visions of future.

1.1. ACTORS ANALYSIS

I have conducted the multiscale diagnosis of institutional actors in the RBA in two stages. First, through **stakeholder identification and mapping** (actor’s map). To identify past and present relevant actors and stakeholders in the RBA, I have built mainly on data coming from prospective open interviews, in-depth semi-structured interviews, and field notes from participant observation. The second stage of the multiscale diagnosis of institutional actors include a subsequent in-depth **actors’ characterization**, that is, an analysis of the relationships of Collaboration and/or Conflict, Competition, Legitimacy, Interest and Power (i.e. CLIP analysis) existing among the actors identified. As the identification and analysis of these relationships involve higher complexity, to this end, I have mobilized information from the joint coding and analysis of all the field data obtained at the RBA level (e.g. by assigning a

specific code and subcodes to each of the CLIP relationships to be analysed). The results of the comprehensive multiscale analysis of institutional actors in the RBA are presented below.

1.1.1. STAKEHOLDER IDENTIFICATION AND MAPPING

First, it is worth mention that the structures in charge of and involved in biosphere reserves’ management in Morocco officially acknowledged by IUCN (IUCN, 2012) are the following:

- National structures in charge (supervisory administrations): High Commission for Water and Forests and the Fight Against Desertification (HCEFLCD), Ministry of Agriculture and Maritime Fishery (MAPM)
- National structures involved: Universities, NGOs, other ministerial departments (e.g. environment, equipment)
- MAB Committee

Regarding specifically the RBA, the current normative context considers as the RBA managing body, the Regional Directorate for Water and Forests and the Fight against Desertification (DREFLCD-SO); subordinate to the High Commission for Water and Forests and the Fight against Desertification (HCEFLCD), Ministry of Agriculture (MAPM). However, specific actors integrating other governing structures of the RBA such as the participatory body have remained unspecified to date in the RBA official policies and documents. Figure 70 shows the composition of the RBA participatory body considered in the 2018 2nd UNESCO Periodic Review. Then, Fig. 71 shows the most detailed and specific organigram to date of the RBA governing structures, as illustrated in the 2020 RBA Action Plan (DREFLCD-SO, 2020). It includes the two scenarios proposed for stakeholders validation (still to be validated in 2021), which differ only in the composition of the research and communication councils and the coordination of the Wali (scenario 1) or the Regional Council of Souss Massa (scenario 2).

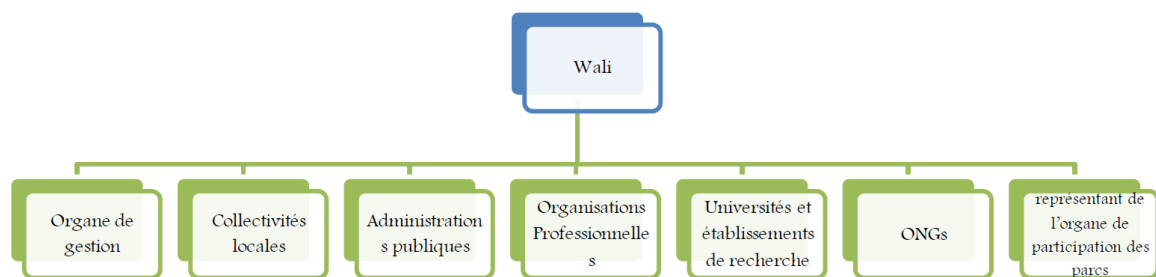


Figure 70: RBA Participatory Body. 2nd UNESCO Periodic Review (2018). Source: DREFLCD-SO (2018).

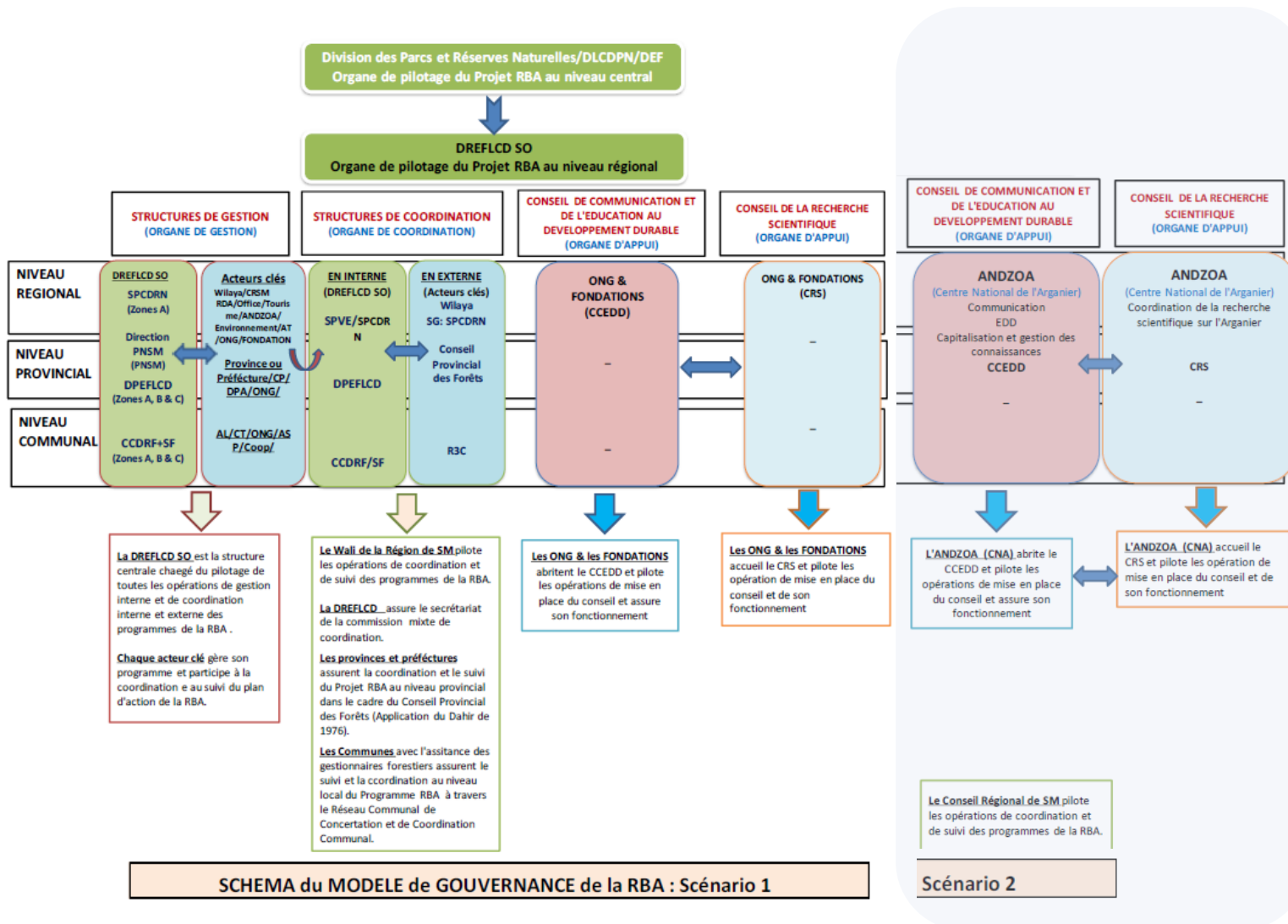


Figure 71: Diagram of the RBA governance model, as illustrated in the 2020 RBA Action Plan. It includes the two scenarios proposed for stakeholders validation. Source: DREFLCD-SO (2020).

However, formal acknowledgement of RBA stakeholders on policies is not enough to properly understand relevant actors' dynamics taking place nowadays and their effect on governance. Therefore, to properly unveil and analyse what is going on in the Arganeraie regarding institutional environmental governance of the Biosphere Reserve, I first analysed who has a say within the RBA (Reed et al., 2009) and who was included as one of the main RBA institutional stakeholder (Table 15). My actors' identification and analysis are based on original data from interviews, testimonies, field notes, etc., not in what policy documents report. Then, I use information from the RBA Framework Plan (2002) and the Action Plan (2020), regarding formally acknowledged actors, to assess the policy-practice gap. According to the sampling design, the set of participants' profiles adequately reflect the broader community of RBA institutional stakeholders (including official, potential and informal actors).

By "institutional stakeholder" I mean not only State administrations, public agencies, and the like, I also mean universities and research centres, NGOs, cooperation agencies, consultants and other professionals, civil society organisations of regional and national levels, and political actors, among others. In short, for the purposes of this research, I consider **institutional stakeholders** all those actors who have a say in the RBA and belong to an organisation of a level higher than local (i.e. higher than village/douar), that is, regional, national or international levels. Then the **main institutional stakeholders** are those who have a direct link with the RBA as acknowledged in the different RBA strategic documents (e.g. framework plan, action plan, UNESCO's periodic review, etc.) and or in the field interviews. **Official institutional actors** are, among the "institutional stakeholders", a subgroup comprising only the public ones. **Potential institutional actors** are those who, despite being acknowledged in the RBA strategic documents and/or in the interviews, do not have an active role in the RBA or have not yet agreed to have it at the moment of the fieldwork (i.e. 2018-2019). Finally, **informal institutional actors** are those knowledgeable actors (most of them consultants and individual researchers) who have gained the trust of RBA managers, so they have a say and a direct link with the RBA (at an RBA, regional or national level).

ARGANERAIE BIOSPHERE RESERVE		
Key actor acronym	Full French name	Full English name
MAB Maroc	MAB Comité au Maroc	MAB Committee in Morocco
Eaux-et-Forêts DLCDPN/DEF	Division des Parcs et Réserves naturelles. Haut-Commissariat aux Eaux et Forêts et de la Lutte Contre la Désertification (HCEFLCD)	Parks and Natural Reserves Division. Department of Water and Forest, Ministry of Agriculture.
Eaux-et-Forêts DREFLCD-SO	Direction Régionale des Eaux et Forêts et de la Lutte Contre la Désertification Sud-Ouest	Regional Department of Water and Forest, South-West.
Wilaya	Wilaya d'Agadir Ida Outanane	Regional administration, Ministry of Interior.
Conseil Régional SM	Conseil de la Région de Souss-Massa	Souss Massa Regional Council
Provinces	Province et préfecture	Intra-regional administration
Communes	Commune territoriale	Local administration
ANDZOA	Agence Nationale de Développement des Zones des Oasis et de l'Arganier	National Agency for Development of Oasis Zones and the Arganeraie
RARBA	Réseau des Associations de la Réserve de Biosphère de l'Arganeraie.	Network of Associations of the Arganeraie Biosphere Reserve
DRE-SM	Direction Régionale de l'Environnement Souss-Massa	Regional Department of the Environment, Ministry of Environment
ABH-SM	Agence de Bassin Hydraulique Souss-Massa	Water Basin Agency of Souss-Massa
Agriculture DRA-SM	Direction Régionale de l'Agriculture Souss-Massa	Regional Department of Agriculture, Ministry of Agriculture

IRAT-SM	Inspection Régional de l'Aménagement de Territoire Souss-Massa	Regional Inspection of Territorial Planning
UIZ	Université Ibn Zohr	Ibn Zohr University
IAV	Institute Agronomique et Vétérinaire	Agronomic and Veterinary Institute
INRA	Institut National de Recherche Agricole	National Institute of Agrarian Research
Tourism-e	Direction Régional du Tourisme	Regional Delegation of Tourism
Culture	Direction Régional de la Culture	Regional Delegation of Culture
RDTR	Réseau de Développement du Tourisme Rural Souss Massa	Souss Massa Rural Tourism Development Network
AESVT	Association d'Enseignants de Sciences de Vie et de la Terre	Association of Life and Earth Sciences Professors
Education CRDAPP	Centre Régional de Documentation, d'animation et de Production Pédagogique	Regional Centre for Documentation, Animation and Pedagogical Production, Ministry of Education
FIFARGANE	Fédération Interprofessionnelle de la Filière Argan	Inter-Professional Federation of the Argan Sector
PNUD Maroc	PNUD Maroc	UNDP Morocco
GIZ	GIZ - Coopération allemande	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) - German Cooperation

Table 15: RBA main institutional actors' acronyms and full names, including official and potential actors.

An initial institutional actor's map of the RBA (Fig. 72) shows a multiscale diagnosis of the 'extended peer community' of decision-makers, including their connections, degree of centrality to the network and actor's profile. I consider **RBA decision-makers** those individuals and organisations who have the capacity, trust and/or legitimacy to influence the different RBA decision-making processes (e.g. public institutions and agencies, academia and research institutions, private consultants and professionals, civil society associations and NGOs and other key informants); **key informants** are those individuals who have relevant expertise related to my research topic; that is, the RBA and or the local development, argan forest, *agdals*, ICCAs or the like (at some point in history past or present). Finally, **key actors** in Fig. 72 (indicated with a central orange dot) are those with a maximum degree of influence (equal to 6 in a 0-6 scale) regarding RBA decision-making.

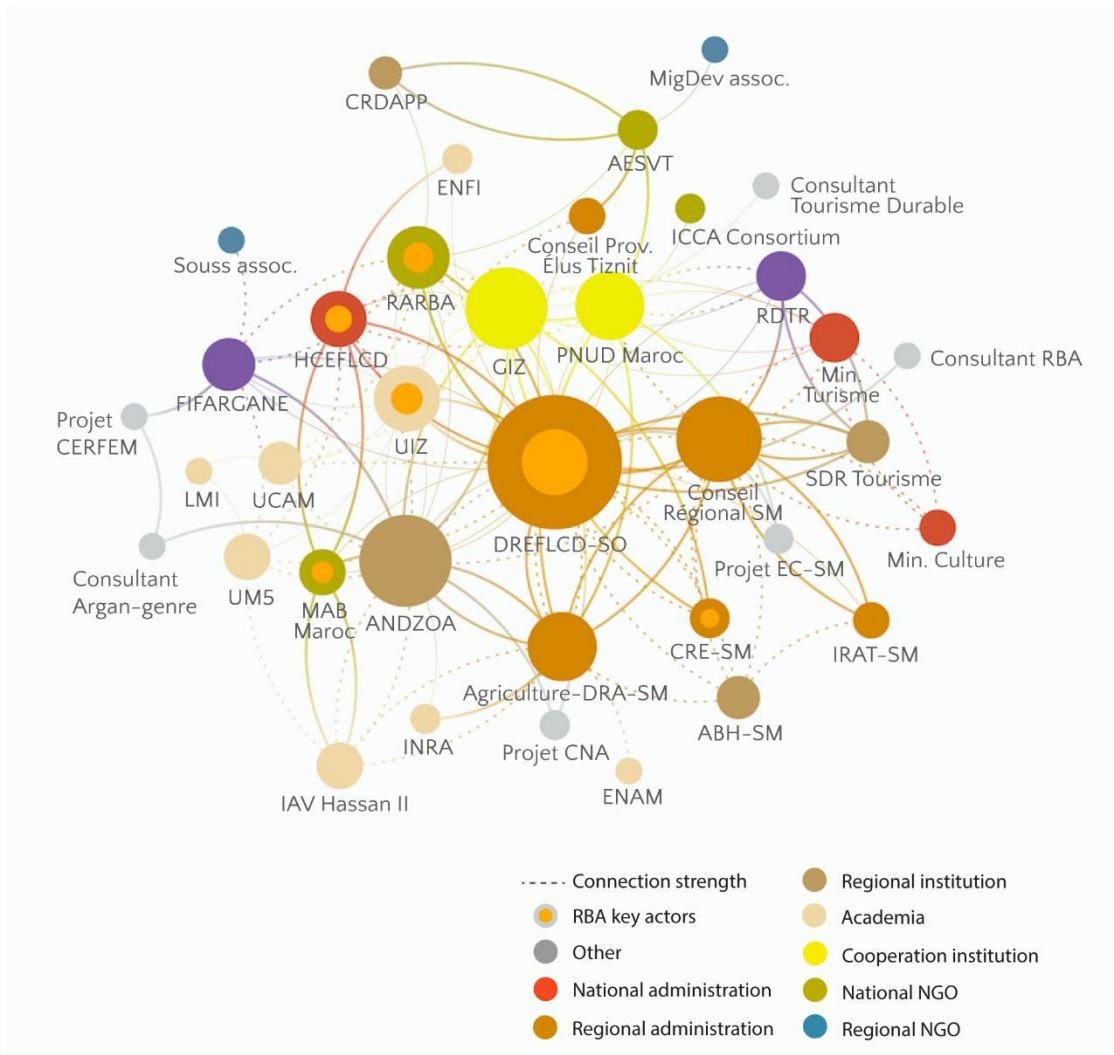


Figure 72: RBA institutional actor's map. Relationships and degree of centrality among the main institutional actors directly linked with the RBA in 2019 (Kumu, 2020). *For further detail on actors, see Table 15.

Results unveil how out of the 24 main official actors identified in the RBA, just seven reach a high level of centrality and only eight may be considered key actors; which means that a big gap exists between the number of officially recognized institutional actors and their real implication and influence. The degree of centrality is a Kumu's Social Network Analysis metric representing the total value of each actor's (i.e. element in the network) connections. That is, each actor's weighted number of connections with other actors regarding the RBA.

Overall, regional NGOs and other social actors are underrepresented, although one of them, the RARBA, has high influence in decision-making (i.e. it is a key actor). Relevant regional and local institutional actors are absent in reality (i.e. provinces, communes, Wilaya), while others do not reach the implication they are expected to (i.e. Conseil Regional, MAB Maroc, CRE-SM, Culture, Tourism).

Since the research depends heavily on participants' perceptions and I rely on the detailed and meaningful information that the ethnographic approach has allowed obtaining, I consider it relevant to ponder the type and scope of the information provided (mainly through the in-depth semi-structured interviews) and the category of actor. In this sense, although participants' profiles and years of professional experience were diverse, remarkable and directly linked to the Arganeraie territory and/or the RBA; I noticed that it did not imply that their knowledge regarding biosphere reserves in general and/or the RBA specifically was accurate.

The assessment of participants' knowledge about biosphere reserves revealed a high level of misconception and/or lack of knowledge regarding the RBA among its main stakeholders. The biosphere reserve concept, biosphere reserve label and RBA formal implementation is unknown and/or misconceived by many of the participants. Most of the institutional actors interviewed know the BR concept and the existence of the RBA, but they do not know the RBA in detail and/or they are not updated about the RBA current developments. However, they tend to act as they do. There might be a cultural factor biasing responses (a sort of "need to show that you know the answer to the researcher's question").

1.1.2. ACTORS' CHARACTERIZATION

To adequately describe and analyse the characteristics and relationships of the main institutional stakeholders in the RBA previously identified (see Fig. 72); I characterized them according to their CLIP descriptors (Chevalier and Buckles, 2008). Figure 73 illustrates the first result of a comprehensive CLIP social analysis in which I have divided each CLIP descriptor into its component parts (e.g. looking at the various components of the power or legitimacy variables). See Annex III for further detail on the comprehensive analysis of each CLIP descriptor. I deemed it necessary and insightful, given the complex and unclear governance scenario of the RBA (DSE, 2005).

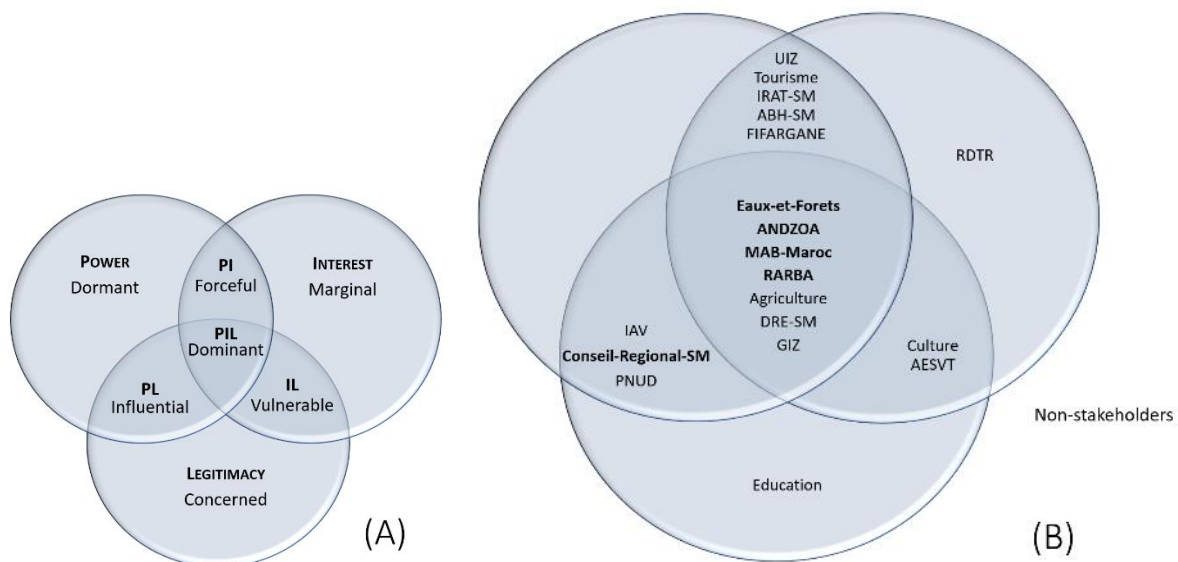


Figure 73: (A) Venn diagram showing the relationship between the various CLIP descriptors (adapted from Chevalier and Buckles, 2008). (B) Venn diagram classifying the main RBA institutional stakeholders using the CLIP method. *For further detail on actors, see Table 15.

In addition, the gains-losses matrix in Fig. 74 illustrates the second result from the comprehensive CLIP social analysis, in which the relationships of collaboration and or conflict/competition among each of the stakeholders are analysed and charted. To conduct this analysis, I have considered the relationship of each stakeholder with each of the other ones from its perspective (because the same two stakeholders may have very different perspectives of their relationship). See Annex III for further detail on the collaboration and conflict matrix. It is worth noting that the analysis relies on my understanding of the relationships between stakeholders at the time of the fieldwork research (2018-2019), so the nature of these relationships may have changed.

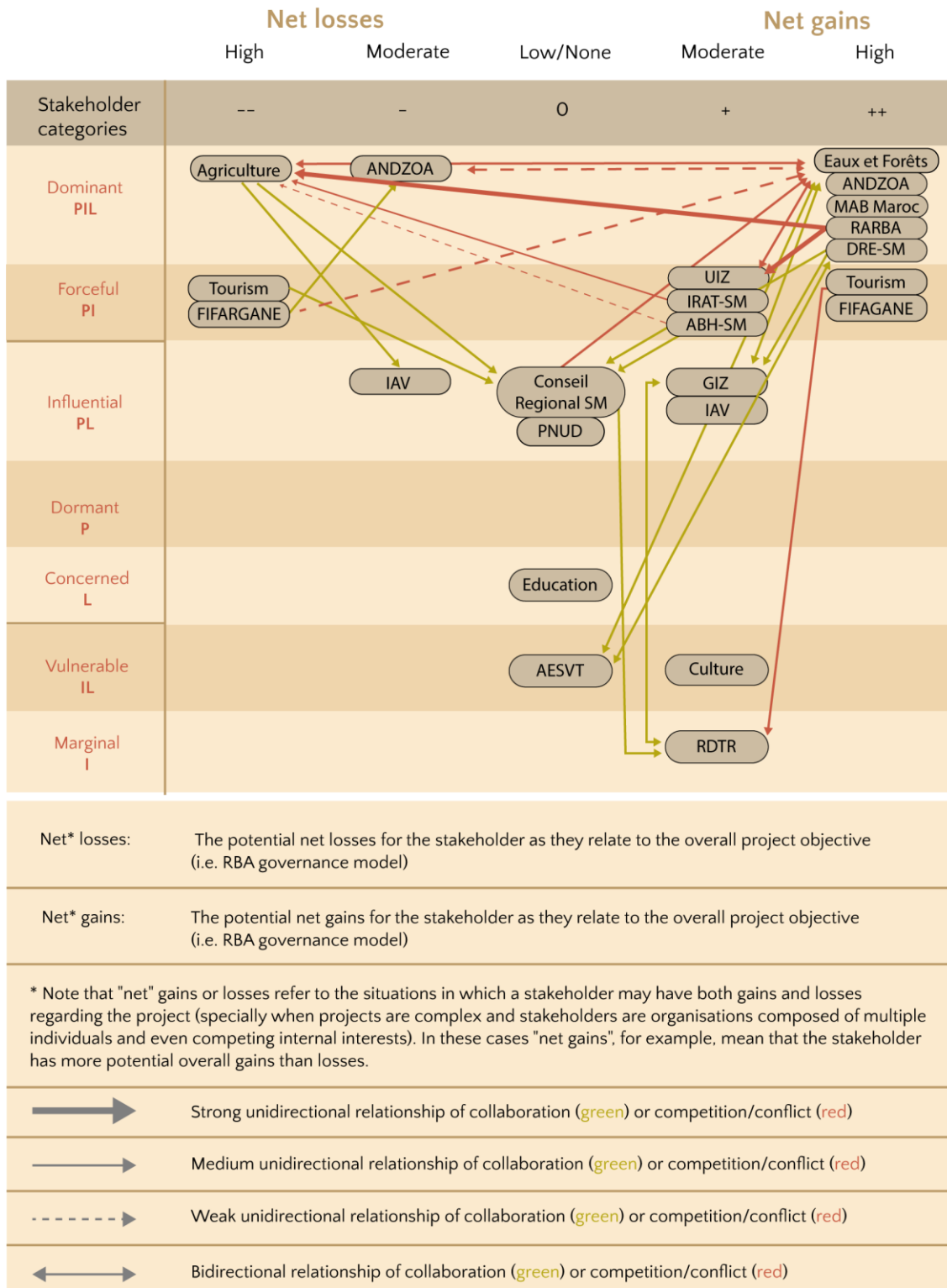


Figure 74: CLIP Social Analysis applied to the main RBA institutional stakeholders (Gains-Losses Matrix). Green and red arrows show, in a simplified and weighted way, the more relevant relationships of collaboration and competing/conflicting interests detected. Adapted from (Chevalier and Buckles, 2008). *For further detail on actors, see Table 15. ** For further detail on the collaboration and conflict relationships among stakeholders, see Annex III.

In the CLIP social analysis, a stakeholder’s interests can be defined as their potential net gain or net loss as they relate to the overall project objective (see Annex III for further detail on the comprehensive analysis of each CLIP descriptor for each stakeholder). These gains or losses can affect

the control, influence or behaviour a stakeholder has (or will have) over the project. In addition, identifying interests is often complex, and sometimes an individual's interests differ from those of the group or institution they represent (which is frequent in the present case study). In such cases, I have relied on other data sources and cross-data analysis (e.g. looking for contradictions within and among interviews, cross-checking with field notes from participant observation, etc.) to ensure that my analysis accurately reflects the reality of the stakeholders considered.

Opposing interests (not necessarily conflicting) have been also carefully considered, for the relevance in the case of the RBA, where large national and regional institutions may have contrasting internal logics, politics and strategies (with which respondents must deal with) that influence the RBA "from the outside". In these cases, it is the people with whom respondents talk to from outside the project (i.e. the RBA governance) who have the greatest influence without ever being directly involved (e.g. many of the sectorial institutions linked to the RBA, like Agriculture, Tourism, Industry, etc.).

1.2. ANALYSIS OF THE RBA MANAGEMENT AND GOVERNANCE MODEL

After the comprehensive multiscale analysis of institutional actors in the RBA, I have examined the institutional approach to environmental governance of the RBA in three stages.

The first stage explores, through policy analysis, the **"theoretical" side of the institutional management and governance model of the RBA**; looking specifically at the theory-practice gap (i.e. what formal policies and regulations stipulate versus what was actually happening at the time of the fieldwork -2018-2019-).

The second stage focuses on the examination of the **actual institutional approach to environmental governance** of the RBA (i.e. "practical" side), including a SWOT analysis of the RBA.

The third stage of analysis includes the examination of institutional stakeholders' **perceptions concerning the RBA governance**, including understanding their worldviews, using their language, etc.

1.2.1. INSTITUTIONAL MANAGEMENT OF THE RBA. THE THEORY-PRACTICE GAP

An understanding of how Moroccan institutions perceive and manage the Biosphere Reserve and the Arganeraie territory allowed me to explain why governance remains the biggest challenge in the RBA. At present, as in most Arab BRs (IUCN, 2015), in the RBA: First, the structures in charge of the BR are the same in charge of protected areas and state forests. Second, there is no national BR network as such. Third, human resources are limited to civil servants in charge of BR's dossiers. Fourth, there is no specific BR financing mechanism (IUCN, 2012). Fifth, the National MAB Committee exists, but it is not functional enough (members are volunteers and far from the RBA). Sixth, apart from the NGOs that are involved, local populations do not have a significant place in the management of the BR. Seventh, the management of BRs in Morocco is delegated in national legislation to the High Commission for Water and Forests (i.e. HCEFLCD). Nevertheless, this responsibility is beyond the strict competencies⁹² of the HCEFLCD and covers a vast territory⁹², including all territorial components, which influences and determines the involvement of all partners (each one theoretically intervening according to its specifications) (DREFLCD-SO, 2019).

⁹² 2.5 million ha. (i.e. 25,000 km²) and +3 million inhabitants (in 2014).

In additionally to these issues, the analysis of results concerning the institutional management of the RBA reveals the following difficulties: first, the coordination structure set up is inoperative, acting as a supervisory structure rather than a management body; second, the RBA Framework Plan (2002) is also inoperative and there was no Action Plan until 2020 (still to be validated by stakeholders and the participatory body⁹³); third, the RBA is institutionally managed as a "Dossier" with no staff officially designated to manage it.

Moreover, regarding BR zoning, one of the major strengths of the RBA in the international arena is its conceptual and theoretical zonal designation in the sense of landscape, ecosystem level and development terms since its conception. However, this zoning remains unknown to most actors and a clear demarcation of borders is still lacking on the field. In the Arganeraie, effective zoning implies a BR of huge area (all the argan forest ecosystem spatial area of distribution, 2.5 million ha) and enormous complexity. Thus, because of such a coherent theoretical zonal designation, the RBA zoning has ended up being non-functional in practice. Since its designation as BR in 1998, the zoning in the RBA has not been strictly applied or monitored, among other things, because: (1) there is no legal support to enforce compliance, (2) it is not a (long-term) national or regional political priority, (3) to date, almost nobody knows the exact boundaries on the ground, (3) precise maps are recent and have not been communicated or widely distributed, (4) there are no signs on the roads or on the geographical boundaries, and (5) there are no human nor technical means to provide surveillance throughout the whole area of the BR.

However, 2018-2019 was a leverage point for the RBA in many aspects, starting from the 2nd UNESCO Periodic Review, which has fuelled: (1) a communication plan, (2) the revision of zoning and boundaries, (3) a management plan and a governance regional workshop where the former documents must be discussed, agreed and validated. In this regard, the new RBA Action Plan (2020) proposes two scenarios of the RBA governance model for debate (as shown by Fig. 71). Figure 75 illustrates the RBA official organizational structure (theoretical, i.e. as stated by policy documents); including its key institutional and socio-economic players, their roles and responsibilities; and featuring in red the main current challenges regarding IEG across levels, as identified in the analysis. Failure to address these challenges may result, once again, in failure to achieve an operational structure.

⁹³ The participatory validation process was interrupted by the coronavirus pandemic in 2020 and I have no further news on this at the end of 2021.

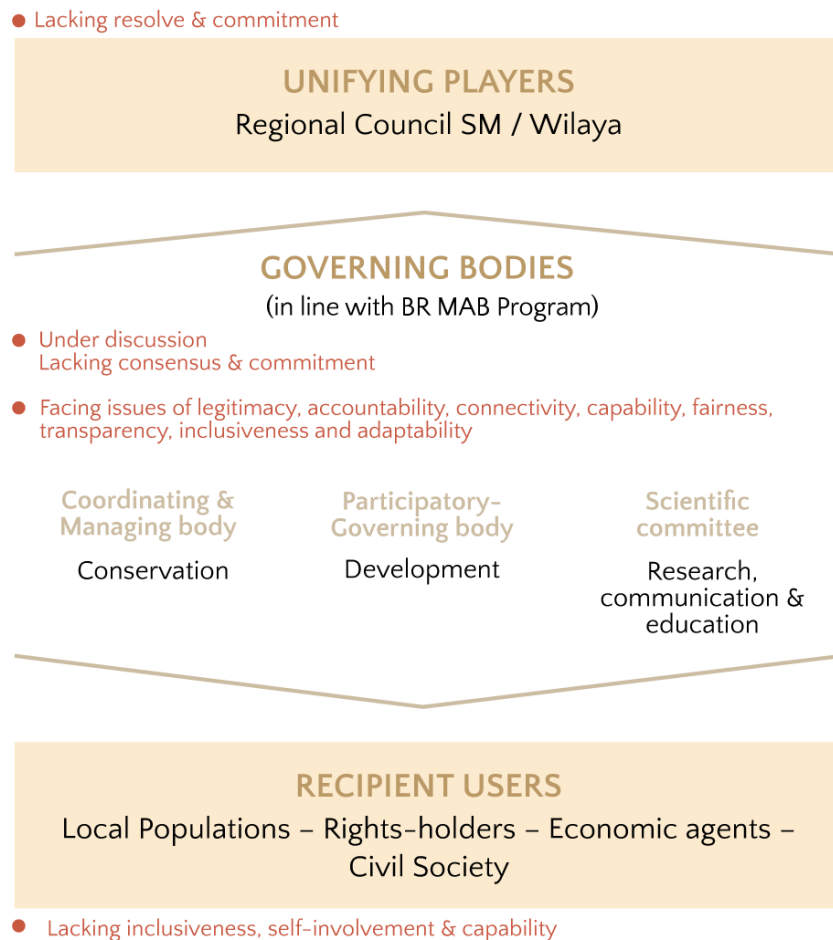


Figure 75: RBA official governing bodies and key institutional and socio-economic players, their roles and responsibilities; featuring (in red) their main current challenges regarding inclusive environmental governance. Source: own elaboration based on information from field data and the RBA action plan (DREFLCD-SO, 2020).

Additionally, the role of development projects has proven to be relevant within the configuration of the actor's network and, some of them have significant influence on the RBA dynamics. Paradigmatic examples of this are the PCDA (precursor of the RBA and the argan oil sector), the arganiculture initiative (i.e. DARED project) or the PES_SM project.

Despite this reality, participants still fail to have a clear idea of the roles, mission and typology of the RBA key institutional decision-makers. On the one hand, language and terminology used to name them do not help (e.g. beneficiaries, actors involved, promoters, managers, coordinators, decision-makers, etc. are terms frequently leading to confusion); neither helps sometimes participants' efforts to translate from their dialect into French. On the other hand, in absence of a legitimate governing body widely validated by all stakeholders, each of the prominent institutions tries to position themselves through discourses sometimes contradictory to the whole institution and at other times fuelled by financial or personal interests. This situation, first, is a major constraint on the BR's progress and, second, fosters confusion in people and hinders effective cooperation and dialogue.

Nevertheless, **positive informal dynamics** and the interaction of individual and institutional actors (e.g. relationships of trust, collaboration, alliances or dialogue) also play a relevant role in the RBA. Informal individuals and institutional actors (guided by their values, identities, self-responsibility,

leadership, personal concerns and willpower) might be preventing the system from failure through these positive informal dynamics, fostering dialogue, improvement, and evolution. Figure 76 shows the RBA governing reality (informal) derived from the field data analysis, a major strength regarding IEG.

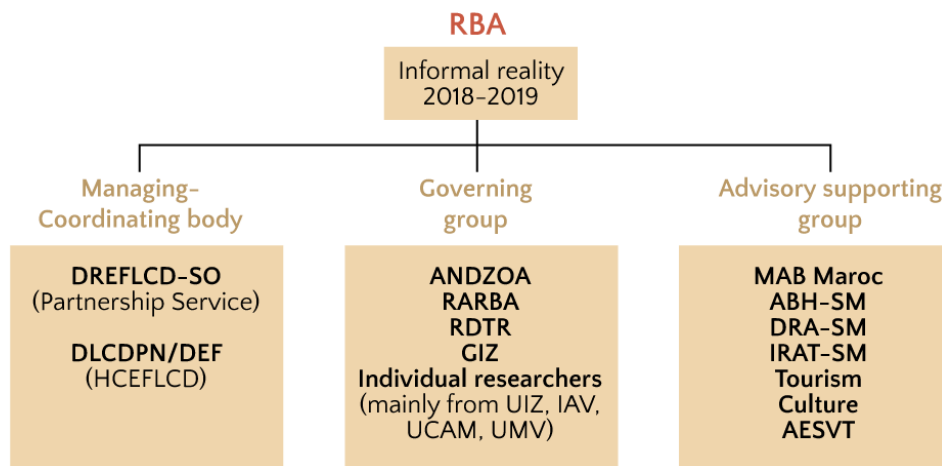


Figure 76: RBA informal current governing group (2018-2019). A group consisting of leading and engaged individuals and institutions and their main current roles and responsibilities. Source: own elaboration based on information from field data.

1.2.2. IN-DEPTH CHARACTERIZATION OF THE RBA

To complement the examination of the institutional approach to environmental governance of the RBA with an in-depth characterization of the RBA, I carried out a detailed SWOT analysis concerning specifically the RBA. Out of the 12 people asked to fill in the detailed RBA SWOT matrix individually, only 4 people did it completely, so further information in this regard was asked during the Expert Focus Group; this time in a collective manner. Key informants addressed, were asked to inform about strengths, weaknesses, opportunities, and threats related to nine priority topics. The priority topics I considered in the SWOT matrix were: territory and environment, biodiversity and conservation, socio-economic issues, cultural heritage, management, research, funding, tourism, and communication and participation.

The SWOT analysis was performed based on the four individual SWOT matrices compiled, plus the complementary (collective) information gathered during the Expert Focus Group, plus additional strengths, weaknesses, threats and opportunities raised from the content analysis of interviews and field notes mainly (through the specific subcodes assigned during the joint coding and analysis of the field data obtained at the RBA level).

The information presented in Table 16 offers a concise but detailed overview of the main strengths and weaknesses (internal) and opportunities and threats (external) reported by RBA key informants (managers and decision-makers) for each of the nine RBA priority topics considered.

PART 4. RESULTS

PRIORITY TOPICS (marked as "X")	STRENGTHS (S) (qualities that enable to accomplish the BR's goals)	WEAKNESSES (W) (qualities that prevent from accomplishing and achieving the BR's goals)	OPPORTUNITIES (O) (qualities which can be considered as an advantage for the BR)	THREATS (T) (elements which can be considered as a disadvantage for the BR)
	<i>S and W as internal factors over which managers have some measure of control</i>		<i>O and T as external factors over which managers have essentially no control</i>	
Territory and environment X	Territorial dynamics and awareness in development.	Contrasting territory and dynamics. High mobility in the rural and mountain world.	The redefinition of the territorial plans and functionalities of the territories according to their typology.	Criteria and parameters in the operational choices of territorial development options not appropriate to territorial balances.
Biodiversity and Conservation	Rich potential and contrasts. Species and ecosystems.	Low ecosystem resilience. Strong impacts on areas in the flatlands.	The law on protected areas and reframed regulations. Accountability of population at ICCA level.	Lack of appropriate anticipation and responsiveness to the effects of changes affecting biodiversity.
Socio-economic Issues X	Land-related activities and apparent and ongoing socio-economic impacts.	Social changes with modification of the links to the resource and to the territory. Variable trend towards strong changes in production systems.	Conciliation and consensus building. Collective responsibility. Effective engagement in SDGs.	Lack of anticipation of (1) the trends imposed by social changes and production systems as well as (2) the use of resources.
Cultural heritage	Typical, original, unique and identity-based. Strong commitment of the population to the preservation of heritage.	Loss of certain know-how and customs linked to heritage. Lack of appropriate support for rehabilitation and preservation needs.	Implementation of the achievements of the new constitution to be implemented. State commitment to cultural heritage issues.	Lack of monitoring of changes and trends related to cultural identity.
Management X	Participation and commitment. Sectoral integration.	Lack of federation and interface organisations adapted to complexity.	Implementation texts of the law on protected areas. Advanced regionalisation. Constitution of 2011.	Constraints linked to the fairly large size of the area. Legal basis for institutionalisation. Roles and actions of the interfaces weakly linked to the roles of MAB Morocco.
Research	Strong commitment of researchers. Active mobilization in the field of research.	Low efficiency in terms of the impact of results. Lack of RBA-research interface.	Revitalising the role of the MAB Morocco Committee. Creation of the RBA Scientific Committee.	Mismatch between needs and trends with RBA functionalities.

		Lack of link between research and local action.	Encouragement of existing support for research. Reorienting research towards an action result.	
Funding		Significant and evolving sector-based financial holdings. Diversity of financial and accounting support. Lack of rationality between the financing of conservation and development efforts.	Creating opportunities through the cooperation and support of the private and public sectors.	Crisis or emergence of other territory-related priorities.
Tourism	X	Great awareness of the actors and councils on the importance of natural rural tourism. Weak preparation of the territories for ecotourism culture (waste management and standardisation of qualification thresholds, etc.). Strong dominance of commercial logics.	Commitment of the Regional Council to rural tourism. Mobilisation of local tourist operators for the benefit of RBA.	Risk of non-adaptability. Risk of pollution (cultural, landscape,...) and risk of overexploitation. Lack of connection with natural and territorial potential. Risk of folklorisation and artificialisation.
Communication and participation	X	Strong NGO momentum for RBA communication. Great institutional interest in environmental education. Lack of efficiency due to lack of specific strategy and plan. Lack of measurement of the impacts of communication and participation. Lack of specific communication expertise related to the RBA.	Support and implementation of the communication plan in progress. Supporting communication in line with research. Valorisation of new technologies.	Artificialisation. Non-control and lack of anticipation of the negative impacts of the new technology.

Table 16: Brief description of the main characteristics for each area in the RBA in terms of a SWOT analysis. Source: own elaboration.

1.2.3. STAKEHOLDER'S PERCEPTIONS OF GOVERNANCE IN THE RBA

To examine in-depth the institutional approach to environmental governance of the RBA, it was not enough to analyse its management model and SWOT. I considered it essential to examine the institutional stakeholders' perceptions concerning the RBA governance, including understanding their worldviews or using their language, for example. This third stage of analysis included data from the combination of all the data sources at the RBA level through the qualitative content analysis aforementioned. Yet, the most relevant source of data were the specific questions included in the in-depth semi-structured interview guide.

Results indicate that perceptions of participants regarding governance are highly impacted by the individual stakeholders' profiles, experiences and mindsets when it comes to their professional behaviours, decisions and discourses. Such impact has frequently been overlooked in the scientific literature to date.

There is a high consensus on identified weaknesses and on the need to improve the current RBA governance model, as shown below. However, most participants are convinced that it is feasible to reach a general agreement, despite current difficulties, if there is enough political will, combined with strong leadership. All of them consider the RBA a great opportunity and "the future" for the region, as someone literally stated: *"The RBA in the future is a major opportunity and an imperative for Morocco internationally ... There is no room for error"*. I have grouped the main generalised perceptions (outcomes) regarding IEG in the RBA around six general topics that emerged from the qualitative content analysis and that are described below, including some relevant quotes supporting them.

1) VISION, RESOLVE AND INTERESTS

Evidence from the RBA case study points out the insufficient political support (expressed as "lack of political will") and the lack of a shared vision (multi-level and multi-actor), as the two major basis underlying beyond the rest of influencing factors, constraints and challenges faced by the RBA nowadays. The **RBA is not widely perceived as a territorial sustainable governance model**, and there is no shared vision of the development model of the BR. On top of the **lack of political support, social will and individual resolve remain insufficient** but crucial to present.

Political commitment and political will seem to be at the heart of many other barriers to IEG in BRs in Morocco. Both have been pointed out by most interviewees at institutional and local levels in one way or another. Since the BR designation is not a legally binding instrument, governments and legislators insufficiently sensitive to environmental and/or social issues or who give disproportionate priority to economic development over environmental and social aspects, will always find ways to relegate BRs to priority orders that do not interfere with their real strategies and priorities⁹⁴.

Concerning political and social will and resolve

** At present: we are still discussing on paper, not in the real situation. RBA is not considered in the decisions; it is not relevant.*

** There is no real will on the state's side. There needs to be a real will and targeting of political actors.*

** There is not enough involvement at the national level ... Stakeholders are worrying at the regional level. RBA is an opportunity.*

⁹⁴ From obviating BRs in legislation or in practice, considering them as a mere label, ... to not allocating resources to BRs or considering them as mere protected areas.

* *Civil society is not organised to defend RBA.*

* *There is a need for political will for the regions to take the lead*

Concerning a shared vision:

* *In the RBA, the focus has been on the economy and not on protection and social issues. The actors are not satisfied. There are conflicts of vision between Agriculture (DRA-SM) and Forestry (DREFLCD-SO). There is a (dominant economic) development trajectory.*

* *The challenges are achieving good communication, to reach agreement first, ... and to reunite the interests of everyone.*

Concerning governance of the RBA, the **lack of knowledge and insufficient commitment on the part of institutional actors, politicians and academics ends up being much riskier** than the ignorance of local populations. Nearly nobody, beyond the restricted group of people directly linked to the RBA since its creation, knows what a BR means and implies at the institutional level. This has actual and potential negative consequences on many levels, as outlined in Table 17.

Consequences of ignorance/misunderstanding of the BR concept	
Level	Negative consequences
Scientific	<p>Many academics think they know, but it is not always true. This fact may hinder processes of dialogue and intellectual reflection because:</p> <ul style="list-style-type: none"> • sometimes they have misinterpreted the BR concept and MAB provisions; • sometimes they have old and/or incomplete information; • other times they have a very partial vision at the thematic or geographical level. <p>The risk of egos must not be underestimated and would deserve to be considered an influencing factor itself. Egos driven by endogenous cultural dynamics linked to the university and intellectual social class of the country.</p>
Political	<p>Most politicians ignore the BR concept and prescriptions and do not seem to want to engage in it. It is not a priority at all, and they do not see the necessary interest to support it (neither in terms of political, economic, strategic nor personal benefits).</p>
Public administrations and Civil servants	<p>The RBA and other Moroccan BRs are not yet integrated into most strategies, policies and sectoral programmes related to the territory.</p> <p>National and regional representatives of these administrations, even those most closely linked to environmental issues, are unaware of the BR in general. As for academics, some civil servants act as if they know the RBA properly even if they do not, at the risk of hindering dialogue, consultation, decision-making processes, etc.⁹⁵</p>

Table 17: Consequences of ignorance and misunderstanding of the BR concept at the institutional level in the RBA.

2) GOVERNANCE AND INCLUSION

Adequate institutional design and an inclusive governance structure(s) for planning and management are lacking in Moroccan BRs, including the RBA. The BRs' **management structures and responsibilities remain dispersed and poorly defined** (e.g. RBs governing body's structures), which prevents the biosphere reserves from functioning properly. The **RBA Framework Plan (2002) has never been fully implemented nor functional**, and the first RBA Action Plan dates from 2019-2020 (DREFLCD-SO, 2020).

Lack of regional integration and cooperation with local authorities and insufficient coordination between institutions in charge of the BR, local decision-makers, local communities and other sectoral institutions and stakeholders remain relevant constraints for the Moroccan BRs (operating at multi-

⁹⁵ I get the impression of a kind of hidden cultural dynamic that pushes respondents to show that they know even when they do not, to maintain or respect a certain social and intellectual status. This issue would undoubtedly merit further extensive research, because if the indications that have emerged are confirmed, it could have profound implications in many other areas of management and research, and not only in relation to socio-environmental governance.

level, multi-sector and multi-actor), including the RBA. Linked, to the topic “law and policy”, the existence of some counterproductive and competing governmental programmes hinders governance of the RBA, cross-sectoral and cross-scale.

In addition, respondents claim that the implementation of the framework plan must be done with the population, referring to the **need for dialogue and agreement** among institutions and, importantly, with local population. In this regard, **the poor integration of local populations in planning and management remains a major constraint** to governance in the RBA. And the lack of mechanisms and processes to encourage local participation in management does not help.

- *The framework plan (2002) provides for regional, provincial and local committees, but it is not functional.*
- * The RBA needs to be institutionalised; it is paramount.*
- * There are statistical data, studies, decennial reports, advances everywhere except from the governing body, where there are no advances. There is the managing body, but not a governing body. There is no official interlocutor recognised by everyone.*
- * There is not exactly one entity that brings together all the institutions; it is DREFLCD-SO that manages directly.*
- * There is a need to raise awareness. Each one works in his own corner. First, the RBA needs to be institutionalised.*
- * There is a need for dialogue and institutionalisation.*
- * The fundamental shortcoming is not having a managing committee.*
- * RARBA and DREFLCD-SO are the holders of the RBA. There is no sense of ownership. It needs to be institutionalised.*
- * The implementation of the framework plan must be done with the population.*

3) ACCOUNTABILITY, LEADERSHIP AND LEGITIMACY

Issues of leadership, will and accountability are key, but sometimes dependent on other factors like competence, interests, or vision. The **RBA governing body** and its personnel⁹⁶ have not yet clearly defined roles and responsibilities and, obviously (i) it is **not fully accepted by all RBA stakeholders**, and (ii) members of the governing body have not demonstrated acceptance of their responsibilities. Thus, **accountability remains a key issue to be addressed** in the RBA nowadays.

- * We need councillors who can lead the way.*
 - * There is a need for capacity building and multi-stakeholder cooperation (conciliation).*
 - * There is goodwill, it is a question of leadership, leadership as action. There is a lack of collective intelligence. People need to embrace the discourse.*
 - * There is a need to build the capacity of public actors and civil society representatives; create opportunities for people to be involved.*
- Concerning the fact that the managing body is not fully accepted:**
- * There is no official interlocutor recognised by everyone.*
 - * The governmental actors are DREFLCD-SO (official) and ANDZOA (law) ... but there is confusion on the spot.*
 - * There is an active managing committee, yes; it works on the decennial evaluation.*

Because of the aforementioned situation, RBA stakeholders consider and assess the accountability of the RBA according to the different main institutions involved in the governing body separately (namely HCEFLCD, ANDZOA, MAB Committee and RARBA), rather than the governing body itself (functionally non-existent). And, since nothing is clear, well-defined, or agreed upon, everyone speaks and thinks according to their own impressions and interests, which **adds confusion and hinders possible dialogue**, consensus and decision-making processes regarding the RBA. On top of this, an assessment

⁹⁶ Personnel refers to office-bearers, staff, and other members of the governing body.

of accountability of each of the institutions involved in the RBA with regard to their own attributions, offers additional insights, as summarised in Table 18.

Accountability of sectoral institutions involved in the RBA	
Level	DESCRIPTION
Sectoral level	Instrumental conditions for effective accountability are met. Yet, allocation of responsibilities is not always granted to those institutional levels that best match the scale of issues and values at stake. This is a major constraint not only for the RBA itself but affecting the process of "deconcentration" (sectoral) at a national level in Morocco.
RBA level	<p>The RBA itself is not always addressed explicitly in the formal allocation of responsibilities of the sectoral institutions and organisations that are meant to be part of the RBA governing body (such as the ANDZOA, IRAT-SM, CRE-SM, etc.). Consequently, there are multiple occasions where some of these stakeholders claim their own rights but not their own obligations regarding the RBA, while claiming that other stakeholders should comply with their duties.</p> <p>The formal sectoral attributions (in terms of rights and duties) of the forestry administration (HCEFLCD and the DREFLCD-SO) and the ANDZOA need to be discussed and clarified because they are a frequent source of misunderstandings, tensions and even concurrence. A non-detailed analysis might conclude that these two institutions have overlapped attributions regarding the RBA, while in reality:</p> <ul style="list-style-type: none"> • Formal allocation of responsibilities explicitly regarding the RBA is exclusively attributed to the HCEFLCD and its regional body, the DREFLCD-SO. • HCEFLCD and the DREFLCD-SO are also in formal charge of the conservation and management of public forests and protected areas (at national and regional levels respectively). • While the ANDZOA is, since its creation in 2010, in formal charge of "integral development" of the argan forest region and the oasis region. Both areas geographically overlapped with those declared as RBA and RBOSM.

Table 18: Accountability of sectoral institutions involved in the RBA, formal sectoral attributions and frequent misunderstandings.

4) LAW AND POLICY

In Morocco and in the RBA **there is a need for a legal framework well-adapted to the singularities of the BR model**. The establishment of management and/or coordination structures dedicated exclusively to BRs is lacking. There exist **counterproductive and competing governmental programmes at national and subnational levels and insufficient intra- and inter-institutional coordination** (operating cross-level and cross-sectoral). All these elements interact with each other, generating complex dynamics in which they are both cause and consequence of the resulting reality.

Formal duties or attributions of the different sectoral institutions involved in the RBA are frequently not properly aligned. And this lack of alignment causes at times concurrence and contradictions.

The RBA, as the first Moroccan BR designated more than twenty years ago, has been subject to all the former constraints at the national level related to the legal, institutional, and policy frameworks.

This research reveals that the non-integration of the term BR in the national legislation and the lack of specific regulations for the RBA is more harmful than restrictive for local populations, as it prevents regional administrations and local authorities to deny or restrict authorisations to large investors⁹⁷ or to demand better impact studies. In this respect, for many social organisations the integration of the

⁹⁷ It is these large and medium-sized companies who cause the greatest risks for the conservation of ecosystems and biodiversity in the RBA (e.g. mining companies, large urban development projects, large farms, large infrastructure projects; not always with the proper social and environmental guarantees).

RBA into the law would be welcome because it would serve as a tool for them to demand that their political leaders enforce the law against large projects that do not leave proportional local benefits.

** RBA must also be defined in the legal framework.*

** It is necessary to look for synergies between the national sustainable development strategy (2017-2030) and the RBA. Local and regional authorities (Regional Council)*

5) INFORMATION AND TRANSPARENCY

Transparency, access to information and information sharing are major issues that need to be addressed. The relevant role of the media has also been pointed out by several respondents. Table 19 outlines some facts observed regarding **information availability** to be considered.

Issues of **personal ethics and morals, values, self-responsibility or self-accountability, trust, non-conflicting interests, the level of "acceptable risk" perceived, etc. are elements commonly present** in cases of access to information and information sharing (either a single factor or the combination of a number of them).

** Access to information is a major issue (the importance of the unsaid).*

** Communication and consultation must be institutionalised. And each one must find its own interest.*

** An information-sharing system must be set up.*

** It is also necessary to be transparent and open with the population, ...(to promote) discussion platforms at the level of rural communes and a great effort of mediation and trust-building.*

** And do not forget the role of the media. There is not enough communication.*

Facts and dynamics influencing information availability in the RBA	
Fact/Dynamic	Description
Online access to public information	Big efforts in the last years to make information publicly available through web pages must be highlighted. Yet, there is still a high level of non-coordination and complexity in some institutional webs that hinders effective access to relevant public information.
Language	Relevant public information is not always presented in the languages that the stakeholders understand (i.e. Arabic, Tashelhit and French). Relevant documents are not always translated into the three main languages (i.e. Arabic, Tashelhit and French), neither some web pages.
Language's register	Written information is not appropriate/accessible to a large share of RBA stakeholders who just understand the spoken language (e.g. many rural women). Technology in the country allows for audio or video formulas of accessing information. But it has not been considered as a relevant issue to be prioritised up to date. Additionally, translation formulas in some forums and participation events are insufficient to guarantee an equal debate and prevent some stakeholders to participate proactively or to influence the debate. This has an impact on fairness, inclusivity and empowerment.
Physical access to public information	Other public information not available through web pages may be subject to different access constraints. There are strong implicit and explicit informal dynamics of power, interests, (mis-)trust, etc. preventing availability and effective delivery of public information and access to relevant public information. This issue goes beyond the RBA. In other cases, the lack of willingness to share certain documents or information relevant to a certain stakeholder, may be just a question of (i) the time and effort needed to deliver the information and (ii) non-aligned priorities.
Informal channels	Alongside this prevailing trend of hindering access to public information, there are other individuals, organisations or sub-groups within larger organisations that are willing to share relevant and updated information; on many occasions even through informal channels and despite personal efforts (in terms of time and resources, though not only).

Table 19: Facts and dynamics influencing information availability in the RBA.

6) LANGUAGES AND CONCEPTS

In the RBA there is a need for a shared (conceptual) language among the main stakeholders. Particularly that referred to the concept and model of MAB-BR, which still needs to be widely understood and appropriated.

** It is key agreeing on definitions of management and governance for each actor (organisation and/or individual)*

** The challenges are ... to reunite the definitions of each one.*

In this sense, commitment to the BR concept and commitment to MAB provisions (i.e. integration and sense of ownership of the provisions of the UNESCO MAB programme by the governance authorities) remains a big challenge in the RBA and in Morocco in general. This commitment refers to all the stakeholders implied, but it is of special relevance in the case of cross-scale political commitment, at both formal and operational levels.

** Secondly, the concept of RBA needs to be appropriated.*

** There is a need to ... promote knowledge of RBA so that the concept is appropriated.*

** There is a lack of collective intelligence. People need to embrace the discourse.*

** Local people are detached from the term (BR) but not from the action for the RBA.*

In Morocco there are problems related to the perception, integration and enforcement of the MAB programme and to the development of the operational bases of BRs (e.g. management, governance, coordination).

1.3. RBA VISIONS OF FUTURE

Another issue of high relevance is the institutional stakeholders' perceptions concerning the RBA future scenarios envisioned. Thus, after the comprehensive multiscale analysis of institutional actors in the RBA, and the in-depth examination of the institutional approach to environmental governance of the RBA, this third stage of analysis incorporates RBA visions of future.

This section illustrates which are the institutional actor's visions of future regarding the RBA and how and why they may end up reproducing previous dynamics or, if properly addressed, they may be key to envisioning an inclusive environmental governance model in the RBA. These visions of future are explicitly referred to the feasible scenarios in mind (realistic and positive or desired) of the direct and indirect institutional actors interviewed; that is, the 'extended peer community' of decision-makers linked to the RBA. I have also considered stakeholders' concerns and proposals for the future governance of the RBA. Data were obtained from the specific code and subcodes assigned during the content analysis of all sources of data at the RBA level. However, the most relevant source of data were the specific questions included in the in-depth semi-structured interview guide (Table 20). The results of the analysis of perceptions about the future are presented below, in the form of some of the most relevant quotes and discourses indicating the institutional actors' subgroup or category (e.g. researchers, consultants, civil servants, social actors, NGO staff, etc.).

Topic	Example questions
Participants' RBA vision of future	1) According to you and your diagnosis, what do you think RBA will become tomorrow? What will be the evolution of the RBA in the future? 2) What feasible image should RBA ideally portray in the future? 3) What are the main challenges? 4) How do we achieve this ideal vision of future? How do we succeed? / What are the keys, the responsibilities? Priority projects/activities?

Table 20: Questions discussed during the in-depth interviews addressed to RBA institutional actors regarding feasible visions of future (realistic and desired).

1.3.1. REALISTIC FUTURE

Regarding question 1 in Table 20, in a short-medium future term scenario in which all the present dynamics (positive and negative ones) remain the same within the RBA, three different visions of the future coexist on what is to come: pessimistic, analytical and optimistic.

Most of those who have quite a **pessimistic** vision of what is to come are either representatives of regional civil society organisations related to the RBA, experienced consultants in the fields of environment, development and or sustainable tourism closely linked to the RBA and NGO staff of multi and bilateral cooperation agencies or institutions, also highly experienced and close to the RBA. Their visions are clearly represented by the following quotes and discourses:

"In my opinion, there will be no more RBA, if it goes on like at present and if nothing is really done; so, I think..., I don't know, I don't know, frankly. I am rather pessimistic about the future of the RBA" (consultant RBA, February 22, 2019).

"In the third decade [of the RBA], if nothing changes, we risk losing the BR label because at the level of the governing bodies it does not work. On the other hand, the regression of natural resources is worsening, there is a loss of biodiversity, degradation of land and soil, and the rural exodus will continue, the cultural heritage will be in peril, will degrade, all the material and immaterial, that means the local architecture,... so we will be at the mercy of modernisation [globalisation], which is advancing very, very fast. Without a strong cultural identity and a strong attachment to cultural identity we will be at the mercy of modernisation... the culture of wild capitalism will devour everything so... By protecting this cultural heritage, by valuing it, we will be in the process of local development and we can stop the rural exodus....this is the negative case." What does it mean to you to value it? *"economically, I need to live with this culture because ... when we say value the heritage, it means to develop a social and solidarity economy..."* (RARBA, March 12, 2019).

Those who have a more neutral or **analytical** vision, acknowledge different overlapping dynamics which may be contrasting and contradictory. They come mostly from academia and regional administrations and institutions closely related either to conservation and local development or to the RBA itself. The following quotes and discourses illustrate this vision:

"The RBA in the future, is a major opportunity and an imperative for Morocco internationally to succeed in the ODD. There is no room for error. [However] there are two rationales at two speeds: that of territorial development ("integral" development) which does not work, there is no strategy; and that of sectoral development which is working. "We can't make mistakes"...because we have lost a lot of time..." (land planning expert, February 18, 2019).

"If we continue like at present, without doing anything else, we always take a risk... We will face things we do not understand we are not going to understand the link between the population and its territory with a new generation [of young people], with other identity parameters, needs, etc., and that is the risk for me. Maybe the RB concept does not mean anything to them."

[However] *"It is always going to be RBA. Some people talk about degradation, no! but I think it is going to stay the same. The Arganeraie's strength is that one, it has a great strength of adaptation ... We will see excessive slabs on the uses (overuse) and multi-purpose (overexploitation), ...on the plain [of Souss and Chtouka] for example, ...it is sure that in the future it will be a fragile ecosystem, there is the lowering of the phreatic water table, ...the extension of town planning to some areas, the establishment of agriculture ... it is a zone of passage as well (transhumant herds). But there are also areas where there is the regeneration of the natural ecosystem [of the argan forest]... If we take a general vision [of the whole RBA], we won't have problems, but if we take a restricted vision on some areas, yes! there will be problems...."* (DREFLCD-SO, April 15, 2019).

Finally, there is a rather **optimistic** vision also present, coming from representatives of regional public agencies, civil servants and heads at the national level and other experts and consultants at the national and regional levels. Relevant quotes showcasing this more optimistic vision are the following:

"Civil actors and others will react after the risk of losing the status of BR. Also, institutional actors. There is an increasing awareness" (consultant RBA, March 12, 2019).

"I remain optimistic. We are on the right track (meetings, dialogue, ...)" (ANDZOA, February 28, 2019).

"A difficult question, really difficult. So, the change will be quite slow. We still have a beautiful RBA ecosystem with slow changes. Probably a strengthening of industrialisation and urban centres, of urbanisation, but one that is not too bad either. This is a specialist point of view of BRs: we should not always try to keep the RBA in a picture...let's say...it is not a national park. We are not here to always "knit by hand" to say we are a BR, that is not the point. We have a cultural heritage that can also evolve,... I think that is what it's going to be, an industrialisation in the buffer zones (not too negative), an urbanisation, but with a heritage that will remain what it is with a slow change I imagine. This is the image I have" (HCEFLCD, February 22, 2019).

1.3.2. DESIRED FUTURE

In response to question 2 in Table 20, visions of an ideal feasible scenario for the RBA in which everybody does their best, from the point of view of the different direct and indirect institutional and social (civil society) actors of the RBA, focus on three main issues: (i) willpower, dialogue and self-accountability, (ii) adequate public policies, and (iii) inclusivity.

First, **political will**, stakeholders will, dialogue and agreement and assumption of responsibilities. As highlighted by the following quotes:

"It all depends on the political choice because the frameworks are there, the biosphere approach is there, the laws are there, the SDGs to bring them down to the field are there, so there must be a political will for the stakeholders to sit down and see how to develop the territory. So, local actors need to sit down at the table. There needs to be political will for them to sit down at the table and each one does his or her job/responsibility" (RARBA, March 12, 2019).

"If we take the necessary actions and good wills are around the table to try to create this management body and mobilise all partners and stakeholders; we should create a good image for our BR, which could have a very positive impact on our region, on its population, its economy, its development in a general way ... an accessible feasible ideal." Are we going to make it? "We can do it!, it depends on the means that we are going to put in place and on the will, and with a very good governance, I think we can do it." (sustainable tourism and development expert, March 06, 2019).

"It should illustrate a natural area where there is a consensus between conservation and use, i.e. valorisation. It is not very difficult, but we have to work to achieve this objective" (DPEFLCD, March 07, 2019).

Second, adequate **public policies** more respectful and better aligned with prescriptions of sustainable development:

"The ideal would be public policies paying more attention to the respect of nature and the environment, i.e. the Green Morocco Agriculture Plan, the Cariaty Tourism Plan. These are public policies which put forward the protection of nature and the environment." And is that feasible? "We said the ideal, eh! A Green Morocco, for example, respectful of water resources, tourism respectful of natural and cultural resources, is what is needed." A sustainable development approach to all sectoral policies that impact or have an influence on RBA? "Yes, absolutely" (HCEFLCD, February 22, 2019).

Third, is an issue of **inclusivity**, either for the population to empower themselves and influence public policy, and for the institutions to create the necessary spaces and dynamics for territorial involvement (in parallel to societal information systems allowing for anticipatory planning strategies):

"Ideally, it would be for the people of the RBA, especially the local communities, to organise themselves, to become aware of the value of their heritage, and to influence public policy, including the management of the RBA. So that would be the ideal, and it would actually work" (consultant RBA, February 22, 2019).

"But if today there is a territorial involvement ["portage territorial"], it means, we must animate the territory, this generation which is there, today we must prepare it. So, they will evolve towards their choice, but with an RB concept. And this is the role of everybody, associations, elected representatives, etc., in this process. The guarantee for me, first, is anticipation, we must always know towards where it evolves, the parameters that evolve and impact, social mobility, and then the economic and climatic change. But also, I will work with whom?, because to define this relationship between territory and users/population, where I will work? here in the office or in the field? only at the provinces [level] or we will go to the villages [level]?. And this is still a debate [to be held]" (DREFLCD-SO, April 15, 2019).

1.3.3. MAIN CHALLENGES TO FACE

Concerning question 3 in Table 20, the major challenges to face, from the point of view of the different direct and indirect institutional and civil society actors of the RBA, are: broad inclusiveness and agreement (particularly considering local population), environmental preservation, balance between conservation and development, multi-stakeholder's accountability and governmental political will.

"[The major challenge is] **to involve everyone, the stakeholders and to get everyone to agree**. This has an impact on governance. Another important challenge is the **adhesion and involvement of the local population**. Another major challenge is **the preservation of the environment**, continuous degradation, either through ignorance or knowledge, e.g. intensive agriculture with a mercantile vision" (sustainable tourism and development expert, March 06, 2019).

"[The challenge is] **how to reconcile the protection of the environment, the conservation of the argan tree with the development of the area**." How to overcome this challenge? "I think it is up to the RBA committee to find the answer, hhh...I think we must think about compensation, because it's a very effective way. You must compensate people for getting involved" (DPEFLCD, March 07, 2019).

"With the political will [ideal future scenario] is feasible, each actor must take responsibility." Political will at what level? "At all levels, from national to regional to local." Where is the weakest point in terms of political will? "It starts at the national level, if the national level does not let you do what you want at the regional level, if the regional leaders are guided at the central level...and that's the case... So now there is a kind of constraint or barrier that comes from the central level, for example, we are regional officials, each of us has his command button in Rabat, so they don't talk about his case but they reflect the opinion of the others." So, if we manage **to have the political will at the level of... "of Government!"** And is it feasible? "ahhh (whispering) **this is the big challenge**." (RARBA, March 27, 2019).

1.3.4. PROPOSALS AND KEYS FOR ACHIEVING THE DESIRED FUTURE SCENARIO

Finally, answers to question 4 in Table 20 point out towards various keys and proposals to achieve the ideal feasible vision of future imagined by respondents at the RBA level. Most of them reflect the **demand of stakeholders to address** some of the most **relevant constraints** acknowledged above, as shown by the following representative quotes:

"The key is **to bring the local actors to the table and to have a political responsibility**" (RARBA, March 6, 2019).

"The first key is **the governing body**. There needs to be **an administration exclusively in charge of the RBA, a governance body, an RBA committee, an RBA agency or the like** ... we need an RBA Agency managed at regional level, which is like regionalisation. With the presidency of the region [Regional Council] and the secretariat of DREFLCD-SO. I think that, at the regional level, it will be sufficient, but if we do it at the provincial level it is even better, but it will increase the costs. In any case, if there are a dozen engineers with **different profiles**, i.e. a forester, a pastoralist, a sociologist, etc., with the **means (human and material) to work**, it will be good to get this RBA back. I have always said that the RBA deserves that we deploy these resources..." "The second key...we need **an action plan that is well done and to apply it within the [RBA] zoning...** [in which] **responsibilities** are everyone, all the actors involved, the interveners, the State, the Interior, land use planning, agriculture, are the people in charge" (DPEFLCD, March 07, 2019).

"There are two levels. There is level one [the RBA] as a structure, as a concept, as a project, the RBA exists, it is there and it works, yes. But there is the dynamic RBA [level two], with a soul, with an inertia, and with actors who are also there, they will always be there for the RBA. And for the second option, **the key is the local population**. And the local population are not people who are in the city and on weekends they go to their villages; the local population is **the debate that will take place on the field/territory itself, they are the villages. How to have model villages in the future that are committed to the RBA (that are bearers, supporters, promoters)?** This is a dream, but for me it could be the key to a lot of problems, and a **guarantee for the future**. And maybe that is where the RBA and the APAC may be linked, it is somehow there. **Each APAC is a small RBA**. The BR is a big model/approach where concept and theory are paramount. It is a big APAC model, but rather conceptual. The APAC, no, **it is not the concept (what matters), it is the action of the concept that counts**." Is it feasible to integrate them? "Yes, of course it can be done" (DREFLCD-SO, April 15, 2019).

"The first thing to do is **to communicate a lot about the concept(s)**. I would add to that, to communicate a lot **about the heritage values of the Arganeraie... it is necessary that the local communities are well represented** (a multipartite decision-making structure). So, if they are well represented, if they become aware of their heritage, etc., I am sure that **they will influence the policies** and it will go towards a vision of the development of this territory that would be in harmony..." And is this feasible? "Yes, it is feasible. I tell you that the ingredients are there, ... because we are in an advanced regionalisation

process, so decisions can be taken at the level of the Region. We are also in a process of decentralising, the law is there, so it should be implemented. And this could be a good starting point for another form of RBA management” (consultant RBA, March 12, 2019).

*“What would be interesting would be **to take part of the RBA and really use it as a pilot for what could be done across the whole of the RBA.** That includes two axes. One axis for developing the pilot and one axis for generalising the lessons of the pilot. ... But generalisation is also something that needs to be prepared, which means capacity building, laws, etc... and these are reflections that should go hand in hand with... in parallel with the pilot.” ... “[Also] Because you know that RBs are not integrated into protected areas, so the law on protected areas does not apply to the RBA, and there is a problem there. Today in Morocco the law provides for 5 categories of protected areas, but within these 5 categories there are none that integrate the RBA concept. What would be interesting is to see how the concept is integrated...because today we have 4 BRs, not bad... So, **either we need a very specific law for the BRs, or we must see how to integrate them into the law on protected areas.** I think that a specific law is better.” (environment and development expert, February 22, 2019)*

2. LOCAL AND CUSTOMARY GOVERNANCE IN TISSKJI

Chapters two and three of the results section respond to the **second specific objective** (S.O. 2), which is to analyse the bottom-up processes of local and customary governance in the two selected rural local communities within the RBA.

As explained in the methodology, the informed selection of two relevant local study cases aim to showcase how different community-level realities and dynamics may perform different interactions with the RBA and its related institutions. Further detail on the selection process and criteria for the two case study local communities can be consulted in the corresponding section of the methodology chapter (see Figure 18 and Table 6).

In short, chapters two and three, analyse two original, yet contrasting, examples of local communities' governance within the RBA and their *agdal*-type organisation nowadays. To address the second specific objective, in both local study sites, I have developed the same research design and methods (see Fig. 14 for the “methodological design of the study and experimental set-up” and Fig. 20 for the “Specific Objectives versus Methods’ Logic”). Thus, focusing on several aspects considered essential to understand locals’ worldviews, practices and perceptions, the **results presented in this chapter are structured as follows**:

First, the local community boundaries and their *agdal* boundaries have been collectively discussed, agreed, and drawn by community members in two participatory mapping workshops (i.e. women and men PGIS workshops plus joint discussion of resulting maps).

Second, I have elaborated a diagnosis of local actors in the community, through the identification and mapping of the main actors and a social analysis CLIP (i.e. analysis of the relationships of collaboration and/or conflict, legitimacy, interests, and power among actors), following the same methodology as for the RBA level actors’ analysis.

Third, I have explored in depth how each of these communities perceive and manage (i) their *agdals* and (ii) the community itself. This ethnographic description and analysis of customary and local governance includes: (1) the ethnographic characterization of the *agdals* as a customary local management and governance system; (2) the ethnographic description of Tisskji’s singular local governance model and some ethnographical remarks; (3) two collective workshops (women and men) where the community self-assessed their perceived resilience and explored the potential of traditional management practices for biocultural and community conservation nowadays; (4) a SWOT analysis of the community and *agdals*; and (5) the main local concerns arisen from the qualitative content analysis.

Finally, as in the case of the RBA, I have conducted an analysis of local perceptions concerning their visions for the future in their communities (realistic and desired feasible futures).

In addition, to avoid or **minimize framing failure** at the local community level and enhance inclusivity in my research, I chose to: (a) validate the community-level research goals with local representatives; and (b) set the spatial limits of the case-study selected, together with the local population (i.e. PGIS workshops) in each local community (see Fig. 15). This is illustrated in the results of chapters two and three. Moreover, the ADL members of both communities acknowledged in the initial meetings that

the combination of research methods agreed with the ADL in advance⁹⁸ offered useful information to the community leaders in charge of the local governance of their *agdal* and community.

I present below the results for the first Local Community, **Tisskji**, in the High Atlas mountains (results' chapter two).

2.1. COMMUNITY AND AGDAL DELIMITATION

As mentioned above, the initial step was to explain and discuss the topic and research question with the local community (at various levels, i.e. association, Jmaâ, leader family); because no one knows the territory better than its inhabitants. Afterwards, the second step was to ask them to assist me in spatially determining the scale and area of study based on my research question. I did so, aware of the spatial, administrative, legal and tribal complexity of the study area at the local level in relation to the research topic (a challenge easily faced through LEK and TEK).

It was during this period of exchange and discussion that one of the first results became evident: the *agdal* and the Local Community are not the same thing to them, and yet both are of great importance. Then, we (a) discussed and defined the concept of *agdal* for them, (b) discussed and defined the concept of Community, and (c) we also agreed on the best way to carry out the participatory mapping (PGIS) workshops in Tisskji considering the characteristics of the community (that is, concluding to segregate by gender but not by age).

It was based on this collective construction that I conducted the participatory mapping workshops afterwards. As described in the methods section, in both participatory mapping (PGIS) collective workshops (women and men), I first explained to participants the aim (i.e. to properly establish with them the study area, the geographical limits of their *agdal* and their Community) and the PGIS method (that is, the technique of collectively drawing the limits over the printed map). Second, the participatory maps were discussed, agreed, and manually drawn; after a quick round of comments, doubts and collective discussion on the concept and definition of community, identity and sense of belonging. Third, I digitised the results with ArcGIS and printed them again in an A0 size map. Finally, I validated (various months after the initial workshops) the digitised PGIS with the community to check if my interpretation of results was correct and incorporate their remarks if necessary. Subsection 2.1.1 introduces the visual outcomes of the PGIS workshops and subsection 2.1.2 presents the main findings in terms of content and insights.

2.1.1. PGIS WORKSHOPS

The **women's** PGIS workshop was held on 16 October 2018 with 14 participants (12 adults and 2 wise old women). The session took about 2.5 hours. Participants felt much more comfortable talking than drawing on the map, so we spent some time exchanging verbally and then decided that the limits discussed and agreed upon by all should be transcribed on the map by the host.

⁹⁸ Namely, PGIS workshops, ethnographic characterization of the ICCA and the "ICCA Resilience and Security Tool".

PART 4. RESULTS

Figure 77 illustrates the results from the workshop, in which the mapping process (A) and the collectively handwritten result are shown (B). Figure 78 presents the final map digitised using ArcGIS and validated by the Community.



Figure 77: Women's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tisskji and the Community. (A) Production of the map. (B) Result on transparent sheet handmade during the workshop (Romera, 2018).

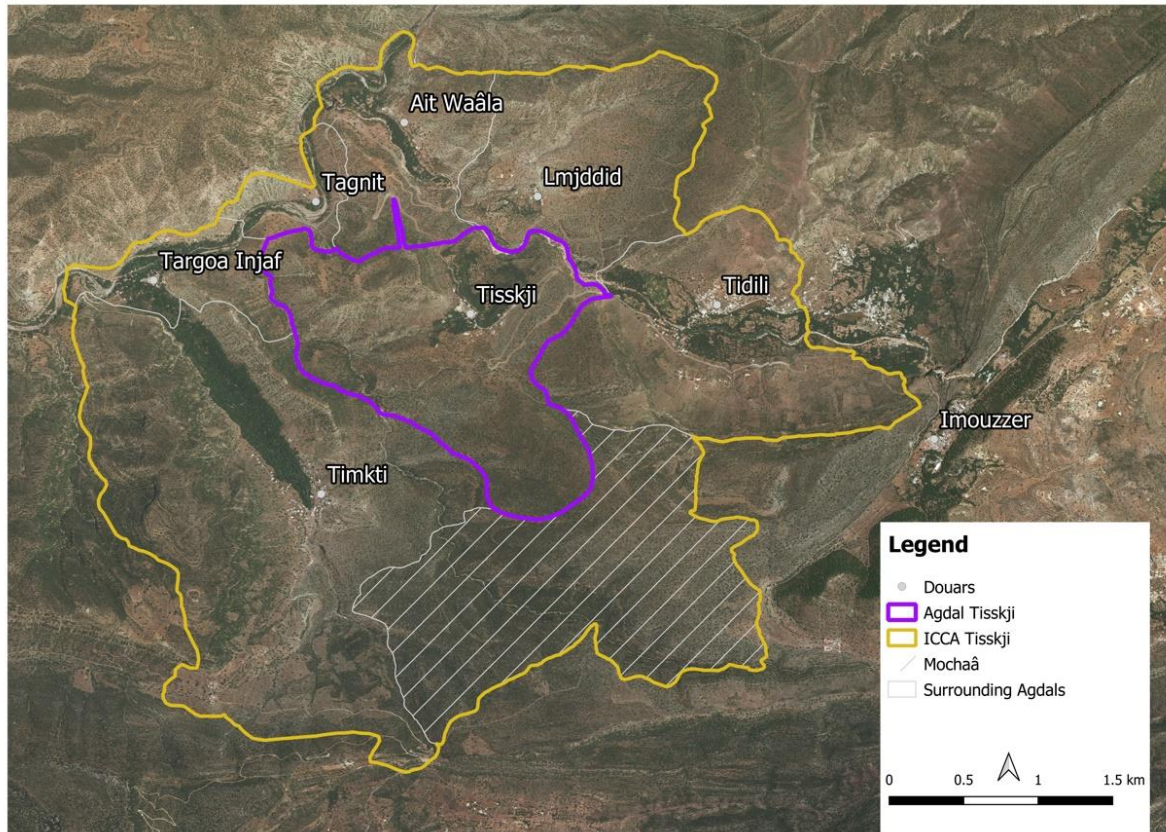


Figure 78: Women's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tiskji and the Community. Resulting map digitised with ArcGIS.

The **men's** PGIS workshop was held on 13 October 2018 with 12 participants (5 adults and 7 wise old men). The session took about 2 hours.

Figure 79 illustrates the results from the workshop, that is, the mapping process (A) and a later field trip, with the *agdal* guardian, the *Mokadem* and a community leader, in which we checked and marked with GPS the *agdal* and Community limits discussed during the workshop in which (B). Figure 80 presents the final map digitised using ArcGIS and validated by the Community.

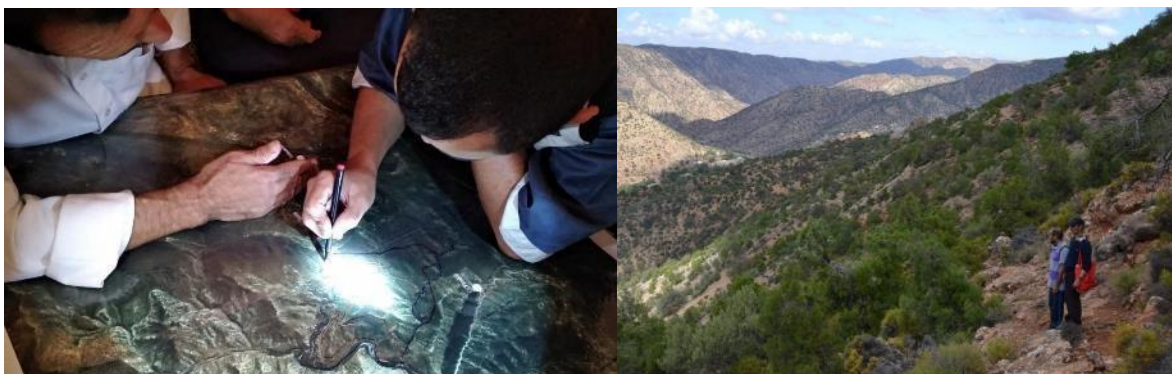


Figure 79: Men's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tiskji and the Community. (A) Result on ArcGIS. (B) Production of the map. (C) Field GPS validation of the agdal limits discussed during the workshop (Romera, 2018).

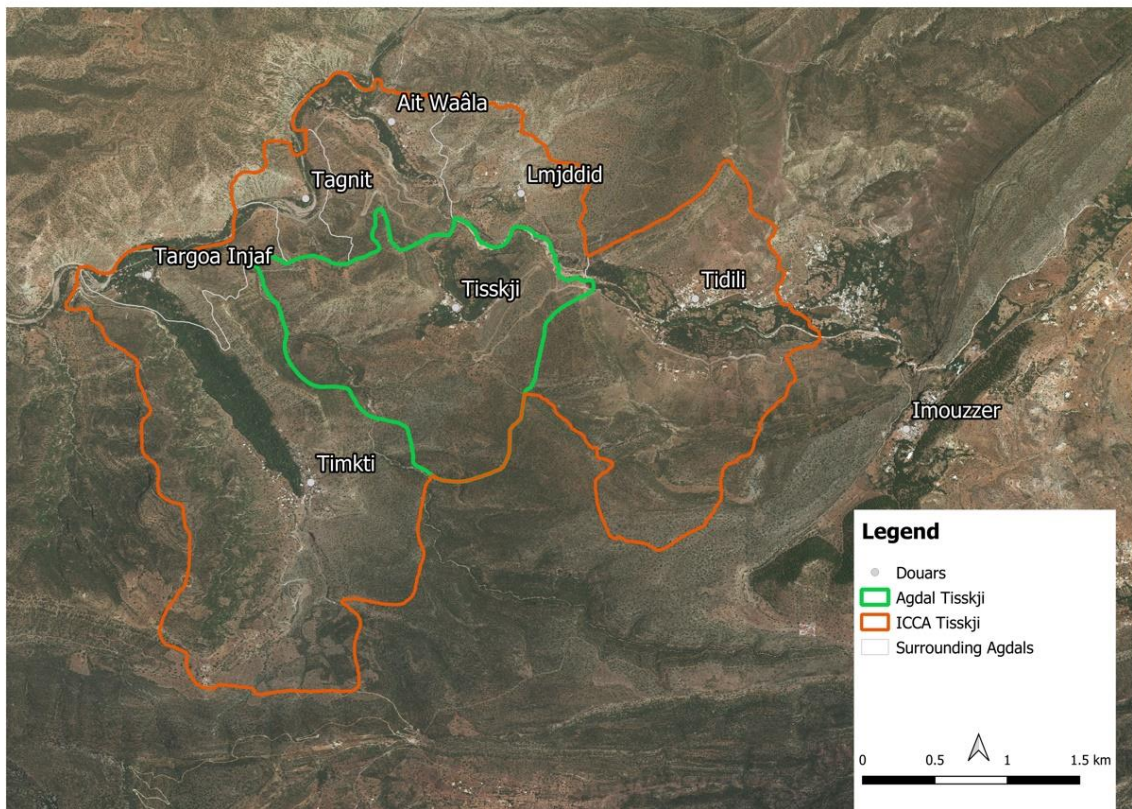


Figure 80: Men's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tiskji and the Community. Resulting map digitised with ArcGIS.

Right after the second PGIS Workshop (the 16 October 2018), we had a **women-men joint discussion of the PGIS workshops'** results with some participants of each group. The session took 0.5 h. We overlapped the two transparent sheets handmade by women and men during the previous workshops to analyse and collectively discuss the differences. Figure 81 illustrates the joint discussion (A) and the comparative men-women map (B).



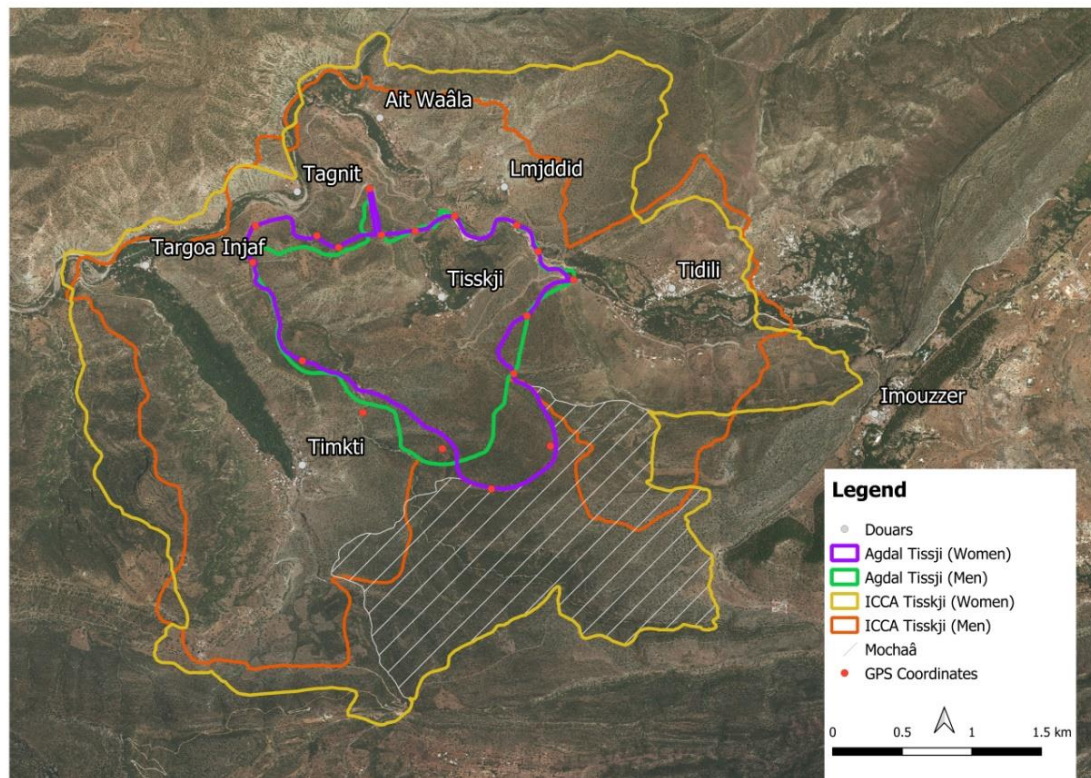
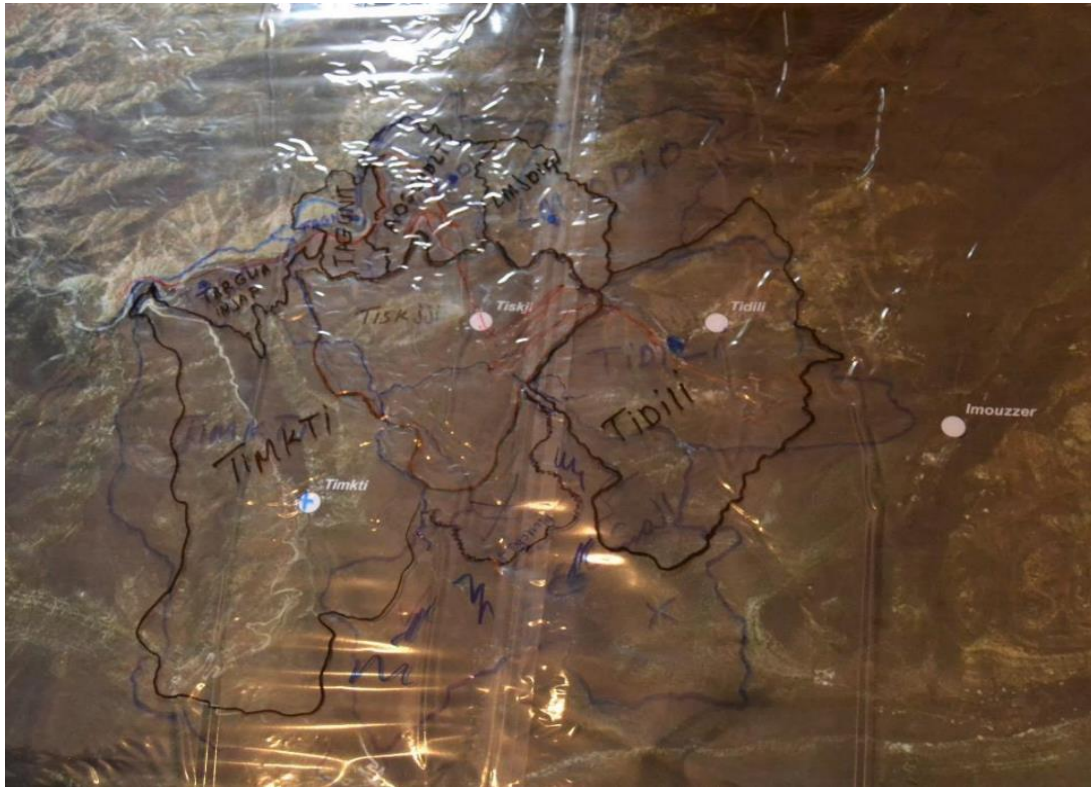


Figure 81: Workshop on participatory mapping (PGIS). Delimitation of the agdal of Tiskji and the Community. (A) Sharing of the results of women’s and men’s workshops and joint discussion (Romera, 2018). (B) Comparative results overlapping the two transparent sheets handmade by women and men during the workshops (Romera, 2018). (C) Result of the overlapping digitised with ArcGIS, including the field validation of GPS coordinates.

2.1.2. PGIS: MAIN FINDINGS

First, the results from both collective PGIS workshops (women and men) confirm what already stated by the initial discussion with representatives from the local association, the Jmaâ and leader family; that is, the **agdal is not the same as the Community to them**. In Tisskji, for both, women and men, community spatial limits are the central *agdal* of Tisskji plus the *agdal* of the villages surrounding Tisskji⁹⁹, plus the *Mouchaâ* (common pastoral space where all the surrounding rights-holders communities¹⁰⁰ are allowed to enter and use when *agdals* are closed) as shown in Figs. 78 and 80.

Second, despite minor spatial differences in the boundaries drawn by women and men (Fig. 81), their collective definition of (1) community and (2) *agdal* is the same for all. **Agdal is clearly defined as the space to which they have customary access rights to natural resources** (as regulated by the legal texts on the argan forest of 1925 and 1938; see Fig. 13). Their “sense of community” however is not only bounded to the spatial limits of their *agdal* (too restricted, one douar), nor it is the whole tribe Tankirt (too wide, 50 douars) or the rural commune Imouzzer Ida Outanane (administrative municipality)¹⁰¹. During the collective discussion on the concept and definition of community, identity and sense of belonging, they claimed that it is not evident or simple to spatially define their identity and sense of belonging, because it depends on various factors (e.g. the context, the objective, etc.). One of the community leaders said: “For example, if I am in France I will claim I am Moroccan; if I am in Marrakech or Casa[blanca] then I will say I am Soussi or Tanant¹⁰² ...and all of us belong to the tribe Tankirt...”. The final agreement on **their definition of community** was referred to the context of my research. That is, referred to local governance, the link to their territory, sense of belonging and identity. Despite all of them belong to the tribe Tankirt, just above the family level their community is their douar and all the douars surrounding theirs, because it is within this area that the day-to-day closest relationships and interactions are developed (particularly young people and women, but not only). This definition is in line with the one mentioned on the conceptual framework by Borrini-Feyerabend and Hill (2015:184), and also in line with tribal history.

Third, the results from the joint discussion on the differences between the *agdal* limits drawn by women and men, show that **women in Tisskji know more in detail than men the *agdal* limits nowadays**, as they are the ones collecting the argan nuts every season. Each woman knows in detail every tree of her family and the ones that are right on the limit and so shared between two families. This was apparent during the workshop when we compared the results of both maps overlapping the transparent sheet made by men and women and I asked them to interpret the results themselves, including the differences.

Nevertheless, at a broader political and/or tribal level, men are in general more knowledgeable and better informed. The collective discussion around certain differences on the limits of the *Mouchaâ* area supported this argument. Women are the ones using the *agdal*, so they perfectly know the area and trees they use. However, those areas far away from the douar or village, of difficult access or used only by pastoralists might not be so well recognised by women in a map, even if the tribe has rights of

⁹⁹ Especially because the surrounding villages or douars are those with whose inhabitants the people of Tisskji have the closest and strongest daily relations (be they familial, social, economic, etc.).

¹⁰⁰ Surrounding villages to Tisskji are: Tidili, Togro, Timkti, Targa Injâaf, Tagmit, Ait Oanlla, Lmjdidc.

¹⁰¹ See Figs. 46 and 49 for Tankirt Tribe and Figs. 47 and 50 for the administrative division and overlapping with the tribal division in the “Study area” section.

¹⁰² *Soussi* is someone from the Souss Massa region in southern Morocco (where the community is located). And *Tanant* is someone from the Ida Ou Tanane ancient confederation of tribes (which is also an administrative province belonging to the Souss Massa region).

use over the resources there (simply because women do not make use of these areas). Men might not be so precise pointing out the limits of each family at a tree-level within their *agdal*, especially if there has been no past conflict, but they **are well aware in general about the *agdal* “external” limits. This is because the external limits are the relevant ones when it comes to political issues among tribes or with the government** (either *Makhzen* or *Boughaba*¹⁰³). It is in these occasions when men need to know their rights in order to properly defend them. In short, women's knowledge about *agdal* limits is based on use, while men's knowledge is based on ancestral rights and tribal political issues.

It should be highlighted the empathetic and **non-conflicting spirit of the community leaders towards the state administration** (i.e. *Makhzen*) nowadays; particularly towards the forest administration (HCEFLCD). However, community members as a whole refer to the forest administration as "les eaux et forêts" (neutral sense) or "Boughaba" (negative or derogatory sense) depending on the case. This openness of current community leaders to collaborate and to understand the “other part” while defending their own interests and looking for solutions in present time seems to be the pillar for the hybrid type of *agdal* system we find at present in Tiskji. One natural resource management and local governance system which remains active, adaptive, and resilient, as we will see in the following sections.

We validate with GPS the hand-drawn *agdal* boundaries of the workshops, during two field trips in which I was guided by the *agdal* guardian, the *Mokadem* and a community leader.

Subsequent community workshops to assess and validate the digitalisation of the hand-drawn transparent sheets were conducted several months after the fieldwork (08-12-2019, 15 participants). These validation meetings had an important role and significance beyond the mere deepening in the interpretation of the results. Unexpectedly, they became a relevant proof for the community members of what participatory research and respect for local knowledge mean, and a (well-deserved) reason of pride. Participants and community leaders were surprised that we, as researchers, appreciated their corrections and considered them relevant.



Figure 82: Community workshop in Tiskji to assess and validate the digitalisation of the hand-drawn participatory maps (several months after the fieldwork) (Romera,2019).

¹⁰³ *Makhzen*: State or Government “power”. *Boughaba*: Forests Administration (and foresters) “power”.

2.2. LOCAL ACTORS ANALYSIS

2.2.1. STAKEHOLDER IDENTIFICATION AND MAPPING

I have analysed the main local and regional actors having a direct influence in the local dynamics regarding environmental governance at present (Reed et al., 2009), as an integrating part of the comprehensive description, analysis and understanding of these local dynamics and worldviews. By “main local actors” I mean those individuals, local organisations and groupings (i.e. douar/village level) who have a direct influence in the local dynamics regarding environmental governance at present (2018-2019); whereas I consider “main regional actors” those who have a direct relationship with the former “main local actors” regarding environment, development and or local governance (in the case study community considered). Table 21 shows the full names and acronyms of these relevant local actors in Tisskji, including regional and local authorities, other relevant regional institutional actors, customary institutions, associations and NGOs, local SMEs, local leaders and other influential actors and groupings.

TISSKJI		
Key actor acronym	Full French name	Full English name
Caïdat Imouzzer	Caïdat de Imouzzer Ida ou Tanane	Local administration
Leader family	Famille principale	Local leader family
Jmaâ Tisskji	Jmaâ de Tisskji	Traditional customary authority
IMAL Association	ADL – Association de développement locale	Main local development association
Nakhil Association	Association pour l'eau potable et les déchets	Association for drinking water and waste
Tawsa Association	Association pour l'eau d'irrigation	Association for irrigation water
Cooperative Tourtatine	Coopérative féminine d'huile d'argan	Women cooperative of Argan oil
Cooperative Afyach	Coopérative féminine d'huile d'argan	Women cooperative of Argan oil
Women	Des femmes pas liées aux coopératives	Local women non-linked to cooperatives
SMEs Tourism	PME Tourisme	SMEs Tourism
Nearby Douars	Villages environnants	Surrounding villages
SMEs Argan	PME Argan	SMEs Argan
Right-holders Association	Association des Ayants Droits de l'Arganier	Right-holders Association
UCFA Tissaliwine	Union des Coopératives des Femmes pour la production et la commercialisation de l'huile d'Argane Tissaliwine	Union of Women's Cooperatives for the Production and Marketing of Argan Oil Tissaliwine
Eaux-et-Forêts DREFLCD-SO	Direction Régionale des Eaux et Forêts et de la Lutte Contre la Désertification Sud-Ouest	Regional Department of Water and Forest, South-West.
Wilaya	Wilaya d'Agadir Ida Outanane	Regional administration, Ministry of Interior.
Conseil Régional SM	Conseil de la Région de Souss-Massa	Souss Massa Regional Council
Provinces	Province et préfecture	Intra-regional administration
Communes	Commune territoriale	Local administration

ANDZOA	Agence Nationale de Développement des Zones des Oasis et de l'Arganier	National Agency for Development of Oasis Zones and the Arganeraie
Agriculture DRA-SM	Direction Régionale de l'Agriculture Souss-Massa	Regional Department of Agriculture, Ministry of Agriculture
FIFARGANE	Fédération Interprofessionnelle de la Filière Argan	Inter-Professional Federation of the Argan Sector
PNUD Maroc	PNUD Maroc	UNDP Morocco
GIZ	GIZ - Coopération allemande	GIZ - German Cooperation

Table 21: Tisskji main local and regional actors' acronyms and full names.

An initial local actor's map of Tisskji (Fig. 83) shows a simplified local-regional level diagnosis of the main decision-makers in the community considered in Table 21, including their connections, degree of centrality to the network and actor's profile.

Results clearly show the high level of centrality of the two key local actors in the community (i.e. the leader family and the ADL). These two, together with the local authority (i.e. the Caïdat Imouizzer) and the customary institution -still active in Tisskji- (i.e. the Jmaâ), encompass the four main local actors. Besides them, one of the local women-led argan oil cooperatives and the PNUD arise as relevant actors in the community at the time of the research.

As mentioned in the previous RBA results section, the degree of centrality is a Kumu's Social Network Analysis metric representing the total value of each actor's (i.e. element in the network) connections. That is, each actor's weighted number of connections with other actors regarding the local community Tisskji. Additionally, "key actors" here are those with a maximum degree of influence (equal to 6 in a 0-6 scale) regarding the local community decision-making and governance. They are indicated in Fig. 83 with a central orange dot and are referred to either local or regional actors.

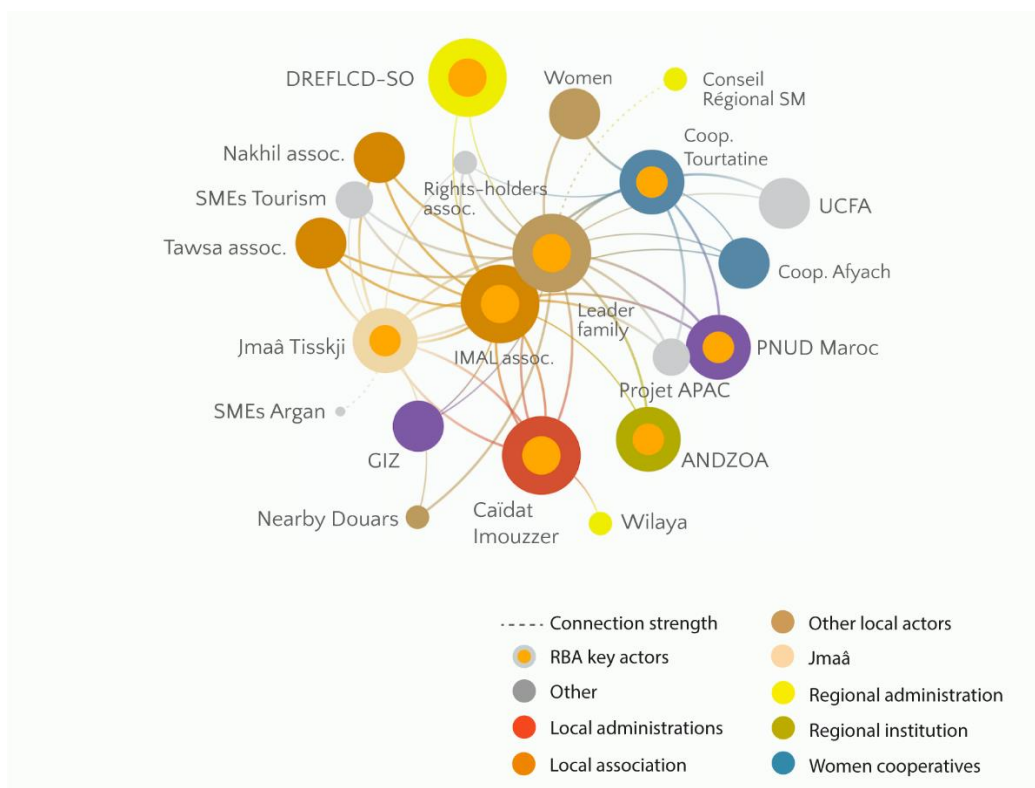


Figure 83: Tisskji local actor's map. Relationships and degree of centrality among the main local actors (Kumu, 2020). *For further detail on actors, see Table 21.

2.2.2. ACTORS' CHARACTERIZATION

To adequately describe and analyse the characteristics and relationships of main local and regional actors in Tisskji previously identified (see Fig. 83); I characterised them according to their CLIP descriptors) (Chevalier and Buckles, 2008). Figure 84 illustrates the result of a comprehensive CLIP social analysis in which I have divided each CLIP descriptor into its components (e.g. looking at the various components of the power or legitimacy variables). See Annex III for further detail on the comprehensive analysis of each CLIP descriptor for each actor considered. Even though the governance scenario of the community is not as complex as the one analysed at the RBA level, I deemed it useful to unveil (through the same method of analysis) which of the regional actors may be playing a relevant role at a local level, if any, and through which kind of relationships and scope.

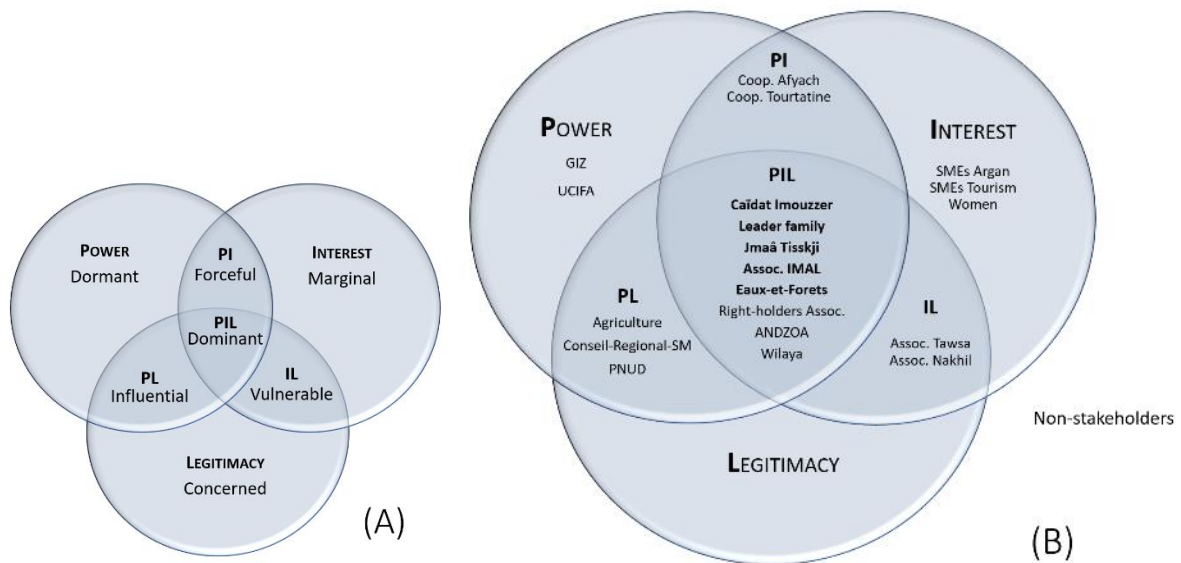


Figure 84: (A) Venn diagram showing the relationship between the various CLIP descriptors (adapted from Chevalier and Buckles, 2008). (B) Venn diagram showing the relationship between the various CLIP descriptors in Tisskji. *For further detail on actors, see Table 21.

In addition, the gains-losses matrix in Fig. 85 illustrates the second result from the comprehensive CLIP social analysis, in which the relationships of collaboration and or conflict/competition among each of the stakeholders are analysed and charted. See Annex III for further detail on the collaboration and conflict matrix.

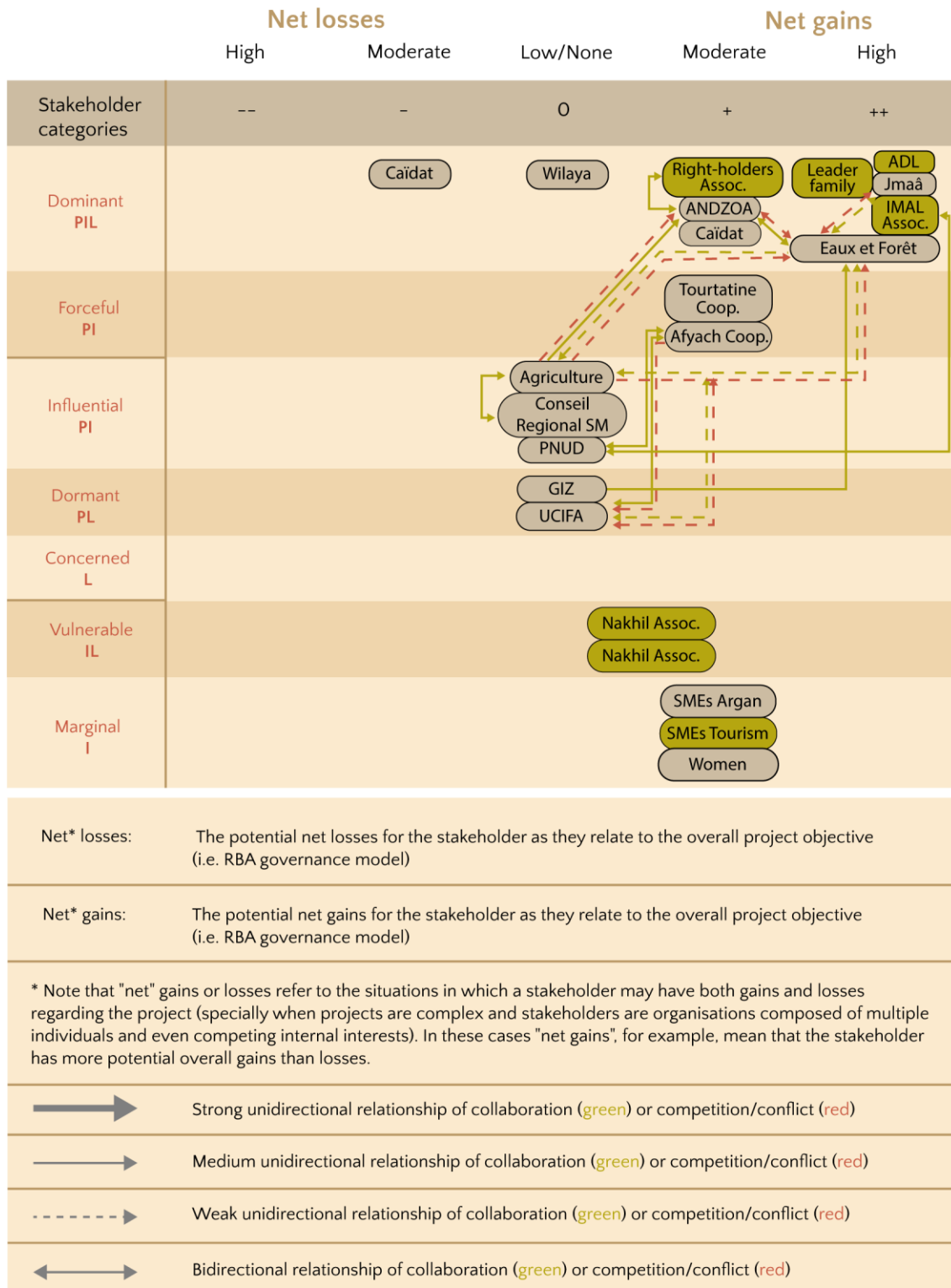


Figure 85: CLIP Social Analysis applied to the main local actors in Tiskji. Green and red arrows show, in a simplified and weighted way, the more relevant relationships of collaboration and competing/conflicting interests detected. Adapted from (Chevalier and Buckles, 2008). *For further detail on actors, see Table 21.

2.3. ETHNOGRAPHIC DESCRIPTION AND ANALYSIS OF CUSTOMARY AND LOCAL GOVERNANCE

As explained in the methods section and at the beginning of this section, I have relied on the joint analysis of the information obtained through different types of interviews, field notes, participant observation and collective workshops. In doing so, I have explored in depth how community members perceive and manage their *agdal* and the community itself at present. This ethnographic description and analysis of customary and local governance includes: (1) the ethnographic characterization of the *agdal* as a customary local management and governance system (subsection 2.3.1); (2) the ethnographic description of Tisskji's singular local governance model and some ethnographical remarks (subsection 2.3.2); (3) two collective workshops (women and men) where the community self-assessed their perceived resilience and explored the potential of traditional management practices for biocultural and community conservation nowadays (subsection 2.3.3); (4) a SWOT analysis of the ICCA and *agdal* (subsection 2.3.4); and (5) the main local concerns arisen from the data analysis (subsection 2.3.5).

2.3.1. AGDAL. CUSTOMARY LOCAL MANAGEMENT AND GOVERNANCE SYSTEM

Note for context that (i) the general singularities of the *agdals* in the Arganeraie region have been already explained in subsections 3.2.2 and 3.2.3 of the conceptual chapter and are relevant to understand and contextualise these results. And (ii) the method, format and factors considered in the ethnographic characterization of the *agdal* of Tisskji (Table 22) allow for the characterization of other *agdals* and agro-silvo-pastoral ICCAs¹⁰⁴.

ETHNOGRAPHIC CHARACTERIZATION OF THE AGDAL OF TISSKJI

Factors	Description
Area	<i>Agdal</i> area: 293 Ha Macro-area of study around the <i>agdal</i> directly linked to it (rural commune/municipality of Imouzzer). Area: 18,600 Ha. This means that the <i>agdal</i> is 1.58 % of the total territory of the Rural Commune of Imouzzer.
Different Ethnic or Social groups using the <i>agdal</i>	Amazigh (98% approx.) Arab (2% approx.)
Number of families using the <i>agdal</i>	Approximate number of tree owners using the <i>agdal</i> : 50 families Approximate number of total family members dependent on the <i>agdal</i> : 300 people
Number of pastoralists using the <i>agdal</i>	At present, 15 in the villages surrounding Tisskji. None in Tisskji. No transhumant herders either.
Permanence	<i>Agdal</i> is a seasonal access regulation system linked mainly to the Argan tree flowering period. But the area managed as a Common is permanent, even though the property of the forest and land is state-owned. Tisskji <i>agdal</i> is closed to pastoralism and people during the blooming season from end May to end August of each year. Dates may slightly vary due to the flowering of argan but are maintained throughout the years.

¹⁰⁴ Project MAVAs M6 Overarching Initiative: "Communal Governance Systems, community engagement and public participation" (2017-2022).

Community Rights over Resources ¹⁰⁵	<input checked="" type="checkbox"/> Rights to only certain resources <input checked="" type="checkbox"/> Right to commercial use of the resources
Major threats to the <i>agdal</i>	1 - De-legitimisation of customary rights 2 - Loss of knowledge/cultural change 3 - Over-harvesting 4 - Inappropriate forms of recognition by governmental agencies or conservation organisation 5 - National policies
Infrastructures (linked to the <i>agdal</i>)	In the area of the tribe Tankirt there are two refuges with sheepfold, locally called Azibs (see Photo 1, Fig. 86) and one trough-watering hole (close to the souk for shepherds and animals of Tankirt, in the Aziar region). None of them within the Tisskji <i>agdal</i> though.
Forms of grazing	Extensive
Flocks	150 livestock heads of sheep and goats among all the villages surrounding Tisskji, with an average flock's size of 10 livestock heads.
<i>Agdal</i> agropastoral history	Unknown. Pastoralism in Tisskji disappeared 1,5-2 generations ago. Most of the people interviewed have just vague memories. Nevertheless, linked to the <i>agdal</i> system, Amazigh traditions and local history, everyone talks about three main periods: before, during and after French colonisation (French protectorate: 1912-1956). See Fig. 58 for further detail. Regarding agro-pastoral festivities , people in Tisskji highlight two of them as still alive: Amargh (<i>agdal</i> opening) and Maârouf (end of argan harvesting). Both are collective meals, almost self-organised, "by the tree". Families, on the last day of the harvest, take more food or a slightly more special meal and agree to share it together (instead of each family separately, which is what happens the rest of the days during harvest). They usually end up singing, but it is rather improvised. Amargh and Maârouf are similar. The difference is that at the end of the harvest, more people get together, which means a more festive atmosphere.
<i>De facto</i>/direct users of the <i>agdal</i>	50 families have rights and harvest the argan nuts each year. And 15 pastoralists from neighbouring douars (none from Tisskji) graze inside the <i>agdal</i> at present, although all pastoralists of the Tankirt tribe have grazing rights.
Local/external users of the <i>agdal</i>	Shepherds or pastoralists from the whole tribe of Tankirt have access rights to the <i>agdal</i> (See Fig. 49), although in most occasions they do not use them. There are no more than 150 animals in all the region visiting occasionally the Tisskji <i>agdal</i> , an average of 10 heads per family among the 15 owner families above mentioned (coming from the closest douars to Tisskji). However, argan trees' use rights are assigned to specific families; so, for example, only the 50 rights-holders' families from Tisskji have access to their <i>agdal</i> .
Traditional Institution of governance (tribal)	Jmaâ of Tisskji manages the <i>agdal</i> of Tisskji. Jmaâ of Tankirt manages the territory of the whole tribe, including around 50 douars (2 wise men/douar) The Jmaâ foundational date is unknown. Everyone says, "since ancient times" or "since always". It is well-known that the Jmaâ has been the institution of governance for local people since immemorial times.
Present Institution of governance	ADL Imal (Local Development Association), since Moroccan "Law of Associations" of 2002 ¹⁰⁶

¹⁰⁵ This information may help distinguish between owners and other stakeholders and clarify the level and extent of control.

¹⁰⁶ Law n°75-00, of 23 July 2002, regulating the right of association. Recently, as part of the promotion of what is known as "civil society" in rural areas, many Jmaâs have formed legal associations (ADLs) to carry out collective actions (village electrification, drinking water supply, etc.) that require access and legal justification of public funding or donations.

Members participating in the <i>agdal</i>-ICCA governance institution	<p>The Jmaâ in Tisskji consists of 35 active members approx. In addition, there is a hybrid recent structure comprising members from the ancient Jmaâ, the local ADL (association), other family heads of the village and some local authorities' representatives.</p> <p>Furthermore, it exists in the whole region of Tankirt the tribal Jmaâ. It meets in the two annual Moussem, and it is represented by two members of each douar. Its role today is political and religious at tribal level (rather than the governance of the ICCA).</p>	
Functions of the governance institution	Long-term natural resources management and conflict resolution mainly.	
Place of meetings	In the mosque, either during the weekly "Friday prayer" at the douar level or during the two annual <i>Moussem</i> at the tribe-region level.	
Register of minutes	No registering of minutes but in case of conflict (in recent times) they keep a written record of the agreements reached, signed by all parties and the mediator(s) and conserve them in the archives of the mosque.	
<i>Agdal</i> statutes and rules	<i>Agdal</i> closing and opening	<p><i>Agdal</i> closes to animals and people around end May – 1st June and opens around end August.</p> <p>It depends on the flowering of the argan tree each year. The flowering period may vary according to the climate conditions and/or the conservation state of the forest ecosystem. Locals report that after long drought periods, argan trees may not flower, and so they may decide to not practise the <i>agdal</i> that season.</p> <p><i>Agdal</i> in the argan forest depends strictly on the flowering of the tree. The argan shares this year's fruit with the flower that will give the fruit the following year (see Photo 2, Fig. 86). <i>Agdal</i> is practised protecting the following year's harvest, both from the animals that climb up the tree to eat and damage the flower and from people who do not respect the traditional practice of harvesting the argan fruits from the ground once they have matured and fallen.</p> <p>In Tisskji the main threat nowadays is people who "beat" the argan tree as if it was an olive tree.</p>
	Access outside dates	Non-compliance with the date of opening implies, to begin with, an oral warning and a symbolic fine. But if breaching of the rule persists, the community can impose higher fines agreed on a case-by-case basis, generally after a process of negotiation with the person involved. In addition to fines, there may be different types of social isolation or rejection.
	Entrance and exit rules compliance	In Tisskji there is almost strict compliance with the rules. In case of conflict (rare), they are usually solved at a community level. Conflicts are due to right access to a certain tree or between tree users and neighbouring herders.
	How does the distribution of use-rights take place	<p>In Tisskji most people do not know or do not remember how the distribution of grazing places takes place, as it is not a pastoral <i>agdal</i> and there are no herders in the douar.</p> <p>But argan fruit harvesting areas belonging to each douar and family are well known, reclaimed and respected. There are even some argan trees on the limit between the area of two families within the <i>agdal</i> that belong to both families, so the argan production is equally divided.</p>

	Requirements	To have historical inherited rights over the argan trees ("belonging" to your family, tribal lineage, patrilineal)
	Sanctions	The traditional conflict resolution process avoids the point where sanctions (often economic) are needed. In case they do, it is the Jmaâ, the traditional customary institution, applying them at a community level. Non-compliance with the date of opening implies, to begin with, an oral warning and a symbolic fine of 20-100MAD ¹⁰⁷ . In case that the Jmaâ warnings and mediations do not work, and the conflict becomes serious, the community addresses the issue to the Caïd ¹⁰⁸ . After the Caïd, it is the National/Regional Justice Administration who intervenes at the end if it is necessary (usually the Administrative Court in Agadir).
Leasing land	<p>As the forest property is on the Forestry Administration, this does not apply in this case.</p> <p>Nevertheless, harvesting rights of families no longer living in the douar or village can be "leased" somehow, so the absent rights-holders pay (with fruits or money) to the ones who harvest "their trees".</p> <p>The duration of agreements is variable; one year or one harvest season could be considered the standard.</p> <p>Agreements are established at any time.</p> <p>Periods in which the leasing use-rights is paid. When it is someone else harvesting the argan nuts instead of the rights-holder. The payment is done either "in kind" right after the harvest or with money right after the sold of the argan nuts.</p> <p>The cost is unknown and variable, depending on each agreement and the market price of the argan nut that year. It is also not a common practice in Tiskki <i>agdal</i>, so people do not have the experience themselves.</p>	
Communal investments	To pay the guardian of the <i>agdal</i> , paths maintenance, etc. It is the Jmaâ who decides, collects the money (usually in the mosque) and pays.	
Possible external funding	No external funding (subsidies, funds or others)	
Production statistics	<p>Regarding argan production, there are no registered data, nor a local track record. In addition, production variability each season is high and multifactorial (e.g. it may vary according to the climate conditions, the rain and/or the conservation state of the forest ecosystem).</p> <p>No data regarding animals sold per year. However, animals tend to be sold either in drought periods or when the family needs extra money.</p>	
Argan processing and commercialisation management	Argan processing and management in Tiskki is organised, depending on the families, either at the household level or at the cooperative level. There are three women-led argan oil cooperatives in Tiskki. Commercialisation of the Tourtatine Cooperative, the biggest and oldest is through the Union of Women's Cooperatives for the Production and Marketing of Argan Oil and Agricultural Products Tissaliwine, in Agadir (i.e. UCFA Tissaliwine). The other two ones commercialise through trade fairs and direct trade points.	

¹⁰⁷ 20-100MAD (Moroccan Dirham) is equivalent to 1.85- 9.25 € approx.

¹⁰⁸ *Caïd*: In Morocco nowadays, a Caïd is a Muslim civil servant with the functions of judge, administrator and chief of police at the Caïdat (district) level. In general, Caïd is the Arabic term for a kind of judge or governor in some Muslim countries. The word caïd means leader, guide or warlord.

Adaptation strategies	<p>The current adaptation strategy regarding livestock tends to be selling the animals. In the recent past (two-three generations time), the strategy in the region in general and in Tisskji in particular, has been to shift from animals and pastoralism to the argan oil sector and the agriculture (olive trees mainly). That is because of the higher profit margins in the argan and olive sectors and the high schooling rate (it used to be the children taking care of animals, and now they are at school).</p> <p>The general adaptation strategy, however, is to diversify the intra-community and intra-family sources of income, so they can face uncertainty related to climate, argan production, tourism or honey incomes, etc.</p>
Involved actors	<p>Public actors: Interior, Agriculture and Justice Ministries mainly; and their regional and local bodies.</p> <p>Private actors: Community members (mainly those with rights over the resources), including women-led argan oil cooperatives.</p> <p>Associations: Development, Agriculture and Irrigation water associations.</p>
Is there government support or laws to assist management?	<p>There is no government support strictly to assist <i>agdal</i> governance or management.</p> <p>But there exists the legal recognition of certain traditional local rights over the resources of the argan forest:</p> <ul style="list-style-type: none"> - <u>General Regulation of 17th October 1917</u>: concerning the “Protection of Forests and their Exploitation” considering the socio-economic context of Moroccan forest regions (still insufficient for the arganeraie). All forests are declared state-owned. - <u>Viziriel decree of 15th January 1921</u> the way in which the right to grazing and the access to the rangeland is exercised in state-owned forests in general. - <u>Dahir 4th March 1925</u>: First legislation regulating the conservation and exploitation of the arganeraie. It specified the right of use of the resident population (followed by a series of dahirs and/or ministerial decrees over the years 1938, 1951, 1954, 1976 and 1983). <p>See Fig. 13 for further details on the legal texts concerning the argan forest at a national level.</p>

Table 22: Main features describing the *agdal* of Tisskji in the Ida Outanane region (Tribe Tankirt), SW High Atlas mountains.



Figure 86: Photo 1. Azib in the territory of the Tankirt tribe in use at present (Romera, 2018). Photo 2. Overlapping of the fruit and flowering of the argan tree (Romera, 2019).

2.3.2. TISSKJI SINGULAR LOCAL GOVERNANCE MODEL AND ETHNOGRAPHICAL REMARKS

Additionally, to the former institutional analysis of the main local actors in Tisskji, which is worth describing here is their particular formula of community governance, quite singular and non-existent in the nearby douars.

Despite being the Local Development Association (ADL Imal), the current institution governing the *agdal* (since the Moroccan “Law of Associations of 2002¹⁰⁹) and acting as a local leader actor; the collective decision-making at a community-level goes beyond that in Tisskji. Since a few years ago (2016) a group of 20-24 head-family members (all of them men) meet once a month to discuss relevant issues for the community at any level (i.e. from agriculture or irrigation infrastructures to education, social or mosque-related issues).

This **informal assembly** is a hybrid structure among the ancient Jmaâ, the local ADL, other family heads of the village and some local authorities’ representatives (e.g. the Mokadem). There are various interesting singularities within this group:

- They have no formal statutes, but they register through written minutes all the agreements, and they discuss based on a pre-agreed agenda.
- They are open to external members of the douar to participate in their discussions (which is absolutely innovative and unusual outside Tisskji). This is coherent with their definition of Community.
- Among the issues discussed is frequent to face problems or activities which need funding to be solved or which have an economic cost. They might be issues under the responsibility of the local administration, the Caïdat or the like but considered urgent by the community, so they decide to be proactive and search for solutions and/or funding themselves. On these occasions, they elaborate a list of priorities, they discuss the feasibility of each item on the list and then agree on the priorities.
- They have agreed on two different cash accounts, one in which everyone contributes his best depending on their personal/family financial situation/position (higher amounts of money and not all the members have to contribute to every month); This money goes to pay for the issues or actions prioritised. And a second account where all members contribute with a small sum every month (except for the host who has already paid for the collective meal).
- In relation to this second account and besides the monthly collective meal, they also have a particular way to motivate themselves for their time and efforts invested (the participation is voluntary) so it is worth for them all in the long term. Each month they meet in one different member’s house. The host is responsible for organising a nice dinner for all. Once they have met in all the members’ houses (they were at the time of the research 15-17 people, so each 15-17 months), they organise a (touristic) trip of several days to any destination in Morocco they all agree; which is paid with the savings from the second account. This is a good incentive for them to contribute to the community through their efforts, time and money.

ETHNOGRAPHICAL REMARKS FROM TISSKJI:

As a **first ethnographic note** that can contribute to a better understanding of the analyses linked to the different worldviews and strategies between men and women, particularly in rural areas of the Arganeraie.

Women are able and willing to work very hard for a long time. But they do not forget (they even claim) to enjoy life at the same time, to have fun, to celebrate and to establish strong social relationships with the rest of the women in their community; which I consider a wise way to build resilience in their sphere of influence and action. A clear example of this is the Maârrouf that is celebrated every year at the end of the argan harvest (detailed in Table 22, “*agdal* agropastoral history”).

¹⁰⁹ Law n°75-00, of 23 July 2002, regulating the right of association.

Example. A remarkable lesson I learned from the women of Tisskji in relation to the resilience index collective workshop. This activity was planned towards the end of my fieldwork period living in the community, as it required a high level of trust in me (as a person and researcher), in the method itself and a high level of complicity and concentration within each group (men or women).

By that time, almost the whole community knew me very well, and they also knew that it was a long and tiring activity. A few days before setting the final date for the workshop with the women, they gave me a non-negotiable condition. That was, they would answer all my questions for as long as it took (which was incredibly complicated for them as they had to organise for someone else to look after the children during that time and the rest of their domestic duties), on condition that we would first organise a Maârouf (a feast or celebration) among all of them. I will not go into much more detail here about what became the Maârouf "Lala Carmen", the fact is that I accepted, and the resilience index workshop ended up being a success in many ways, among others the high level of collective reflection, wisdom and focus shown by the participants (more than 30 women from three different generations) on topics that are usually reserved for more masculine environments, such as the mosque, souks (i.e. markets) or cafés.

A **second ethnographic note** illustrating the heightened sense of the collective and the group or community in Tisskji.

A clear element and indicator of a sense of collectivity and community identity in a broad sense, are the innate and frequent displays of empathy, help and support within the community; directed and received in a multi-directional manner, even to external members (such as researchers).

Example. During the resilience workshop with women, at one point the translator had difficulty to accurately transcribe one of the questions into *Tashelhit* and several of the women immediately and naturally helped him to express the message. Shortly afterwards, at a moment when the group begins to be tired, it is the host (present as observer and logistical support) who spontaneously intervened to encourage the group by insisting on the idea (already put forward by myself and the translator) that this methodology was complex for everyone, including the experts.

2.3.3. ICCA-COMMUNITY RESILIENCE INDEX

The main aim of conducting the resilience index collective workshops was to invite local participants to reflect collectively in depth about their community and *agdal*, and to better understand the main defining characteristics of both, not spotted during the individual interviews and previous activities. As explained in the methods section, the resilience index collective workshops adopt a standardised method called "ICCA Resilience and Security Tool" (Borrini-Feyerabend et al., 2012) for the self-assessment of ICCAs worldwide. The method consists of a semi-structured collective discussion organized around seven main axes (see Annex IV) that aim to guide the collective reflection of internal and external factors related to the community resilience, security and governance. I found the "ICCA Resilience and Security Tool" an adequate self-assessment method to conduct such a collective debate in a feasible and participatory manner (given the diverse research constraints, mainly the need for a French-Tashelhit translator and facilitator).

This method may be used as part of a series of grassroots discussions, it allows to assess the ICCA and community resilience and security and also to analyse key strengths, weaknesses, threats and opportunities in the community (i.e. locally adapted SWOT analysis). However, the authors warn that "the key consideration is that the assessment and analysis need to make sense for the custodian community" (Borrini-Feyerabend and Campese, 2017). In this sense, ADL members had acknowledged in the initial meetings that the combination of research methods agreed with them in advance (i.e. the PGIS workshops, the ethnographic characterization of the *agdal* and Community and the resilience index workshops), offered useful information to the community leaders in charge of the local governance (besides the research project itself).

Annex IV shows in detail the comparative scores for women and men regarding the main internal and external factors related to the local community and *agdal* governance and resilience. As noted in the

methods section, the **internal factors** are referred first to the integrity and strength of the community and the connection between the community and its territory (i.e. Link LC-*agdal* in Fig. 88); second, to the functioning of the governance system (i.e. Governance); third, the territory's conservation status and the livelihoods and well-being of the community (i.e. Bd Conserv.); and fourth, to internal threats to cohesion, and internal socio-political and cultural change (i.e. Int. Threats). The **external factors** include first issues of tenure rights and recognition (i.e. Tenure); second, level of support from third parties (i.e. Ext. Support); and third, external threats and disruptive forces likely to affect the sustainability of the ICCA (i.e. Ext. Threats).

Beyond the numerical score or index, the utility of this tool is to invite community members to think about phenomena that may affect the community or ICCA and identify the key issues at stake.



Figure 87: Resilience Index Workshops in Tisskji. (A) Women's discussion and consensus process. (C) Men's reflection and discussion during the workshop (Romera, 2018).

The ICCA Resilience workshop with women was held the 21 October 2018 with the participation of 31 people (6 young¹¹⁰, 22 adults, 3 elders) and a duration of 2.5 hours. The men's workshop was held the 26 October 2018 with the participation of 15 people¹¹¹ (12 adults, 2 elders) and a duration of 2.5 hours.

It is worth noting that the index does not aim to be precise or comparable outside the local context. That said, broadly speaking, it could be said that the closer the Index is to 100%, the more resilient and secure one can expect the ICCA to be. In addition, identifying which Index components or factors scored very low may suggest areas where action can be taken to protect and strengthen an ICCA (both the community and their *agdal*). Figure 88 shows the comparative scores of women and men in Tisskji in a visually summarised form. In all, the resilience index in Tisskji was scored 68% by women and 63% by men.

¹¹⁰ Young people (15-20 years old); Adults (20-55); Elders, considered as wise people (+55)

¹¹¹ It should be noted that the day of the workshop (previously agreed and scheduled) coincided with a heavy storm in the area that prevented several of the expected participants from travelling to attend the workshop.

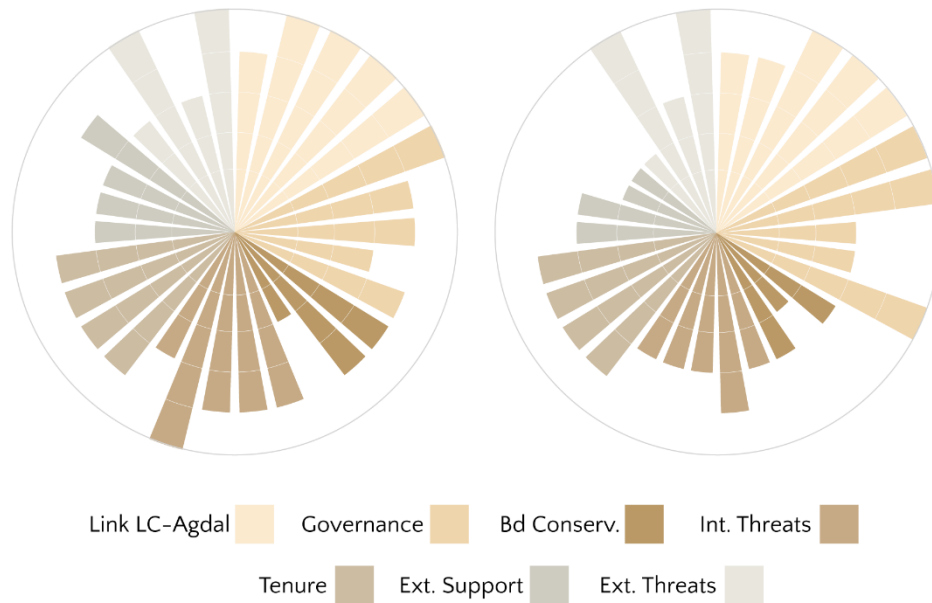


Figure 88: Resilience Index Diagram in Tisskji. Women's and men's self-assessment regarding the main internal and external factors related to the local community (LC), agdal, governance, governance and resilience.

GENERAL COMMENTS

During the women's workshop, apart from the first "warm-up" question, in general the activity ran very smoothly and with a high level of consensus; not much discussion/debate was necessary despite the large group (i.e. 31 participants). However, a couple of issues were hard to translate properly into Tashelhit (e.g. issues 1.1, ICCA's cultural, spiritual and other non-material values; and 7.1, economic forces coveting the ICCA) and hard for the group to grasp from the beginning. The president of the ADL was of great help in both cases, giving clear examples of what I meant. It happened the same in the men's workshop with point 5.2 regarding "collective territorial, land, water and natural resource rights (ownership and/or use) recognised by civil society in general and national/international NGOs".

In the men's group there were 3-4 people who tended to lead, but the rest were attentive and seemed to feel free to express their opinion, they agreed in a non-verbal manner.

INTERNAL FACTORS

- 1) *The integrity and strength of the community and the connection between the community and its territory*¹¹²

ICCA's cultural, spiritual and other non-material values are held and appreciated by most people in the community. Regarding biodiversity conservation, most people in the community declare themselves knowledgeable and active in conservation, in the men's view; while women believe that it is nearly everyone, and claim "of course almost everyone is informed and active in conserving the conservation values of APAC."

Regarding the other aspects of the community connection with their ICCA or *agdal*, all of them are qualified as maximum by everyone, men and women. This means that (i) basically, everyone knows

¹¹² Community: *kabila* (in Arabic), *takbilt* (in Tashelhit). *Tankirt* tribe for people in Tisskji.

about essential services (*agdal's* subsistence and economic values) and is taking the right steps to safeguard them (women point out that these services even encourage local emigrant population to come back); (ii) everyone (elders, youth; men and women) are engaged in caring for the ICCA; and (iii) the relationship between the ICCA or *agdal* and the community is over 100 years old. Women claim, “*population has been there for generations!*”.

2) *The functioning of the governance system*¹¹³

ICCA decision-making is valued and respected by the community, as evidenced by strong ICCA-related institutions. Both men and women agree on the fact that ICCA(*agdal*)-related institutions (i.e. the *Jmaâ*) are in place and respected by virtually everyone.

Community engagement in decision-making is high in Tiskji. However, slight differences persist in the women's and men's perceptions. Men state that major issues are only decided by consensus by a general assembly or equivalent body and that they always participate during the general assemblies. In contrast, women agree that major issues are only decided by consensus, but not necessarily through a general assembly.

Community cohesion and solidarity is evidenced by a sense of common identity, mutual help and respect. Men agree on the sporadic existence of community cohesion and solidarity (e.g. the majority of people have a discussion to agree on a certain decision; the goodwill of the community, as for the example of the *Maidah* Table¹¹⁴) and state that initiatives (like common festivities, etc.) need to be safeguarded/improved (3). Women, in turn, after some discussion, agree that the majority of the local community is proud of its identity and demonstrates in practice mutual help and respect (4). They note as examples cases of solidarity for the olive and argan tree harvest in the form of *Tiwizi* (solidarity) and they argue “*girls present with us learn from the solidarity of their community*”.

Local rules (concerning a variety of aspects of community life, not only the ICCA) are well-known and respected by the majority of people and infractions committed by community members are rare (4) in men's opinion and some women too. However, for women, they decide after voting, that norms are generally known (by about half the people) and the infractions infrequent (3).

Regarding transparency and accountability, men agree on the existence of an excellent respect of agreed procedures and satisfaction of criteria such as information on local decision-making readily and widely available, sound technical and financial management, etc. (5). Women instead, think that there are proper procedures in place, and information on local decision-making is easily accessible and shared (4).

3) *The territory's conservation status and the livelihoods and well-being of the community*

The ecological balance of ecosystems¹¹⁵ inside the *agdal* is uncertain (3). And the ecosystems surrounding the *agdal* are affected by different pressures (2) in men's opinion. Although 2-3 people talk about ecosystem balance also outside the *agdal*. For women, ecosystems in and surrounding the *agdal* are in good condition and stable (4).

Regarding the quality of livelihoods for the community governing the *agdal*, men recognise some uncertainties and limited access to health and education facilities (3). While all women agree that “*the*

¹¹³ Governance: *Alhakama* or *Hakama* (in Arabic)

¹¹⁴ Sura *Al-Ma'ida* or *Al Maidah* ('The table' or 'The table served') is the fifth sura in the Koran evoking the story of the table with food granted by Allah. The Koran, the sacred book of Islam.

¹¹⁵ As evidenced by indicators such as integrity of forest areas; status of soil; quality and quantity of freshwater in and from the ICCA(*agdal*); abundance and vigour of endemic biodiversity.

population does not have the same level of education, health, income, ... and that there is too much poverty among some families". That is, a significant part of the population has a low standard of living with limited access to health and education facilities (2).

4) *Internal threats to cohesion, and internal socio-political and cultural change*¹¹⁶

There is no agreement among men about migration negatively affecting the ICCA (i.e. extent of community members migrating outside the areas negatively affecting the ICCA). They are divided between (3) "Many leave, and some do come back.; young people generally leave to study and return" and (4) "Only a few migrate for temporary jobs and return". Women agree and note that only a few migrate for temporary jobs and return.

With regard to evidence of cultural change, most (women and men) agree that there is no significant influence on important traditional values, customs and traditions, traditional knowledge, festivals and local language (4). However, there are those (women and men) who remark that changes occur but are easily incorporated into the local cultural framework (3). There were a few women that believed that important local values are fundamentally unchanged and able to incorporate novelties and change (5).

No significant changes in local lifestyles and aspirations were reported by women (4). However, they noted that "*it is hoped that lifestyles will increasingly improve*". In men's view, new aspirations and lifestyles appear to blend with customary ones (3).

Regarding political/social fragmentation, women and a few men argue that the community is very united behind some common social and political objectives (5). On the other hand, most men point out sharp socio-political differences, which are, in general, respectfully dealt with (3).

EXTERNAL FACTORS

5) *Issues of tenure rights and recognition*

The ICCA (*agdal*) is recognised and respected by most (not all) neighbouring communities (the president of the ADL pointed out that "*there are "Injâafen" committees that attack the APAC*") in the opinion of most men and women (4). However, there were some men and an elder woman that said that the *agdal* is recognised and respected by all neighbouring communities (5).

Everyone agrees that most NGOs and civil society recognise and support collective rights (e.g. through provision of support and public acknowledgement and respect). In this sense, women noted that there is not only the State, but also civil society and the international NGO (UNDP).

Men and women also agree that State agencies informally/de facto recognise their collective rights (e.g. through coordination of management activities, public acknowledgement and respect by government officials, etc.). They point out that collaboration with State agencies is positive, very respectful, and has been going on for a long time (4). Women mentioned that they "*already had some experiences, for example, the creation of the cooperative (women-led argan oil cooperative) and the water irrigation system*".

Regarding the formal recognition of the ICCA (*agdal*) status in the State law and policy, everybody (men and women) agrees that official support and recognition by the government is not explicitly

¹¹⁶ Migrants: *Imoudan* (in Tashelhit), literally "those who leave". Verb *aritmoudou*, "who travel".

reflected in law and policy (4). However, men pointed out that, “*contrary to tradition, they have the support of the government*”.

6) *Level of support from third parties*

Everyone, men and women, agree that only part of the political and economic support (from outsiders) desired/needed is received. Women said, “*we wish to*”. Whereas technical support (from outsiders regarding biodiversity inventories, legal advice, etc.) is average as desired in women’s opinion (3) and weak or relatively weak for men (2).

The issue of cultural recognition (e.g., understanding and respect of the cultural and identity values motivating the community) arose some discussion in the men’s group, and they finally agreed that cultural expressions and identity have no government support but also no objection to their use on official and public occasions (2). Women, however, think that culture and identity are valued and people are proud to use and promote them (4).

7) *External threats and disruptive forces likely to affect the sustainability of the ICCA*

After a short discussion, men acknowledge the existence of a few major economic forces coveting the ICCA, but no support or alliance with the national government (2). Women, in turn, agreed that such forces are there, but the government does not support them(3).

Settlers, migrants or refugees with a negative impact on the ICCA (*agdāl*) are totally absent. Besides, everyone agrees that there are no threats to the *agdāl* related to either war, violent conflicts and crime, nor they are expected to take place, “*Except for misery!*” men state.

Regarding major environmental threats to the ICCA, both men (after a short discussion) and women agree that such threats emerge (3) and women explicitly acknowledge threats like Climate Change and pollution (rubbish).

2.3.4. SWOT ANALYSIS OF THE COMMUNITY AND AGDAL

What makes the Tiskji *agdāl* and community a relevant case study, unique in their context, is the strong sense of community and collectivity, together with high individual and collective proactivity and strong identity to their territory (not necessarily so sharp in nearby communities). Absence of conflict in the *agdāl* and the neighbouring *agdāls* is an additional singularity, perceived by community members because of the former “strong sense of community” and the respect for the customary norms and institutions. See Table 23 for further detail in the form of a SWOT matrix.

Additionally, women have a voice and an active role in the community regarding, among other, the financial stability of households through the argan-related activity. Some of them are also members of the local association (ADL IMAL).

STRENGTHS	<ul style="list-style-type: none"> - Strong identity of local population. - Solidarity (women). - Customary management and local governance model. - Local traditional and ecological knowledge and resilience. - Argan forest (as a source of income). - Willingness, commitment to and experience in building partnerships with regional administrations, public agencies and other organisations and NGOs.
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WEAKNESSES	<ul style="list-style-type: none"> - Lack of employment and other economic activities (for young people). - Migration negatively affecting the ICCA (not perceived as a big issue). - Lack of capacity building opportunities and other education issues. - Changes in economic lifestyles and aspirations (not perceived as an issue).
OPPORTUNITIES	<ul style="list-style-type: none"> - Development projects and investments in cooperation with regional and national institutions. - Valorisation of local products (e.g. honey, crafts, ...) and “self-promoted” rural tourism, among others. “Mainly women-related (cooperatives, wool-fabrics, museums...)”. - “Valorisation of heritage and ancient objects, traditions and customs”. - “Valorisation of the livestock sector (e.g. through training and encouragement)”.
THREATS	<ul style="list-style-type: none"> - Wild boars (damage/destruction of plants and crops). Exponential increase in populations coupled with a national legal ban to kill them. - Major economic forces coveting the ICCA, like mass tourism (not perceived as an issue). - Drought and lack of water (“there are sources that are no longer available”); not perceived as a big issue by most interviewees.

Table 23: Brief description of the main characteristics for each factor in Tiskji in terms of a SWOT analysis.

2.3.5. MAIN LOCAL CONCERNS

In line with the previous section, the two main concerns of local community in Tiskji regarding not only environmental governance, but also the present and future of the livelihoods in the area, are first, the problem with wild boars in the region, and second, the lack of job opportunities for young people (mainly young men) impacting the douar negatively. In addition, current and future developments on the argan sector influencing their territory, emigration and livelihoods in the near future are also acknowledged by the local community but not perceived as serious issues compromising their future in the douar. My own perception as a researcher in Tiskji is that the community has experienced in the (recent) past worse scenarios of emigration, drought and tourism decline than at present, so they feel resilient enough to overcome future challenges. In addition, their proactive character lead them to minimise the challenges and potential conflicting situations, so they acknowledge some needs and hopes for the community, but in a “non-complaint” mood. In short, they tend to express more proposals than concerns, which is something quite singular and remarkable in a broader cultural and sociological context.

The interviewees agree that there are hardly any conflicts at present. If anything, there are minor disagreements about the dates of the *agdal* or the quantity of the harvest (“no more than one a year and always fixed at the community level”). “There are no major conflicts here and now”. “Drought is not a problem either”. However, “the wild boar is a big problem”. Women agree that there are no conflicts thanks to the *agdal* but that “far away the nomadic camels are a big conflict with violence”¹¹⁷ (they have seen it in the press and on TV).

¹¹⁷ They are referring here to the active conflict between local rights-holders and “new transhumant herders” in the Chtouka-Ait Baha region (where the second local community case study is located).

WILD BOARS

Wild boar has been a problem for about 6 years (i.e. since 2012-2013), which has been accentuated during the last two years (“*since about 2 years the problem is worse*”). Wild boar populations are increasing exponentially, and it is legally forbidden to chase or kill them. Farmers, some elderly people and the guardian of the *agdal* insist on the problem of the wild boar, because it destroys plants and wheat fields or other crops:

“*We don't have the right to kill them. And they eat between ½ and ¼ of the harvest*”... “*We put iron fences around our fields, we have no other solution because if we don't do it, the wild boars destroy everything, and we have nothing left to eat*” (ancient shepherd and Jmaâ member, October 07, 2018).

“*The solution is through the “Eaux et Forêts” (i.e. the forest administration), the State is not interested in the solution*”. “*The community has tried and there is no solution*” (ancient shepherd and Jmaâ member, October 07, 2018).

LACK OF JOB OPPORTUNITIES AND LIVELIHOODS

The practice of the *agdal* in the whole Tankirt region is in decline but still active and respected. In Tisskji, people state that “*the role of the agdal on the local economy is important, they are assured of selling the harvest. Life depends on the agdal*”. However, some people fear it will disappear in the next generations, due to the non-return of young people from the city after completing their studies.

Young people and their parents have lost the hope to find a good job in the village; so, they are no longer interested in staying there in most cases. Young men mainly are looking for work in cities to improve their living conditions.

“*Lack of job opportunities is causing emigration. This is a problem that was worse in the past, nowadays it is decreasing. The agdal is regaining importance and interest as well*” (collective interview, October 29, 2018).

Lack of income and educational issues are two relevant concerns in the community and two drivers impacting current and future socio-economic dynamics. On the one hand young women in general quit the education system after secondary school and tend to remain in the region (primary school is located in the douar, secondary school is in Imouzzer, for higher educational levels, students need to move to Agadir city) while young men tend to continue their studies in Agadir city and most of them do not come back to live in the region. On the other hand, the argan sector is one of the most relevant sources of local income, mainly through local women-led cooperatives of argan oil. Tourism is also a potential source of local income not yet properly structured to retain benefits locally.

Among the main hopes and demands of the community members and interviewees are receiving capacity building, technical and financial support to create local employment and future lives for the young people, so they can/want to come back to the douar after they finish their studies at college and/or university. Local associations are already working in this line, but they demand external grants and further capacity building (argan sector and PAM¹¹⁸ mainly) to succeed and revert the dynamic. Community leaders have a clear message: the support of national, regional and local authorities, together with national and international institutions and NGOs is relevant to the community “*if it's well-adapted to their real needs*”.

BASIC INFRASTRUCTURES

Other issues that would help in the local development and where local associations are already active, are those regarding the improvement of public infrastructures at the village/community level (school, irrigation, ancient buildings and streets, etc.)

¹¹⁸ Medicinal and Aromatic Plants.

ARGAN AND TOURISM SECTORS vs INTERMEDIARIES¹¹⁹

Participant observation (in Tiskji and in the whole Ida Outanane region) proves low profit margins when selling through tourist circuits. In these cases the guide keeps 50% of the sales and the other 50% must cover the cost of production and the remainder is the profit of the local trade. Yet, in no interview respondents have highlighted this issue directly as a concern. Women talk about the different profit margins they receive, compared to other regions, but they express it as a "fact of life".

Finally, local leaders propose as solutions for some *agdal*-related concerns: (1) a legal system for conflicts (that is a legal basis for customary law); (2) state intervention for the wild boar "as the local authority itself can do nothing"; and (3) "awareness of the benefits of the *agdal* is necessary" (ADL Imal, September 30, 2018). They argue that it is necessary to protect their cultural and natural heritage, the *agdal* and the development of the region: "Cultural and natural heritage is important for future generations". "*Agdal* is a pure traditional and customary protection, the RBA or other forms of protection (are also important)" (ADL Imal, September 30, 2018).

Genuine interest in education access, quality and relevance, not only for their children as individuals but for the community as a whole, is an additional element which characterises Tiskji. They are highly concerned about the key role of capacity building to foster the sustainable development of their community. In line with this, they consider scientific research important as a means of information exchange, and they think it helps to protect the territory: "the region benefits (of research) because they do not forget".

2.4. PERCEPTIONS OF FEASIBLE FUTURES

When questioned about the *agdal* in Tiskji, the general response is that the *agdal* is sacred to them:

"The very word '*agdal*' is important. It is not only the seasonal protection of the trees and the fruit, the *agdal* is also the management of the forest all year round" (community leader, September 30, 2018).

"Most conflicts occur where there is no *agdal*" (ADL member, September 30, 2018).

When questioned about the future, local leaders and community members interviewed agree that it will remain important or increase in relevance due to the recent developments regarding the argan sector:

"In the future the *agdal* will continue to be important, but it needs to be adapted (on a legal level). The customary law by which we manage the forest is very important for everybody, and it will be even more important in the future. People need to pay attention. Awareness needs to be raised." (community leader, September 30, 2018).

"In the future nobody knows but *agdal* has a great importance on the local economy from Sidi Ifni to Essaouira (all the RBA)" (community member, October 17, 2018).

When questioned about the future of Tiskji as a community, the discourse is different and locals demand a "future for their youth", highlighting the lack of job opportunities for young people. They mention their need for external (technical and financial) support well-adapted to local needs to create local employment for the young people, so they can/want to come back after they finish their studies

at college and/or university. In turn, some local authorities' representatives perceive the future of the community linked to young women mainly (due to the argan sector developments and the potential for valorisation of local products, crafts and customs).

In general, Tiskji future scenarios in mind for their community leaders involve first, recognising the *agdal* by law, so that the community, local and regional authorities can react effectively to potential external threats. Second, providing the douar with the necessary capacity building mechanisms and the technical and financial support for the projects that the community agree to achieve (as previously mentioned in the concerns section).

Community members are adopting different individual and collective adaptation strategies to face the future and overcome current challenges. Frequent individual strategies are: (1) migration of young people to Agadir city mainly (migration materialised through higher education studies and searching for job) or through marriage; (2) multiple sources of income (informal commerce, tourism, argan and olive oils, carob, traditional agriculture, honey, other services, working as labourers in the sector of construction or in Agadir city, among others). Collective actions include an active participation of some community members in every single field, activity or project that they consider may be beneficial to their douar. This means, from the active participation in local and regional politics, to the creation of several local associations, the collaboration with various regional and national entities in order to bring different development projects to the village, presence in regional and national forums, etc.

Current relevant examples of this collective strategy to foster local sustainable development, local governance and livelihoods improvement are: (1) the various collaborative alliances established by the community with public institutions (e.g. PEC_SM, ANDZOA, ORMVASM, DREFLCD-SO, DRE_SM) and cooperation agencies like PNUD (e.g. participation in development projects of argan restoration, densification and PAM); and (2) their singular local governance model (described in the previous section). Additional examples of proactive efforts of the ADL IMAL in giving visibility to their douar and fostering collaborative alliances are: (1) their active participation on initiatives fostered by PNUD like the APAC forums and national network; and (2) community willingness to collaborate with researchers of various universities and research centres, when it comes to topics potentially interesting to their territory.

3. LOCAL AND CUSTOMARY GOVERNANCE IN TAMEJLOUCHT

As indicated at the beginning of previous chapter, chapters two and three of the results section respond to the **second specific objective** (S.O. 2), which is to analyse the bottom-up processes of **local and customary governance** in the two selected **rural local communities** within the RBA.

To address the second specific objective, in both local study sites, I have developed the same research design and methods (see Fig. 14 for the “methodological design of the study and experimental set-up” and Fig. 20 for the “Specific Objectives versus Methods’ Logic”). Thus, this results’ chapter three is structured in the same way that the previous one. I present below the results for the second local community, **Tamejloucht**, in the Anti-Atlas mountains.

3.1. COMMUNITY AND AGDAL DELIMITATION

The initial approach was the same as in Tiskji, that is, to explain and discuss the topic and research question with the local community (at the association and family levels), for the same reasons as in the other community: First, the fact that no one knows the territory better than its inhabitants. And second, the spatial, administrative, legal and tribal complexity of the study area at the local level in relation to the research topic.

Then, I asked them to support me in spatially determining the scale and area of study based on my research question. This allowed me to first, deal with the spatial complexity of the study area (as mentioned above); and second, show potential relevant spatial differences between local communities and areas (e.g. High Atlas mountains and Anti-Atlas mountains) within the RBA.

Like in the case of Tiskji, here *agdal* and local community are clearly different things. So, I proceed similarly to the first case; that is: we (a) discussed and defined the concept of *agdal* for them, (b) discussed and defined the concept of community, and (c) agreed on the best way to carry out the participatory mapping (PGIS) workshops in Tamejloucht considering the characteristics and singularity of the community (that is, concluding to segregate by gender but not by age).

It was based on this collective discussion that I conducted the participatory mapping workshops afterwards, following the same procedure as in the first local community. Then, I digitised the results with ArcGIS and printed them again in a A0 size map. Finally, I validated (10-11 months after the initial workshops) the digitised PGIS with the community leaders to check if my interpretation of results was correct and incorporate their remarks if necessary.

In contrast to Tiskji, community boundaries are clearly different in Tamejloucht. For them (both women and men), their community (locally called *Taqbilt*), in the sense of link to their territory, sense of belonging and identity, is the whole tribe; that is, the tribe Ait Ouadrin which has the same spatial boundaries as the present administrative rural communes of Ait Ouadrin and Sidi Abdallah El Bouchouari (270 douars approx.). Due to scale issues and the fact that the community boundaries overlap accurately with the administrative ones, I decided to focus the PGIS workshops only in the *agdal*'s limits. However, several field trips with a community leader were carried out to check and register the GPS waypoints of the most relevant boundaries of the tribe Ait Ouadrin discussed during the workshop. And another field trip was undertaken with the community leader to validate the hand-

drawn *agdal* boundaries during the workshops. Subsection 3.1.1 introduces the visual outcomes of the PGIS workshops and subsection 3.1.2 presents the main findings in terms of content and insights.

3.1.1. PGIS WORKSHOPS

The **women's** PGIS workshop was held on 24 February 2019 with 4 participants (adults). The workshop took about 1 hour. In this case, women were not comfortable with the technique proposed (i.e. satellite image and cartographic map as base maps), so I discussed with them several alternatives, and we decided to use a mental mapping instead, as shown in Fig. 89. Figure 90 presents the final map digitised using ArcGIS and validated by the community leader.

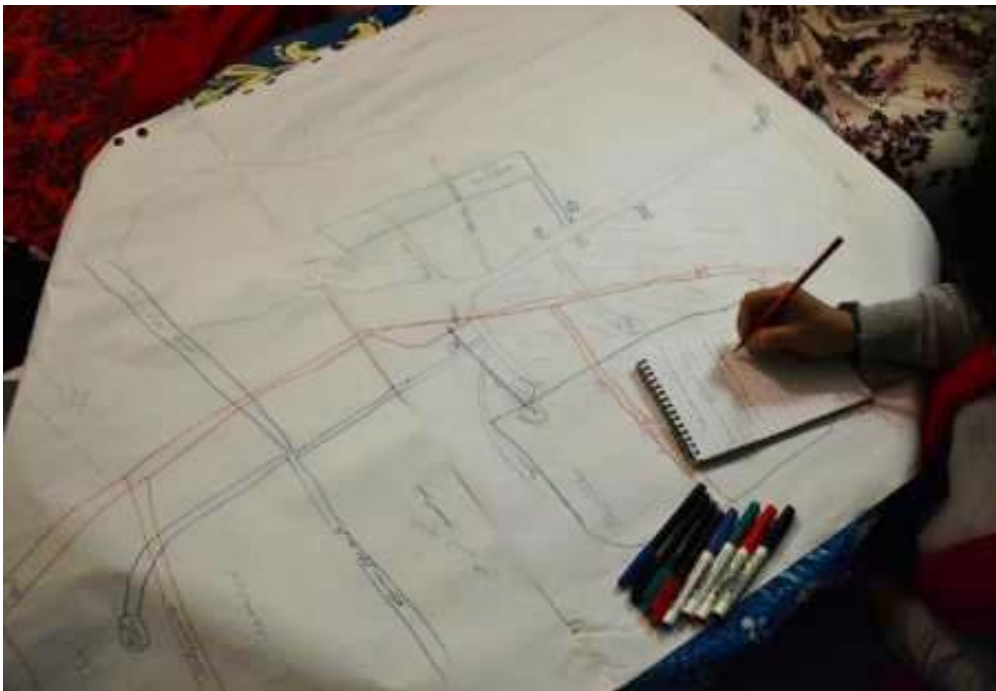


Figure 89: Women's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tamejloucht. Production of the mental map hand-drawn during the workshop (Romera, 2019).

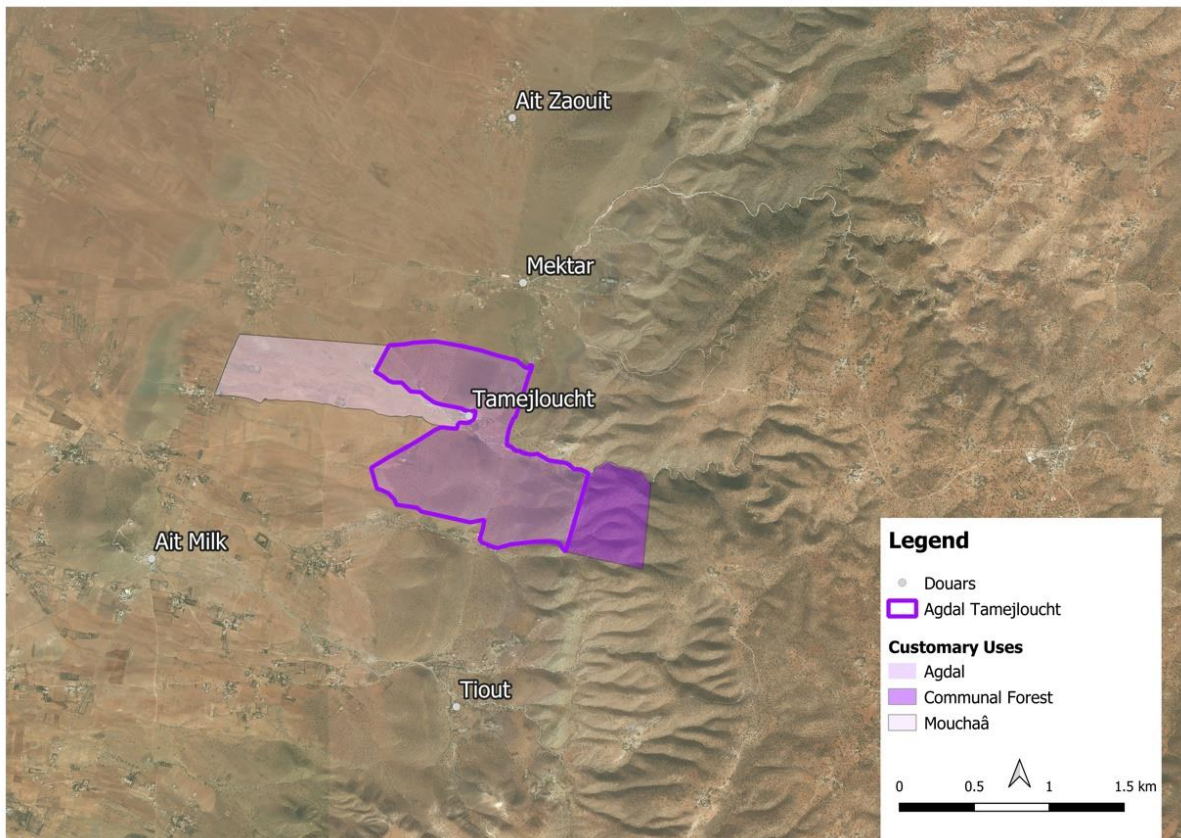


Figure 90: Women's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tamejloucht. Resulting map digitised with ArcGIS.

The **men's** PGIS workshop was held on 20 January 2019 with 9 participants (4 adults, 5 elders). The session took about 1.5 hours. Figure 91 illustrates the results from the workshop, that is, the mapping process (A) and the collectively handwritten result (B). Figure 92 presents the final map digitised using ArcGIS and validated by the community leader.



Figure 91: Men workshop on participatory mapping (PGIS). Delimitation of the agdal of Tamejloucht. (A) Production of the map. (B) Result on transparent sheet handmade during the workshop (Romera, 2019).

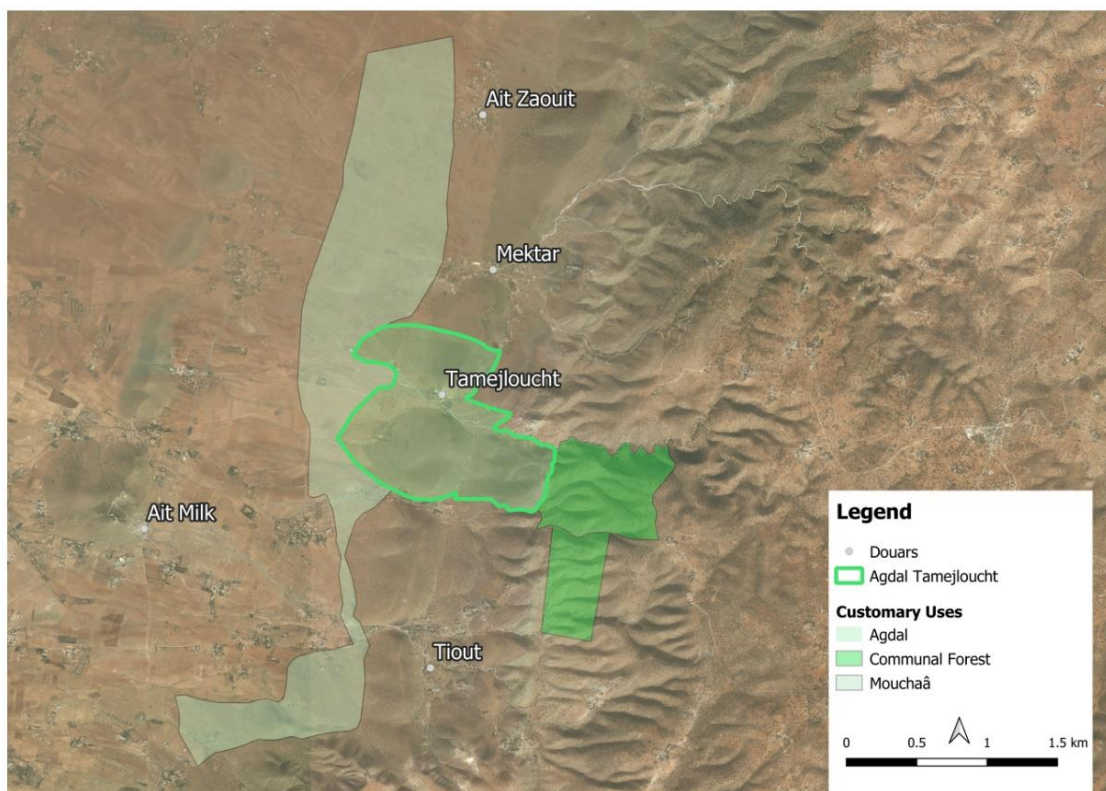


Figure 92: Men's workshop on participatory mapping (PGIS). Delimitation of the agdal of Tamejloucht. Resulting map digitised with ArcGIS.

Figure 93 illustrates the men-women comparative resulting from the overlapping of digitised maps with ArcGIS.

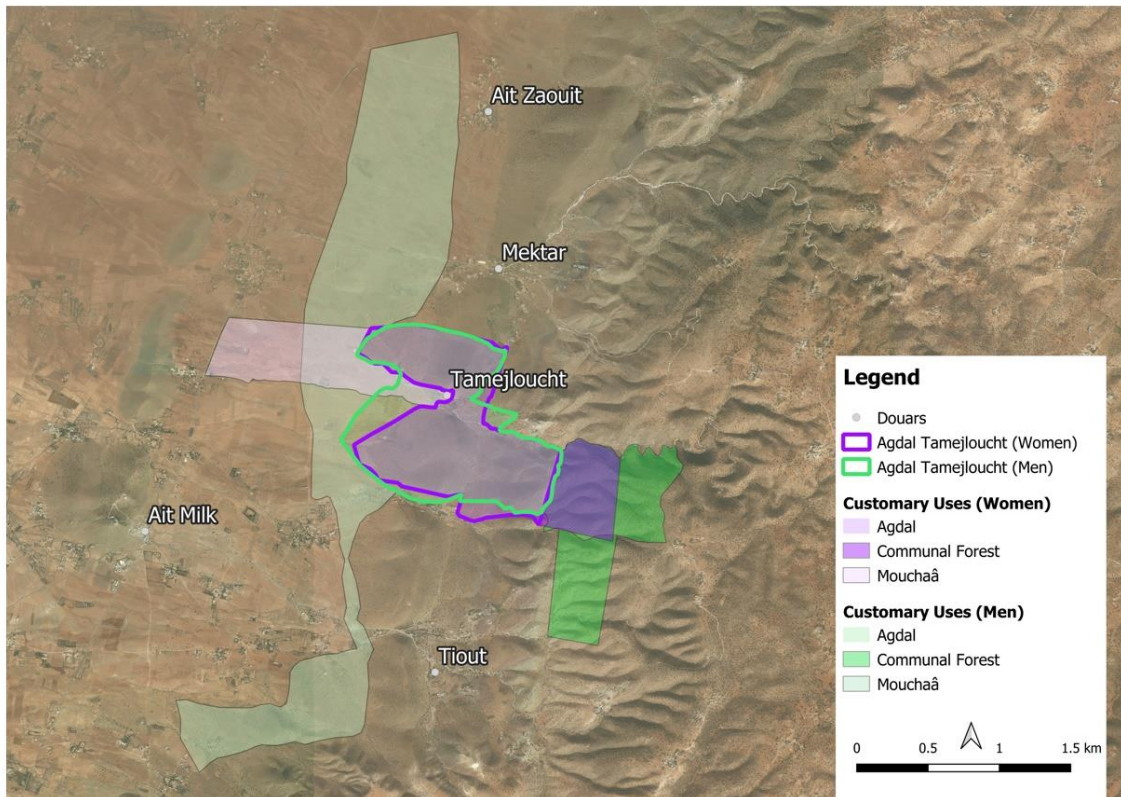


Figure 93: Workshop on participatory mapping (PGIS). Delimitation of the agdal of Tamejloucht. Comparative results of the overlapping digitised with ArcGIS.

3.1.2.PGIS: MAIN FINDINGS

First, the results from both collective PGIS workshops (women and men) show that in general terms, their collective definition of (1) community and (2) *agdal* is the same for all. *Agdal* is clearly defined as the space to which they have customary access rights to natural resources (as regulated by the legal texts on the argan forest of 1925 and 1938; see Fig. 13). While Community is not only bounded to the spatial limits of their *agdal* but to the whole tribe Ait Ouadrim (270 douars approx.; see Figs. 46 and 59), whose boundaries overlap with those of the rural communes of Ait Ouadrim and Sidi Abdallah El Bouchouari (see Figs. 47 and 60 for the administrative division and overlapping with the tribal division in the “Study area” section).

Second, the collective discussion on the concept and definition of community, identity, and sense of belonging in Tamejloucht made clear one major socio-cultural difference with the first case study community (i.e. Tiskji) in the High Atlas mountains. Despite being both isolated mountain areas, in the north western Anti-Atlas mountains (to some extent, in the whole Anti-Atlas region) the sense of belonging and identity is clearly different from populations inhabiting the Arganeraie region in the south-western High-Atlas, particularly in the Ida Outanane region. As an example, in Tamejloucht a major importance is given to what they call “the small family” (i.e. parents plus children) and “the big family” (i.e. including other close relatives such as grandparents, aunts, uncles, nieces, nephews and

grandchildren, etc.). In the region, marriages among close relatives are comparatively more frequent than in the Ida Outanane region (yet, in both cases nowadays, this is an aspect rapidly evolving). The following level of “belonging” after the family level in Tamejloucht is the tribe level, no matter the context. They express that with conviction (e.g. no need to think about it), both men and women of different generations. Regarding their attachment to their douar (which is evident even though they do not verbalise it), it may be explained by the fact that in this region frequently small douars are single-family; that is, the douar inhabitants equal “the big family”. This is the case for Tamejloucht, as described in the “Study area” section.

Third, the differences between the *agdal* limits drawn by women and men, like in Tiskji, reflect the different uses that women and men make of the *agdal*. The difference here is that these “uses”, at present, are clearly different. Partially due to the strong emigration and other cultural and family issues, in Tamejloucht it is frequent that women do not collect the argan nuts nowadays (some women do, but many others do not). Many families tend to ask others to harvest their trees, either other men or families non rights-holders from surrounding douars, or relatives still resident in Tamejloucht or the surroundings in the case of migrants. Consequently, women know *agdal* limits in the area close to their douar, but it is men who know more in detail the external and internal limits of the whole *agdal*. This is clearly because men are who at an internal level (1) negotiate with others the price and conditions for collecting their fruits; or (2) collect them themselves together with their “small family”, so they need to know in detail to which trees they have use rights. And, at an external level, are also men who discuss and/or negotiate with **the government** (either *Makhzen* or *Boughaba*¹²⁰) or other third parties about projects to be developed over areas to which they have use rights. This is fully in line with the situation described in Tiskji (i.e. men need to know their rights, in order to properly defend them, **when it comes to political issues among tribes or the government**). That is, at a more political and/or tribal level, men are the best informed and more knowledgeable; as well as for the areas far away from the douar (i.e. village), of difficult access or used only by pastoralists, to which the tribe has rights of use over the resources, even if they do not exercise these rights.

As in Tiskji, it should be highlighted again the empathetic and **non-conflicting spirit of the community leaders towards the state administration** (i.e. *Makhzen*) nowadays; particularly towards the forest administration (HCEFLCD). However, community members as a whole and local people in general refer to the forest administration as “les eaux et forêts” (neutral sense) or “Boughaba” (negative or derogatory sense) depending on the case. This openness of the community leaders to collaborate and to understand the “other part” while defending your interests and looking for solutions in present time seems to be the pillar for the hybrid type of *agdal* system and local governance model that we find at present in Tamejloucht. However, it is worth mentioning that despite the openness of the community leaders, in this case, the mistrust and suspicion of some community members towards “Boughaba” is evident and high. For these people, “Boughaba” are not only the forest administration but also the agriculture administration and even the ANDZOA; that is, any public institution or authority with responsibilities for land use. This is a mindset clearly present among certain community members (including migrants and wise people), which has an impact in the dynamics, governance and decision-making of the douar.

Subsequent community workshops to assess and validate the digitalisation of the hand-drawn transparent sheets were conducted several months after the fieldwork (06-12-2019, 3 participants).

¹²⁰ *Makhzen*: State or Government “power”. *Boughaba*: Forests Administration (and foresters) “power”.

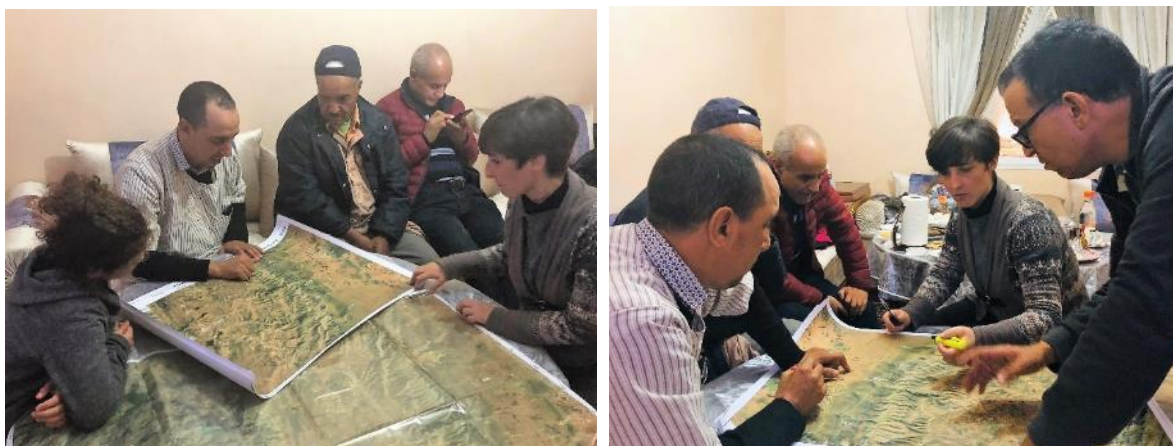


Figure 94: Community workshop in Tamejloucht to assess and validate the digitalisation of the hand-drawn participatory maps (several months after the fieldwork) (Maneja, 2019).

3.2. LOCAL ACTORS ANALYSIS

3.2.1. STAKEHOLDER IDENTIFICATION AND MAPPING

Similarly to the first local community analysed, in Tamejloucht I have also analysed the main local and regional actors having a direct influence in the local dynamics regarding environmental governance at present in the douar, as an integrating part of the comprehensive analysis of these local dynamics. By “main local actors” I mean those individuals, local organisations and groupings (i.e. douar level) who have a direct influence in the local dynamics regarding environmental governance at present (2018-2019); whereas I consider “main regional actors” those who have a direct relationship with the former “main local actors” regarding environment, development and or local governance (in the local community considered). Table 24 shows the full names and acronyms of these relevant local actors in Tamejloucht, including regional and local authorities, other relevant regional institutional actors, associations and NGOs, local leaders and other influential actors and groupings.

TAMEJLOUCHT		
Key actor acronym	Full French name	Full English name
Caïdat Ait Ouadrim	Caïdat Ait Ouadrim	Local administration
Leader family	Famille principale	Local leader family
ADL Tamejloucht	ADL – Association de développement locale	Main local development association
Nearby Douars	Douars avoisinantes	Surrounding villages
Right-holders Association	Association des Ayants Droits de l’Arganier	Right-holders Association
Souss Association	Association Souss pour la Protection de l’Arganier	Souss Association for the Protection of the Argan Forest
Eaux-et-Forêts DREFLCD-SO	Direction Régionale des Eaux et Forêts et de la Lutte Contre la Désertification Sud-Ouest	Regional Department of Water and Forest, South-West.
Wilaya	Wilaya d’Agadir Ida Outanane	Regional administration, Ministry of Interior.

Conseil Régional SM	Conseil de la Région de Souss-Massa	Souss Massa Regional Council
Argan intermediaries	Intermédiaires de l'Argan	Argan intermediaries
«New transhumant herders»	«Nouveaux transhumants»	«New transhumant herders»
ANDZOA	Agence Nationale de Développement des Zones des Oasis et de l'Arganier	National Agency for Development of Oasis Zones and the Arganeraie
Agriculture DRA-SM	Direction Régionale de l'Agriculture Souss-Massa	Regional Department of Agriculture, Ministry of Agriculture

Table 24: Tamejloucht main key actors' acronyms and full names.

An initial local actor's map of Tamejloucht (Fig. 95) shows a simplified local-regional level diagnosis of the main decision-makers in the community considered in Table 24, including their connections, degree of centrality to the network and actor's profile.

Results clearly show (as in the first case study community) the high level of centrality of the two key local actors in the community (i.e. the leader family and the ADL).

These two, together with the local authority (i.e. the Caïdat Ait Ouadrim) are the three main local actors impacting the local governance permanently, to present. Besides them, in recent times, there are other three regional institutions influencing the community and closely linked to it, through formal and informal relationships (i.e. Agriculture DRA-SM, Eaux-et-Forêts DREFLCD-SO, ANDZOA). The three institutions have or are developing different projects in the douar, either development projects (e.g. DRA-SM and ANDZOA) or conservation ones (DREFLCD-SO). At the moment of the research, the more recent project impacting the daily debates among the community members was the DARED project (i.e. a project of arganiculture consisting of argan tree plantations in private areas of the douar) funded by the ANDZOA; that is why it appears as relevant and influential in the actors' map.

As mentioned in the previous results sections, the degree of centrality is a Kumu's Social Network Analysis metric representing the total value of each actor's connections. That is, each actor's weighted number of connections with other actors regarding the local community Tamejloucht. Additionally, "key actors" here are those with a maximum degree of influence (equal to 6 in a 0-6 scale) regarding the local community decision-making and governance. They are indicated in Fig. 95 with a central orange dot and are referred to either local or regional actors.

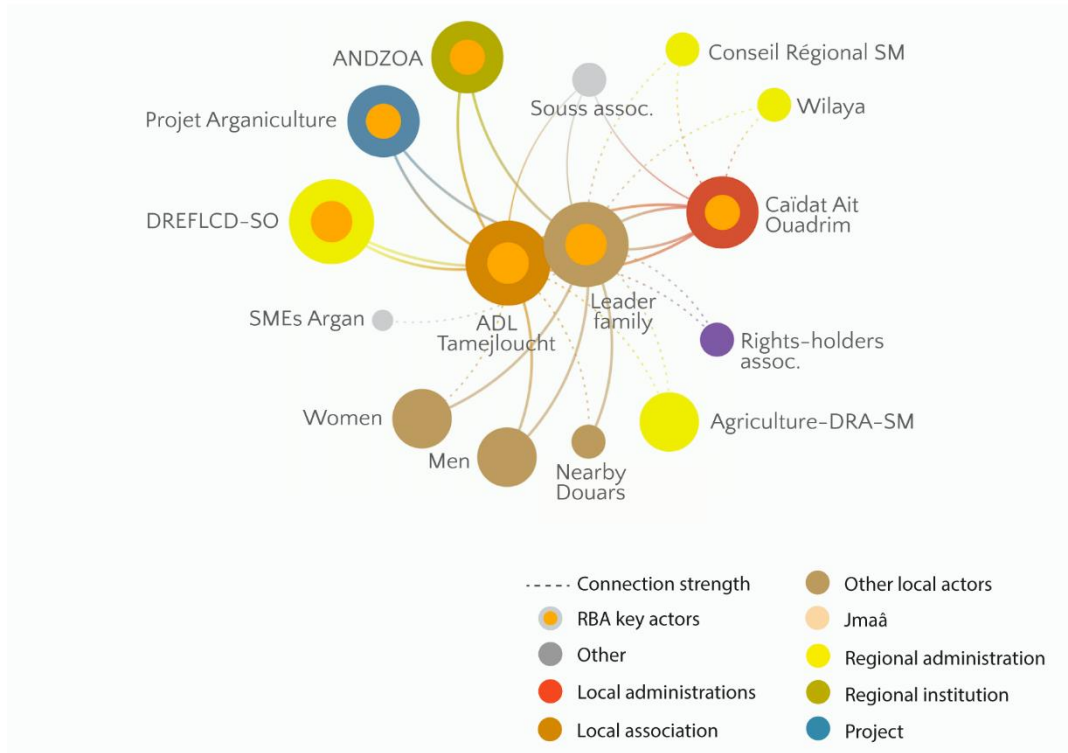


Figure 95: Tamejloucht local actor's map. Relationships and degree of centrality among the main local and regional actors (Kumu, 2020). *For further detail on actors, see Table 24.

3.2.2. ACTORS' CHARACTERIZATION

To adequately describe and analyse the characteristics and relationships of main local and regional actors in Tamejloucht previously identified (see Fig. 95); and following the same method as in the first community, I characterised them according to their CLIP descriptors (Chevalier and Buckles, 2008). Figure 96 illustrates the first result of a comprehensive CLIP social analysis in which I have divided each CLIP descriptor into its components (e.g. looking at the various components of the power or legitimacy variables). See Annex III for further detail on the comprehensive analysis of each CLIP descriptor for each actor considered. Even though the governance scenario of the community is not as complex as the one analysed at the RBA level, I deemed it useful to unveil (through the same method of analysis) which of the regional actors may be playing a relevant role at a local level, if any, and through which kind of relationships and scope. This will also help to analyse potential and real actors and institutions playing a relevant role in the local-RBA interface which will be analysed in the following chapter.

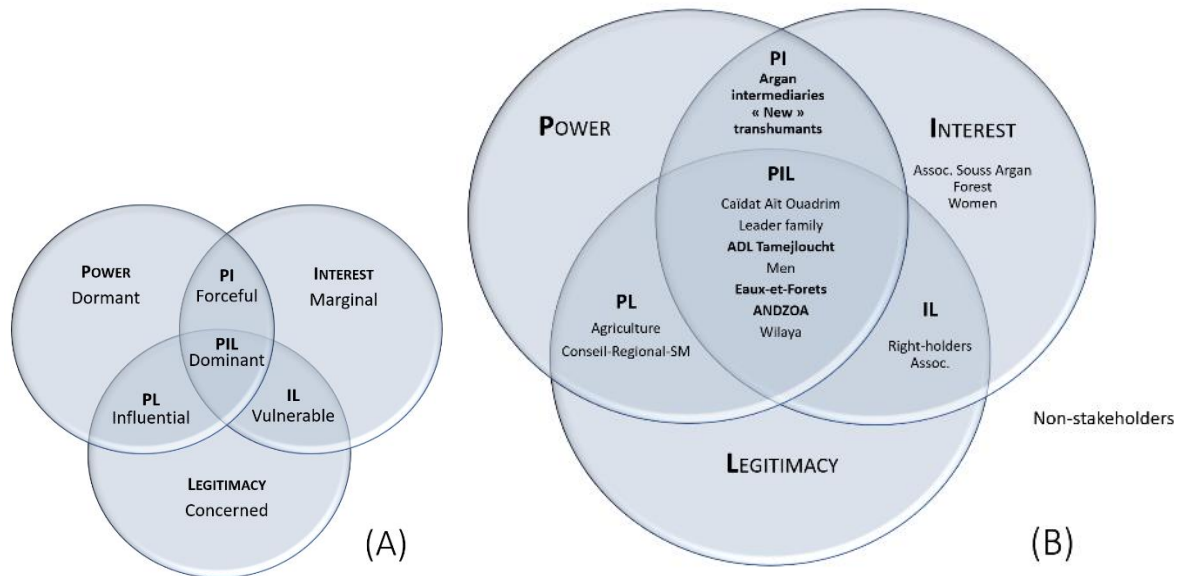


Figure 96: (A) Venn diagram showing the relationship between the various CLIP descriptors (adapted from Chevalier and Buckles, 2008). (B) Venn diagram showing the relationship between the various CLIP descriptors in Tamejloucht. *For further detail on actors, see Table 24.

In addition, the gains-losses matrix in Figure 97 illustrates the second result from the comprehensive CLIP social analysis, in which the relationships of collaboration and or conflict/competition among each of the stakeholders are analysed and charted. See Annex III for further detail on the collaboration and conflict matrix. As in previous cases, it must be noted that the analysis relies on my understanding of stakeholder relationships at the time of the fieldwork research (2019), so the nature of these relationships may have changed over time.

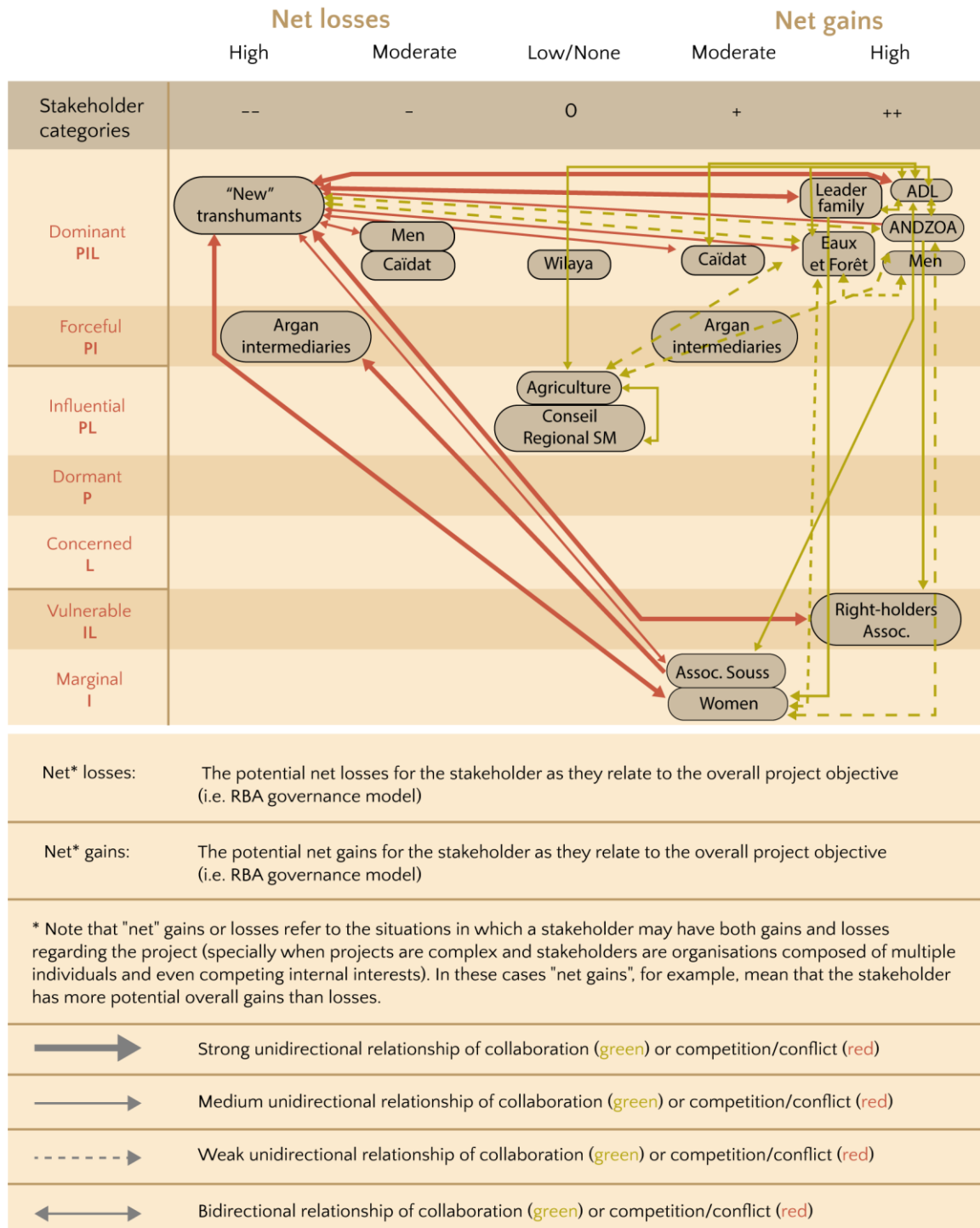


Figure 97: CLIP Social Analysis applied to the main local/regional actors in Tamejloucht. Green and red arrows show, in a simplified and weighted way, the more relevant relationships of collaboration and competing/conflicting interests detected. Adapted from (Chevalier and Buckles, 2008). *For further detail on actors, see Table 24.

3.3. ETHNOGRAPHIC DESCRIPTION AND ANALYSIS OF CUSTOMARY AND LOCAL GOVERNANCE

Following the same structure and logic of the first local community, I have relied on the joint analysis of the information obtained through different types of interviews, field notes, participant observation and collective workshops. In doing so, I have explored in depth how community members perceive and manage their *agdal* and the community itself at present. This ethnographic description and analysis of customary and local governance includes: (1) the ethnographic characterization of the *agdal* as a customary local management and governance system (subsection 3.3.1); (2) some ethnographical remarks (subsection 3.3.2); (3) a collective workshop where men in the community self-assessed their perceived resilience and explored the potential of traditional management practices for biocultural and community conservation nowadays (subsection 3.3.3); (4) a SWOT analysis of the ICCA and *agdal* (subsection 3.3.4); and (5) the main local concerns arisen from the data analysis (subsection 3.3.5).

It is worth noting that, in general terms, this society is more conservative and gender roles are kept more strictly separate than in the other local community. This is common in many Anti-Atlas communities and it constitutes a difference from the High Atlas, in general. Moreover, in Tamejloucht, women are much more distanced from the *agdal* and any other activity outside the household and the douar than women in Tisskji. This is a reason, for example, that the resilience index workshop was conducted only with men. Women here do not participate in public political discussions. The lower number of women-led argan oil cooperatives and the relative high number of argan intermediaries operating in this region are also partially explained by the fact that women tend to work exclusively from home.

3.3.1. AGDAL. CUSTOMARY LOCAL MANAGEMENT AND GOVERNANCE SYSTEM

As mentioned before, note for context that (i) the general singularities of the *agdals* in the Arganeraie region have been already explained in subsections 3.2.2 and 3.2.3 of the conceptual chapter and are relevant to understand and contextualise these results; And (ii) the method, format and factors considered in the ethnographic characterization of the *agdal* of Tamejloucht (Table 25) allow for the characterization of other *agdals* and agro-silvo-pastoral ICCAs¹²¹.

Note also that the *agdal* in this region is locally called *Tafgourt* and very often people also use the word “argan” as a synonym of *agdal*. For example, they usually talk about “argan closing” and “argan opening”:

"People want the argan to be closed; some even want to close it all year round" (local leader).

ETHNOGRAPHIC CHARACTERIZATION OF THE AGDAL OF TAMEJLOUCHT

Factors	Description
Area	<i>Agdal</i> area: 424 Ha Macro-area of study around the <i>agdal</i> directly linked to it: the Caïdat of Ait Quadrim (1976), including rural communes/municipalities of Sidi Abdallah

¹²¹ Project MAVA M6 Overarching Initiative: "Communal Governance Systems, community engagement and public participation" (2017-2022).

	Bouchouari and Ait Ouadrim ¹²² . Area: 18,200 Ha RC Sidi Abdallah El Bouchouari and 13,600 Ha RC Ait Ouadrim. This means that the <i>agdal</i> is 2.33 % of the total territory of the municipality Sidi Abdallah El Bouchouari.
Different Ethnic or Social groups using the <i>agdal</i>	Amazigh (100%)
Number of families using the <i>agdal</i>	Approximate number of tree owners using the <i>agdal</i> : 25/30 families (i.e. <i>kanoun</i>) Approximate number of herd owners using the <i>agdal</i> : 4-5 families Approximate number of total family members dependent on the <i>agdal</i> : 4/5 member/family, which means 100-150 rights-holders in Tamejloucht.
Number of pastoralists using the <i>agdal</i>	At present, there are 4-5 pastoralist families in Tamejloucht. Two of them have only sheep and the other have both sheep and goats. No transhumant herders from the tribe (with use rights).
Permanence	<i>Agdal</i> is a seasonal access regulation system linked mainly to the argan tree flowering period. But the area managed as a Common is permanent, even though the property of the forest and land is state-owned. Tamejloucht <i>agdal</i> is closed to pastoralism and people during the blooming season from end April to end August of each year. Dates may slightly change due to the flowering of argan but are maintained throughout the years. However, during the last few years, when a risk of “new transhumant herds” ¹²³ arrival is detected, rights-holders may decide to bring forward the opening of the <i>agdal</i> (to harvest the fruit before it is eaten by animals or picked by non-rights-holders).
Community Rights over Resources¹²⁴	<input checked="" type="checkbox"/> Rights to only certain resources <input checked="" type="checkbox"/> Right to commercial use of the resources
Major threats to the <i>agdal</i>	1 - De-legitimisation of customary rights/ Over-harvesting / and Conflict with other communities (transhuman herders-camels) 2 - Global climate change (drought and fruit production) 3 - Loss of knowledge/cultural change (emigration) 4 - Inappropriate forms of recognition by governmental agencies or conservation organisation 5 - National policies
Infrastructures (linked to the <i>agdal</i>)	In the area of the tribe <i>Ait Ouadrim</i> there are 2-3 sheepfolds, locally called <i>Aâzibs</i> or <i>Tiglay</i> (e.g. Boulbaroud and Lkest). The main <i>Aâzib</i> is the one located in Lkest (close to Sidi Brahim Oâl sanctuary). Herds are taken there during 3 months with a guardian or a rotation system for guard. In Tamejloucht there is no fixed <i>Aâzib</i> as such because they are close to a plain area (towards Sebt Ait Milk) where there are no argan trees, so animals are taken there during <i>agdal</i> closing. People can even install temporary enclosures “ <i>Ifergan</i> ” for their animals and tents for herders that they consider also as <i>Aâzibs</i> .

¹²² Ait Ouadrim is one tribe and one single rural commune since 1976; divided in two rural communes in 1992. Source: ICR-HCP(2010-2011).

¹²³What I have called the “new transhumant herds” conflict is a recent conflict of national relevance and interregional impact, mainly affecting the southern provinces and the Souss Massa region. There, the ancient balance between local rights-holders tribes and transhumant visitor tribes has been disturbed (as it will be explained below), resulting in an increasing number of big camel owners bringing hundreds of animals every season into arganeraie’s *agdals* and even private lands.

¹²⁴ This information may help distinguish between owners and other stakeholders and clarify the level and extent of control.

	<p>Most common infrastructures for animals in Tamejloucht are spaces within the private houses called either <i>Tagloyt</i>, <i>Tagroust</i> or <i>Takrit</i>¹²⁵. There are 5 active.</p> <p>There are also 4 drinking troughs (i.e. <i>tiferwin</i>) in Tamejloucht, in one single source or well. And several traditional reservoirs that collect rainwater (i.e. <i>tanutfi</i>) after a process of water filtering (i.e. <i>assaght</i>) inside houses.</p> <p>In Ait Ouadrin there are 4 wells or reservoirs (i.e. <i>iferd</i>) with drinking troughs.</p>
Forms of grazing	Extensive
Flocks	<p>In Tamejloucht and the region, the average flock's size is of 30/40 livestock heads between goats and sheep, among local rights-holders. In the whole tribe of Ait Ouadrin there are 5,000 heads approx. The inhabitants of Tamejloucht own 120-160 livestock heads of sheep and goats in total. Overall, there are more goats than sheep (50 sheep and 70 goats).</p> <p>"New transhumant herders" arriving in the region (non-rights-holders) are of a different order of magnitude or scale: they are reported by locals to have herds from 400/500 heads until 700/1,000 heads (of goats and camels).</p>
Agdal agropastoral history	<p>Linked to the <i>agdal</i> system, Amazigh traditions and local history, everyone talks about three main periods: before, during and after French colonisation (French protectorate: 1912-1956). See Fig. 69 for further detail.</p> <p>After that, two other issues are reported to have impacted the <i>agdal</i> institution and the customary norms in Tamejloucht and the Ait Ouadrin region:</p> <p>First, the early 2000s marked the disappearance of Jmaâ and the apparition of Associations (i.e. local development associations, ADL), locally called <i>Jmaâya</i>.</p> <p>Second, since 2015 approx. the "new transhumant herds" phenomenon is having a deep impact not only in the ecosystem but also in local behaviours and the strength of customary norms in all the region.</p> <p>Finally, there are two festivities to open and close the <i>agdal</i> season locally called "<i>Almougar</i>"¹²⁶, regionally called <i>Mousseem</i> (which literally means meeting or gathering).</p>
De facto / direct users of the agdal	25/30 families harvest the argan nuts each year. And 5 pastoralists from Tamejloucht.
Local/external users of the agdal	<p>Shepherds or pastoralists from the whole tribe of Ait Ouadrin have access rights to the <i>agdal</i> (although on most occasions they do not use them). However, argan trees' use rights are assigned to specific families; so, for example, only the 25-30 rights-holders' families from Tamejloucht have access to their <i>agdal</i>.</p> <p>Nowadays, the shift threatening both, the <i>agdal</i> system and the ecosystem carrying capacity, are the external non-rights-holders transhumant herders accessing the area during the last 5-7 years with herds of 600-1000 heads of camels and goats, while the total local herds are 100-150 heads of sheep and goats.</p>
Traditional Institution of governance (tribal)	<p>The ADL (locally called <i>Jmaâya</i>, meaning association) manages the <i>agdal</i> of Tamejloucht. The traditional Jmaâ is reported to have disappeared in early 2000s (since the Moroccan Law of Associations¹²⁷).</p> <p>The Jmaâ foundational date is unknown. Everyone says, "since ancient times" or "since always". It is well-known that the Jmaâ has been the institution of governance for local people since immemorial times.</p>

¹²⁵ A special place in or around the house for animals.

¹²⁶ Also "almuggar" or "almuqqar".

¹²⁷ Law n°75-00, of 23 July 2002, regulating the right of association. This law is perceived by the community leaders as the responsible for the disappearance of the Jmaâ and the apparition of the ADL (Local Development Association). It is perceived as linked to the terrorist attacks of USA (11-9-2001), after which the Moroccan Government would seek to legally regulate any associative or community grouping that handles public and/or external funding, for the security of all the population. This law would have had a big impact in the ancient customary tribal institutions, becoming the ADL a best suited tool of local development.

Present Institution of governance	ADL of Tamejloucht (Local Development Association) since the Moroccan Law of Associations of 2002.	
Members participating in the <i>agdal</i>-ICCA governance institution	The local ADL members (4-5 people approx.).	
Functions of the governance institution	Long-term natural resources management and conflict resolution mainly.	
Place of meetings	Not fixed, in the weekly souk of Sebt Ait Milk, private houses, social events, the mosque, etc.	
Register of minutes	No registering of minutes	
<i>Agdal</i> statutes and rules	<i>Agdal</i> closing and opening	<p><i>Agdal</i> closes to animals and people around 21-22 April (i.e. 1st Thursday of the agricultural calendar “<i>avril el filahi</i>”, which is 13 days out of sync) and opens around end August. The areas where barley is grown are forcibly closed from November to August; the argan tree rests and produces good production/yield.</p> <p><i>Agdal</i> in the argan forest depends, first, on the flowering of the argan tree each year. The flowering period may vary according to the climate conditions, the rain and/or the conservation state of the forest ecosystem. The argan shares this year's fruit with the flower that will give the fruit the following year (see Photo 2, Fig. 86). <i>Agdal</i> is practised protecting the following year's harvest, both from the animals that climb up the tree to eat and damage the flower and from people who do not respect the traditional practice of harvesting the argan fruits from the ground once they have well matured and fallen.</p> <p>However, in Tamejloucht nowadays (and the Ait Ouadrim area) <i>agdal</i> opening may be anticipated for non-natural reasons like the prevision of “new transhumant herds” arrival that might threaten the yield. In consequence, <i>agdal</i> might be opened even before the optimal maturation of the fruits.</p>
	Access outside dates	Non-compliance with the date of opening, as for other non-compliance of rules, implies fines of 100, 200 and 500 MAD (goats and sheep, camels, and people respectively).
	Entrance and exit rules compliance	<p>In Tamejloucht there is high compliance of rules. However, in case of conflict and or infringement of rules, they are usually solved at a community and Caïdat level. Intra-community and intra-tribe conflicts may be due to right access to a-certain tree/s or due to practices harmful for the tree and the argan production, like beating the trees.</p> <p>However, the only conflict that worries everybody is the massive arrival of non-rights-holder transhumant herds of camels during the last 5-7 years.</p>
	How does the distribution of use-rights take place	<p>Argan fruit harvesting areas belonging to each douar and family are well known, reclaimed and respected. Each family knows which are their trees. For migrant heirs, they have always a relative in the douar who knows in detail their use rights and spatial limits.</p> <p>Each family chooses the place where grazing will occur, without the existence of clear rules about it. If necessary, it would take place through day-to-day verbal agreement.</p>

	Requirements	To have historical inherited rights over the argan trees ("belonging" to your family, tribal lineage, patrilineal).
	Sanctions	The traditional conflict resolution process avoids the point where sanctions (often economic) are needed. In case they do, it is the <i>Jmaâya</i> (i.e. the ADL or local association) in coordination with the Caïdat (local authority), the institution applying them at a community level, as the ancient Jmaâ used to do. Fines are of 100 MAD for goats-sheep-cows, 200 MAD for camels and 500 MAD for people. In case it does not work, the community addresses the issue to the <i>Caïd</i> ¹²⁸ . If it is necessary, it is the National/Regional Justice Administration who intervenes at the end (usually the Administrative Court in Agadir). <i>"Locals often fear the sanctions and even more official Justice, but nomads do not"</i> .
Leasing land	As the forest property is on the Forestry Administration, this does not apply in this case. Nevertheless, harvesting rights of families no longer living in the douar or village can be "leased" somehow, so the absent rights-holders pay (with fruits or money) to the ones who harvest "their trees". The duration of agreements may vary, but normally it is yearly. Agreements are established close to the <i>agdal</i> opening. Periods in which the leasing use-rights is paid. After the harvest, every year When it is someone else harvesting the argan nuts instead of the rights-holder. The payment is done either "in kind" right after the harvest or with money right after the sale of the argan nuts. The cost (in €) 200-250 MAD per bag of 60-70 kg.	
Communal investments	None	
Possible external funding	No external funding (subsidies, funds or others) for the <i>agdal</i> or common.	
Production statistics	Regarding argan production, as in the case of Tisskji, there are no registered data, nor a local track record. In addition, production variability each season is high and multifactorial (e.g. it may vary according to the climate conditions, the rain and/or the conservation state of the forest ecosystem). In general tree density decreases towards the south and the desert areas. Tree density is much lower in the Anti-Atlas region than in the High Atlas. But also argan forest in Tamejloucht is not a mixed forest as in Tisskji. However, a tentative rough estimation considering some data reported by locals would indicate around 100-300 tonnes a year. While the average family yield is of 1.2 tonnes. 0.5 tonnes in 2015-2019 (at present); and 9 tonnes in 2000s (recent past). No data regarding animals sold per year. However, animals tend to be sold either in drought periods or when the family needs extra money.	

¹²⁸ *Caïd*: In Morocco nowadays, a Caïd is a Muslim civil servant with the functions of judge, administrator and chief of police at the Caïdat (district) level. In general, Caïd is the Arabic term for a kind of judge or governor in some Muslim countries. The word caïd means leader, guide or warlord.

Argan and livestock management	<p>Argan processing and management in Tamejloucht is organised at a family/household level. There are no women-led argan oil cooperatives in the Caïdat Ait Ouadrim (including Tamejloucht). There used to be one in Ait Ouadrim, but it closed in 2016. In the whole region the argan sector is organised around intermediaries who buy the argan fruit from rights-holder families, and then they redistribute it among local women (sometimes the same ones); to whom the intermediaries pay for doing the de-pulping of fruits and/or the crushing of the argan nuts.</p> <p>Livestock management is also organised at a family/household level. The organisation is flexible, yet frequently are adult men the ones in charge of herds outside the house.</p>
Adaptation strategies	<p>The most frequent adaptation strategy regarding livestock tends to be selling the animals in the souk or local market.</p> <p>In the last two decades, the strategy in the region in general and in Tamejloucht in particular, has been to shift from animals and pastoralism to a strategy of multisource of income per household (e.g. animals, argan, services, income from migrants, labourers in intensive farming) and the argan oil and honey sectors. Thus, they try to face the high variability affecting natural resources availability each year. But it is also a response to the higher profit margins in these sectors.</p> <p>Last years, due to massive “new transhumant herds” arrival and drought, another adaptation strategy reported is to choose goats instead of sheep, because their food requirements are less restrictive, and they can climb the argan trees, so herders need to buy less fodder.</p>
Involved actors	<p>Public actors: Interior, Agriculture and Justice Ministries mainly; and their regional and local bodies.</p> <p>Private actors: Community members (mainly those with rights over the resources).</p> <p>Associations: Development association (ADL). Only one in Tamejloucht.</p>
Is there government support or laws to assist management?	<p>Strictly to assist <i>agdal</i> governance and management, there is no government support. Despite being strongly demanded at local and regional level by individual rights holders, ADLs, the provincial associations of rights-holders and their regional Federation (i.e. FIFARGANE).</p> <p>But there exists the legal recognition of certain traditional local rights over the resources of the argan forest, as seen in the case of Tisskji. See Table 19 and Fig. 13 for further details.</p>

Table 25: Main features describing the *agdal* of Tamejloucht in the Ait Ouadrim region (Tribe Ait Ouadrim), NW Anti-Atlas mountains.

3.3.2. ETHNOGRAPHICAL REMARKS

Here the current generation of community leaders have appealed to the *agdal* customary institution and tradition, as an identity issue, to fight against external threats like the “new transhumant herds” phenomenon or either to claim for their rights and interests vis-à-vis administrations, third parties, etc.

In the whole region (and in the Anti-Atlas in general) it is worth noting the particular sense of identity and the also particular decision-making style. Properly understanding these two aspects from an ethnographic and sociological angle, would contribute to better address policies and actions to a rural territory which we could say is locally managed under “urban” or non-rural worldviews. This is a result of the historical dynamic of migration towards big cities such as Casablanca, Agadir (Inezgane) or even France but maintaining strong links (economic, familiar and identity) with the douar of provenance/origin. Further reference and analysis of this phenomenon can be consulted in the literature (De Haas, 2006; Montagne, 1930; Riser, 1988; Ziyadi, 2011).

There is a psychological effect due sometimes to physical and/or mental distance (typical case for migrants) and sometimes to lack of information and/or detailed knowledge (typical case for older people) that does not contribute positively to dialogue and understanding, nor to the development of innovative projects or actions in the community. This psychological effect enhances, among others, stereotypes concerning foresters for example (not necessarily based on actual and real facts) and even criticisms and rejection towards collaboration and development projects. It also enhances openly biased judgements and opinions concerning different issues and actors.

It fosters mistrust towards institutions and towards one's own community, towards the commons, i.e. it encourages individualism and self-interest. This is sometimes due to past traumas (conflict situations experienced by older people in their youth or childhood¹²⁹); and sometimes to the insecurity and mistrust that what belongs to you is at risk while you are absent or far away. These two phenomena are observed in Tamejloucht, along with a third one that is linked to decision-making in the rural world from an urban "foreign" point of view (example of the argan sector and certain "urban" aspirations of families who are still linked to the douar but who live outside most of the time).

3.3.3. ICCA-COMMUNITY RESILIENCE INDEX

Similarly to the previous case, the main aim of conducting the resilience index collective workshop was to invite local participants to reflect collectively in depth about their community and *agdal*, and to better understand the main defining characteristics of both, not spotted during the individual interviews and previous activities. I did so by using the "ICCA Resilience and Security Tool" as for Tiskji. However, the authors warn that the assessment and analysis need to make sense for the custodian community (Borrini-Feyerabend and Campese, 2017). In this sense, community leaders agreed in the initial meetings that the resilience index workshop offered useful information to the community and a good opportunity for collective debate (besides the research project itself).

Annex IV shows in detail the self-assessed scores regarding the main internal and external factors related to the local community and *agdal* governance and resilience. The process considers the same parameters (i.e. internal and external factors) as in the case of Tiskji (chapter two of results). As indicated before, beyond the numerical score or index, the utility of this method is to invite community members to think about phenomena that may affect the community or *agdal* and identify the key issues at stake. In the case of Tamejloucht, this was of special relevance because many of the participants do not inhabit the douar on a regular basis, so this kind of collective encounters and thinking is valuable.

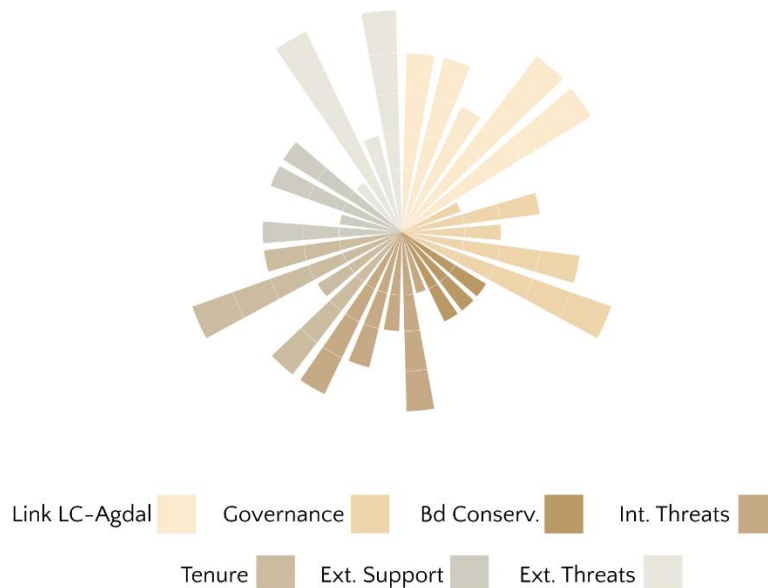
¹²⁹ For example, a fine for cutting wood for subsistence which menaced the weak family economy; or a (sometimes violent) conflict with an authoritarian armed officer. Menaces, cases of corruption and the like experienced by old people or their families from public workers or representatives are also common causes of past traumas.



Figure 98: Resilience Index Workshops in Tamejloucht. Men’s reflection, discussion and consensus process during the workshop (Romera, 2019).

Due to the socio-cultural characteristics of the community, in Tamejloucht the ICCA Resilience workshop was conducted only with male community members from Tamejloucht and Mektar¹³⁰. It was held the 17 February 2019 with the participation of 9 people (7 adults¹³¹, 2 elders) and a duration of 2.5 hours.

As mentioned in chapter two of results, the resilience index has no pretence of precision or comparability outside the local context. That said, identifying which index components or factors scored very low may suggest areas where action can be taken to protect and strengthen both the community and their *agdal*. Figure 99 shows in a visually summarised form the various index subsections’ score in Tamejloucht. In all, the resilience index in Tamejloucht was scored 53%.



¹³⁰ Participants from Tamejloucht and Mektar have close and numerous family relationships. Mektar is the north-neighbouring douar to Tamejloucht, a bit bigger and where children from Tamejloucht go to primary school.

¹³¹ Adults (20-55); Elders, considered wise people (+55)

Figure 99: Resilience Index Diagram in Tamejloucht. Men's self-assessment regarding the main internal and external factors related to the local community (LC), *agdal*, governance and resilience.

INTERNAL FACTORS

1) *The integrity and strength of the community and the connection between the community and its territory* (Link LC-*agdal*)

Community's cultural, spiritual and other non-material values are appreciated by the internal community members (including wives and husbands of people from Tamejloucht). But they are not appreciated by people from outside.

Regarding biodiversity most people in the community declare themselves knowledgeable and active in conservation, but some participants disagree. An elder community member argues that "even before Arab nomads, they (locals) did not respect the *agdal*, they cut argan wood".

They acknowledge that caring for and know and respect their *agdal* and community is not the same, but they insist on scoring high the "intensity and continuity of attachment to their *agdal*" arguing that "it (the argan/*agdal*) is money nowadays"

2) *The functioning of the governance system* (Governance)

Agdal-related institution (i.e. the *Jmaâ*) was still active in the 2000s, although very often disrespected. Management decisions about the *agdal* are for the Caïd ("*they* [locals] *only deal with the Caïd*"). Besides, since the 2000s, there is a shift from ancient *Jmaâs* towards associations (i.e. ADLs) as local (non-state-led) institutions engaged in decision-making and local development.

Regarding community cohesion and solidarity, they state "for hunger, yes", meaning that the community stands in solidarity for major issues (*Solidarity only for "the bread"*). People still participate in common festivities, but the rest of initiatives are in decline and in the process of weakening.

Rules are well known by the majority of people and infractions committed by community members are rare. However, there is no law but "justice", meaning there are friendly agreements between the parties.

Regarding transparency and accountability, there are no minutes or written documents, but information on local decision-making is readily and widely available, even for those far away (in Casablanca or France), by telephone.

There is excellent respect for agreed procedures and satisfaction of criteria such as the four just mentioned.

3) *The territory's conservation status and the livelihoods and well-being of the community* (Bd Conserv.)

Ecosystems in and surrounding the *agdal* are affected by different pressures like drought, rain and hunting. They claim, "*Even if the agdal is closed, there is hunting*", "there is no agriculture or Gazelles, only snakes".

Regarding the quality of livelihoods for the community governing the *agdal*, a significant part of the population has a low standard of living with limited access to health and education facilities. They deal with the situation through solidarity between people.

4) *Internal threats to cohesion, and internal socio-political and cultural change* (Int. Threats)

About migration negatively affecting the community, nowadays most of the people have migrated outside the area (high depopulation). Participants state *"they [people] are all out, they are not coming back, but the link exists, it is a strong connection, and it will continue. The link is always there. They come for the holidays"*.

Evidence of cultural change related to influences of globalization, because of extensive migration, etc. exist. Changes occur and some elements of local culture are lost, but others remain alive. The main drivers of change reported are: Electricity (in 2005), Mobile phones (in 2006) and the Internet (in 2014).

There is a growing trend of negative change in economic lifestyles and aspirations. Participants claim, *"There is not enough technology to stay in the village. The road is also missing. We can't choose"*.

Regarding political/social fragmentation, sharp socio-political differences exist, but most of them are respectfully dealt with. All together look for the common good, for example, for the elections, they agree on one party, one family more or less.

EXTERNAL FACTORS

5) Issues of tenure rights and recognition (Tenure)

The *agdal* is recognised and respected by most neighbouring communities. *"There is respect between tribes"*. However, people do not respect the *agdal* in the last few years, since the *"new transhumant herds"* phenomenon.

They acknowledge limited or sporadic recognition and support of their collective territorial natural resource rights by State agencies and civil society in general. They argue *"the State knows that there is the Jmaâ, ... but to have real recognition, you need a law that protects the agdal and the rights-holders"* and this law does not exist.

Community leaders recognise that collective territorial natural resource rights are de facto/informally recognised by state agencies. Collaboration is positive, respectful, and has been happening for a long time. However, not all the participants agree.

Regarding the *agdal* status formally recognised in state law and policy and government support, legislation is unclear, but support can be argued for. Participants note that the solution of the State is the *"Customary law"*, however, *"the problem is that it is not valid on the ground"*. Meaning that the law is not feasible or enforceable on the ground, particularly due to the recent evolution of pastoral transhumance.

6) Level of support from third parties (Ext. Support)

Only part of the political support (from outsiders) desired/needed is received. For example, they receive political support from the Regional and Provincial Associations of Rights-holders (i.e. FIFARGANE and Provincial Association of Rights-holders of Ait Baha).

Regarding cultural recognition, they note that culture, identity, local language and other cultural expressions are enough valued (e.g. there are associations outside -Agadir, Casablanca, France, etc.-, made by people from the community who are proud to promote their cultural identity); but they are also unevenly respected by governmental agencies and others.

7) External threats and disruptive forces likely to affect the sustainability of the ICCA (Ext. Threats)

They acknowledge major economic forces coveting the ICCA, that they operate in alliance with the national government. They mention two major threats: First, “Boughaba” (i.e. forestry administration who manages public forests in the country), the State “who has taken our rights” ... “because the problem is that they register the goods... so they can give the land to someone else, to an investor like you said, what are you going to tell them!”. Second, the Arab transhumant herders, “(they) are mafias protected by the State; then, where will we file a complaint?”.

3.3.4. SWOT ANALYSIS OF THE ICCA AND AGDAL

STRENGTHS	<ul style="list-style-type: none"> - Strong identity of local population. - Customary management and governance model. - Local traditional and ecological knowledge and resilience. - Argan forest (as a source of income). - Willingness, commitment to and experience in building partnerships with regional administrations, public agencies and other organisations and NGOs.
WEAKNESSES	<ul style="list-style-type: none"> - High depopulation. Only 10 of the 25-30 families (<i>kanoun</i>) of the douar still inhabit there. - Lack of school and school transport (the closest one is 5 km away). - Lack of a paved road. - Lack of employment, services and other economic activities (apart from pastoralism and subsistence agriculture).
OPPORTUNITIES	<ul style="list-style-type: none"> - Development projects and investments in cooperation with regional and national institutions. - Valorisation of local products (e.g. honey, argan products, goat products) and rural tourism, among others.
THREATS	<ul style="list-style-type: none"> - Drought. - “New transhumant herds” phenomenon during the last 7 years (“Arab herds of camels and goats”). - River¹³² floods that uproot argan trees.

Table 26: Brief description of the main characteristics for each factor in Tamejloucht in terms of a SWOT analysis.

3.3.5. MAIN LOCAL CONCERNS

In line with the previous section, the two main concerns of local community in Tamejloucht regarding not only environmental governance, but also the present and future of livelihoods in the area, are first, the “new transhumant herds” conflict, and second, the lack of basic infrastructures, land tenure issues and poverty impacting the douar negatively. In addition, current and future developments on the argan sector influencing their territory, high depopulation and livelihoods in the near future are also among the local community main concerns.

“NEW TRANSHUMANT HERDS” CONFLICT

With regard to what I have called “new transhumant herds” conflict, for context, it should be said that it is a recent (since 5-7 years ago, 2012-2014, as reported for the study area) issue of national

¹³² Locally called “*ighzer*” in the area, meaning small stationary mountain rivers typical in semiarid regions.

relevance and interregional impact (mainly affecting the southern provinces and the Souss Massa region, but not only); of such magnitude that it has fuelled a new national law in 2016, the Law 113/13¹³³ concerning pastoral transhumance (still to be fully developed, its application texts, and implemented).

The Souss Massa Region has been crossed historically by several transhumant routes. The ancient sedentary tribes inhabiting the Argan forest (today's rights-holders of the Arganeraie), have always been in harmony or equilibrium with transhumant visitors. However, in recent times and due to several interrelated and complex dynamics (whose analysis is out of the scope of this thesis), the balance has been disturbed due to climatic, socioeconomic, political and socio-cultural issues. The two following quotes from wise members of the community may summarise the situation:

"Arab transhumant herders ... they are numerous and dangerous; ... during my childhood there were always transhumant herders, especially from Ouarzazate, but they were never a problem because they respect the inhabitants and also the limits, today this is no longer the case ; the transhumant herds have become more and more numerous and on top of that transhumant herders don't respect the law" (wise woman over her 70s, February 10, 2019).

So, camel herds are not only the problems they cause, but they are also an excuse for the locals not to respect the *agdal*? *"Yes, that's it, that's why. It hasn't been a long time since this problem began 4 or 5 years ago. They used to come before, but it's just temporary, they don't do like now. Now they come, they set up the tents, and they stay until there's nothing left. How long? I don't know. Moreover, a group comes and leaves; then, after 10 or 15 days, another group comes. So, it's almost permanent, and especially when there's drought in the Sahara, when the rain doesn't fall there, there's nothing to eat for the animals and that's when they come"* (wise man, migrant, February 24, 2019.)

In this context, the main concerns of the local community regarding the "new transhumant herds" conflict are mainly related to the *agdal* and livelihoods. More specifically, Table 27 displays local concerns regarding these "new transhumant herders" (locally referred to as Arabs, nomads, mafia or mobile herds).

LOCAL CONCERNS ABOUT "NEW TRANSHUMANT HERDERS"
They can become dangerous and or violent against locals.
They enter even in private properties (either with argan trees, cactus plantations or cereal crops).
They have a direct impact on the income of locals, derived from: <ul style="list-style-type: none"> • Less revenues from argan, meaning less kilos of argan fruit collected, but also harm to next year's production due to damage to present year's flowering. • Impacts on the production costs of herders. Camels eat everything, so local herders must buy forage for their animals. Also, they chose goats instead of sheep because they have less food requirements (after grass has been eaten by camels). • o Destruction of local development long-term projects carried out in the douar, like the cactus plantation in collaboration with the administration of agriculture, just when they were starting to have revenues.
They do not respect local customary norms and by doing that they have an additional indirect impact on locals that are, in turn, encouraged to not respecting the norms, to opening the <i>agdal</i> restriction too early, etc.
They foster tension between the local community and the public authorities because locals feel they are not supported by the State.
They contribute to the fatigue and loss of hope of the local people in the struggle for a future in the village, already affected by other problems such as severe depopulation, poverty and lack of basic infrastructures.

Table 27: Local concerns in Tamejloucht regarding "new transhumant herders" in the Chtouka-Ait Baha region.

¹³³ Law n° 113-13 of 27 April 2016 concerning pastoral transhumance and the development and management of pastoral and sylvo-pastoral areas (Loi n° 113-13 du 27 avril 2016 relative à la transhumance pastorale, à l'aménagement et à la gestion des espaces pastoraux et sylvopastoraux)
<http://www.fao.org/faolex/results/details/en/c/LEX-FAOC177626/>

Two of the community leaders (members of the ADL), after being questioned about the importance of *agdal*, stated the following:

"If there is no agdal there will be no argan. Even if there is argan, you cannot harvest anything; it will all be eaten by the herds" ("new transhumant herds") (local leader 2, young adult, February 02, 2019). "A herder with 100 camel heads gives 100 thieves (laughs), 1 kilo per head is 100 kilos in total. 5 MAD per kilo, 100 kilos is 500 MAD per day, 50 euro, that doesn't even exist in France (laughs)" (local leader 1, adult, February 02, 2019).

BASIC INFRASTRUCTURES, POVERTY AND LAND TENURE

Apart from the *agdal* and natural resources impacted by the "new transhumant herds" phenomenon, livelihoods in the douar and its near future are impacted by the **lack of basic infrastructures** like a road and either a school or school transport.

Locals demand a paved road as the priority. They argue that it would be the first step for solving several of the main problems threatening the near future of the douar (like the risk of depopulation in one generation time). A paved route would foster the return of various of the families that have migrated because it would (i) allow the school transport to arrive and (ii) boost the local economic activity. Some relevant quotes in this regard are the following:

"I prefer them [my children] to stay here, but we need to have basic infrastructures; for example, the road is a big problem for us, as well as school transport, how can we stay in the village?" (young adult man, February 17, 2019).

"You do not have anything to consume here if you do not bring it back from outside. We need school, road and jobs" (adult woman, February 02, 2019). "We have traders who want to form cooperatives but because of the road we are stuck... if we have a road, we will bring partners, associates, everyone will work." (local leader 1, February 02, 2019).

"People here are leaving for their children's education, ... they have no other solutions" (young adult man, February 17, 2019). "They leave their houses being destroyed to rent another smaller one somewhere else" (local leader 1, February 02, 2019). "We need school so that our children do not leave us" (elder woman, February 03, 2019). ... "especially school so that people return to the douar" (adult woman, February 10, 2019).

Regarding **poverty**, of the 10 families that still reside permanently in the village (out of the 25-30 in total), there are some situations of high vulnerability, specially concerning the elderly, as the following testimony shows:

"... but I am tired, I am a citizen, I need to go shopping, ... to go to men's houses..., but I do not even have food for one day. Why does the state ... gives nothing for an old man who has no children and no wife, he's 70-80 years old, and the state doesn't give him anything even 5MAD a day?!" (elder man over his 70s, February 17, 2019).

Another relevant concern is **land tenure**, at several levels; that is first, *vis-a-vis* forest administration; and second, *vis-à-vis* their own relatives and family members. This in a context where argan prices are higher than ever before, so interests of rights-holders increase accordingly, and tensions arise. While in the first case it is an issue of historical lack of trust in the authorities since they declared unilaterally forests as "State-owned"; the second case is an internal and recent source of conflict within families fuelled by several factors, like the lack of agreement among heirs regarding:

- repartition of inherited rights over resources or land tenure¹³⁴.
- distrust or fear towards the forests' administration.

¹³⁴ Last generation having grown up in the douar and knowing properly property limits are dying or are migrants and their descendants may not know them properly.

- refusal of some male heirs to accept women inherited rights and properties¹³⁵.

ARGAN SECTOR AND INTERMEDIARIES

In parallel, argan, perceived by rights-holders as the most important natural resource for the community and the only one able to generate enough income to fix population in the douar, is not a well-developed and structured sector in the area. This means that the revenues from the natural resource do not arrive to rights-holders and local most vulnerable populations under criteria of equity and justice. The ones fixing the daily market prices for different argan products (e.g. *tafiyacht*, *tiznin*¹³⁶, argan oil) are the intermediaries. Intermediaries take advantage of the socio-spatial and cultural configuration of the region¹³⁷ to set the rules and prices of the argan market.

“The intermediaries of the [argan] sector approach the rights-holders who are themselves in vulnerable socio-economic situations and make advances to them in dirhams based on engaging in a race towards the fruit ‘Afiyach’. In these conditions, people go out and do the ‘gaulage’¹³⁸ and it becomes a kind of theft”. ...“the beating will destroy the production of the current year and the following year’s production. At this level it is not only the nomadic herds but also the intermediaries, who are in turn pushed by the argan oil processing companies. This will surely have an impact on the agdal.” (FIFARGANE’s president, July 11, 2018).

Regarding women’s work and salaries, the ex-manager of the only Argan oil cooperative in Ait Ouadrim (closed in 2016) stated:

“Because here the men don’t let their women work elsewhere on farms¹³⁹ or anywhere else, so for them [Ait Ouadrim women], even if the price is miserable, but she stays in her house, she works in her home. The intermediaries are well aware of the situation, and for this reason they only pay this price” (interview, January 19, 2019).

The following quotes from community members illustrate the situation exposed above:

- *“It must be valued to sell it at good prices” (herder). “Elsewhere it is expensive, not like here; people lose [money]” (local leader 1). “Yes, yesterday tiznin cost nothing, ... the price dropped 170 MAD” (herder). “It is the intermediaries who agree to lower Souk prices” (local leader 1) (interview, February 03, 2019).*
- *“... I said, how many cooperatives in Agadir?!, where they bring the argan from?! ... that’s the problem ... they (external argan traders, intermediaries and entrepreneurs) come to take the argan from these ignorant people. These poor people who have understood nothing, so they are the victims of exploitation. The resource is in the rural area, but the profit is for those who live in the cities; normally it must be a source of development for the community, with which also the emigration of people can be reduced.” (Souss association, January 19, 2019).*

DEPOPULATION (RURAL EXODUS) AND LIVELIHOODS

Tamejloucht has been deeply affected by emigration in recent history. Its character of a very small douar with no paved road, no primary school and no groceries, cafés, or other economic activities

¹³⁵ Cultural and behavioural change in women (in this region), who start to claim for their rights and their inherited rights and properties.

¹³⁶ *Tafiyacht* (or *Afiyach*): argan fruit. Irguen: hard shell. Aglim, Alig: pulp. Tiznin: argan kernels or seeds. Tazgemmut (or Tazgmout): pressed dough (resulting from oil extraction).

¹³⁷ Socio-spatially, the north-western Anti-Atlas mountains region is composed by a highly dispersed and isolated population where it is not easy to establish either argan cooperatives or profitable points of sale. Culturally, it is not socially acceptable for women to work outside their homes. So, linking this factor with the isolation and dispersion ones, the intermediaries have a great advantage in the argan value chain within the region.

¹³⁸ Harvest by beating the tree.

¹³⁹ He referred to the plain of Chtouka Ait Baha where there are plenty of farms and greenhouses of intensive agriculture which contract labourers.

(except for argan and pastoralism), has aggravated the situation to a point where, at present, out of the 25-30 families in total, only 10 still reside permanently in the village (some of them because they cannot even afford to leave). This means a permanent population of 30-40 people.

To the question “People have left their douars?”, a local authority noted: “Yes, yes. The density [of population] is 17,000 inhabitants (caïdat Ait Ouadrim), 80% of them live elsewhere”. “[They do] not every weekend, they come during the Âid Lkbir (festival of sacrifice) because it is far away”. Are there other jobs here? (researcher). “For the moment no, we are looking for them, we need a project for the benefit of the people” (local authority, February 02, 2019).

In this sense, the tendency is the same in Tamejloucht as reported by ADL members when questioned about the youth in the douar:

“They [young people] leave, most are leaving” (local leader 1, February 02, 2019); “they leave, what are they going to do here?!, there are only shepherds here!. In addition, there are no activities, there are only shepherds in all of Ait Ouadrim” (local leader 2, February 02, 2019).

Where does the income of the douar or *Taqbilt* come from; what are the economic activities here? (researcher). “Here argan is the first one, ...if we talk about the caïdat Ait Ouadrim, then it is immigration, the income of immigrant’s children. In short, we can say 60 % is the Argan, 20% for the income of immigrants including pensioners, 15% or even 18% for the herders and 5% of Ait Ouadrim works for the farms (intensive greenhouse agriculture in Chtouka-Ait Baha plain)...even less than 5 (2%)” (local leader 1, February 02, 2019).

3.4. PERCEPTIONS OF FEASIBLE FUTURES

When questioned about the future of *agdal* in Tamejloucht (locally called *tafgourt*), the general perception, is that *agdal* equals argan and automatically their discourse is focused on their views of the future importance of argan, referring to the argan sector, its market value, and its future importance. When questioned about the future of Tamejloucht as a douar and a community, the discourse is slightly different and highlights the lack of basic infrastructures, but it ends up in the same point, that is, the importance of the argan.

Insisting on the issue of *agdal* (i.e. *tafgourt*), local leaders and some community members argue that without *agdal* there will be no argan and, since argan is the single most important resource in their area, there will be no future for Tamejloucht. What I interpreted clearly from the situation, despite no one said it out loud, is that families who are still permanent residents in the douar and community leaders are well aware nowadays of the risks of total depopulation of the douar in one generation time. In this context, community members are adopting different **adaptation strategies** to face change. This is, while some are just resisting (e.g. due to their high vulnerability), there are those who are implementing either individual and or collective actions to overcome the current challenges.

The three more common **individual strategies** are: (1) migration (to close douars and towns such as Sebt Ait Milk or Biougara; or to big cities as Casablanca, Dcheira, Agadir or Inezgane; migration materialised through searching for job, or through marriage), (2) multiple sources of income (e.g. informal commerce, pastoralism, argan, subsistence agriculture, other services, working as labourers in the sector of intensive agriculture or income from wealthier members of the big family), (3) strategies related to ensuring their land tenure and resource use rights (e.g. registering properties formally or contending for inheritances)

Collective actions include an active participation of some community members (as representatives of their douar) in every single field, activity or project that they consider may be beneficial to their douar. This means, from the participation in local and regional politics (rural commune and caïdat levels), to

the creation of the local ADL, the participation in regional associations (like the Souss Association for the Argan Forest, which gathers all the ADLs of the caïdat Ait Ouadrim), the collaboration with various entities in order to bring different development and revitalisation projects to the village, the presentation and reporting of formal complaints and legal denunciations concerning infringements of land and use rights, etc.

The mere acceptance of my research-stay with them is part of their **collective strategy to "put Tamejloucht on the map"**, to give visibility to their village and to promote dynamics that will move it away from total depopulation. For context, it is worth noting that I have been the first ever researcher or student in Tamejloucht, neither national, local nor international, including consultants or facilitators working for development NGOs that occasionally may deploy similar methods to those of social scientists. My research interest on local and customary governance from their (local community) own perspective was fully in line with their on-going strategy to articulate their future around an identity discourse that is focused on the relevance of *agdal* as a heritage and ancient know-how that can ensure protection against external threats if it is properly recognised (through positive law and State support mainly).

As relevant examples of this collective strategy to foster local revitalisation and livelihoods improvement, during the last years the local ADL has negotiated with three of the main public institutions regarding land, rural development and conservation; that is, the regional directorate of Agriculture (i.e. DPA, in 2008), the regional directorate of Water and Forests (i.e. DREF-SO, in 2006 and 2008/09) and the National Agency of Development of Argan and Oasis Zones (i.e. ANDZOA, 2018-2020).

Additional examples of outcomes from proactive efforts of the ADL in giving visibility to their douar and fostering collaborative alliances are first, their active participation on the last International Congress of the Arganeraie (5th CIA, 2019) being one of the congress field trips organised to visit Tamejloucht and show the project of arganiculture (DARED project) being implemented there with the active participation of the ADL and the ANDZOA. Second, the projected visit of the King of Morocco to the douar in 2019, on the occasion of the same DARED project. The King’s visit was delayed and finally cancelled; however it offers a good example of what can be achieved by a small rural village in the Anti-Atlas mountains with no more than ten families living there permanently, but with a strong commitment and leadership to revitalise their community, ensure livelihoods and defend their territory, identity and rights.

برنامج تنمية الأركان الفلاحي بالمناطق الهشة		
بدعم من الصندوق الأخضر للمناخ		
Maître d'ouvrage	Agence nationale pour le Développement des Zones Oasiennes et de l'Arganier (ANDZOA) الوكالة الوطنية لتنمية مناطق الواحات وشجر الأركان	
Nom du Projet	النقل غرس و صيانة الأركان الفلاحي على مساحة 267 هكتار بـ 267 مليون مائة Travaux de plantation et d'entretien arboricole de l'arganier sur 267 ha à Souss Massa	
N° Marché	01 / 2018 / ANDZOA	
Province	الجهة: آيت باها	
Commune/ Périmètre	الجماعة: العدار سیدی عبد الله البوشواری / تاملوچت	
Entreprise	SUPER FLOR SARL	
Délai d'exécution (en mois)	36	
	مدة التنفيذ بالأسبوع	

Figure 100: Arganiculture project (DARED) being implemented in Tamejloucht with the active participation of the ADL and the ANDZOA.

In general, **future scenarios in mind for Tamejloucht inhabitants involve:** (1) recognising the *agdal* by law, so that local and regional authorities can react effectively to the infringements and threats posed by the transhumant herds of camels and goats that exert an extreme negative pressure on the fragile ecosystem nowadays; (2) providing the douar with the basic infrastructures that are still lacking; in order of importance, these would be an paved road, school transport or a primary school and support for the setting up of an association or cooperative linked to the argan sector.

With regard to the first point, locals are aware of the present weakness of customary law and traditions, and of its limitations when it comes to threats (or it involves actors) from outside the tribal boundaries. Their discourse in this sense is clear, *agdal* must be regulated by positive law because customary law is no longer able to face current threats and challenges; and they need State support. The following statements support this first argument:

Is *agdal* important to you? “Yes, we got it effortlessly, it has been there since our ancestors, yes!” (local authority). “This is what we are looking for (that the *agdal* is important in the future); because it starts to break, we’re losing the *agdal*. We must help protect the *argan*.” (migrant, adult man, February 24, 2019).

“The future of the region depends on the *agdal*... it depends on it, yes! (local leader 1, February 02, 2019). “In this region there is only *argan*” (local woman, February 02, 2019).

“If the State, if Moroccan legislation applies this *agdal* in reality, yes (the *agdal* will have the same importance in the future). Because the region has changed, today there are intruders who do not know the importance of the *agdal*, they have not experienced it. They do not know the value of *argan*. So, if the State does not adopt a law to punish all offences concerning *argan*, it will disappear, and even the following generations will not recognise it.” (local authority, February 17, 2019). And does it still depend on it, even in the future? (researcher). “In the future uh I don't know what to tell you; because in the future the *agdal* must be a law and not just an oral heritage or a know-how or an *ôrf* (i.e. customary law). A law recognised law, especially since people no longer recognise the value of *ôrf*. Also, because the role of the *jmaâ* is diminishing and we have moved on to associations, to written laws; so *ôrf* must have a law as well to guarantee the continuity and economic value of the *agdal*.” (local authority, February 17, 2019).

“I want the *agdal* to be a law recognised by the State, because it is advantageous for the people; on the other hand, if the *agdal* is destroyed, it means that the village is destroyed too; the future of Tamejloucht as well as that of Ait Ouadrim will be ruined.” (local leader 1). “It will even limit emigration to the cities, the rural exodus (local leader 2). “...I said even those who have moved/migrated, they come to harvest the *argan* during the opening, they don't abandon it” (local woman) (collective interview, February 02, 2019).

In your opinion, will the *agdal* be important in the future as well? (researcher). “If they encourage us...”(herder). Whose encouragement? (researcher) “From the authorities, people are tired.” (herder). “He's right, people are tired, the population is tired” (local leader 1). “If there is State support to fight against them (i.e. “new transhumant herders”, *polisario*¹⁴⁰ according to him)...” (herder) (interview, February 03, 2019).

¹⁴⁰ Polisario is the acronym for “Frente Popular por la Liberación de Saguía el Hamra y Río de Oro”. The interviewee refers here to the “new transhumant herders” as people politically/economically driven by issues related to the Western Sahara and/or getting personal profit out of it.

4. THE GLOBAL-LOCAL INTERFACE

Research chapter 4 responds to the **specific objective 3**, which is to examine **the interface** between the Arganeraie Biosphere Reserve and the two local communities through the identification of the constraints and synergies of their own approaches to environmental governance.

The examination of the interface between the RBA and the local communities, which is the main contribution of this thesis, has required first, describing how environmental governance in the Arganeraie is understood at an institutional and biosphere reserve level and at a local community's level (customary and local governance). This has been addressed and analysed in-depth in chapters 1, 2 and 3 of the results' section.

Afterwards, this fourth chapter of results is structured in a first descriptive summary of some general contextual trends impacting the RBA-local communities' interface (subchapter 4.1) that helps to understand the general context in which the RBA, the local communities and the research itself are embedded. Next, subchapter 4.2 explores the perceived link between the RBA and local communities from both sides, which means to examine: first, how the RBA and related institutions manage the link with local communities (subsection 4.2.1), and second, which is the local communities' link with institutions (subsection 4.2.2); to better understand how these communities interact with the RBA and the national legislative framework and *vice versa*.

Then, subchapters 4.3, 4.4 and 4.5 present the results of three complementary analyses that will allow for the examination of the global-local interface, showing the interplay and potentialities for inclusive environmental governance in the study area. That is:

- A diagnosis of actors playing a role on the interface (subchapter 4.3). In the form of a comprehensive multiscale social actors' analysis (i.e. CLIP analysis).
- A diagnosis of factors and key aspects playing a role on the interface (subchapter 4.4). Identification of the key drivers, enablers of IEG and main factors that allow for connecting the two approaches to governance (RBA top-down vs *agdal*-type bottom-up).
- The identification of the constraints and synergies between environmental governance systems in the RBA and its local communities (subchapter 4.5).

The methods and data that have informed this fourth chapter, are detailed at the beginning of each subchapter and outlined in Figures 14 and 20 (see Fig. 14 for the "methodological design of the study and experimental set-up" and Fig. 20 for the "Specific Objectives versus Methods' Logic"). Additionally, Figure 101 offers a visual overview of the three complementary analyses presented in subchapters 4.3, 4.4 and 4.5.

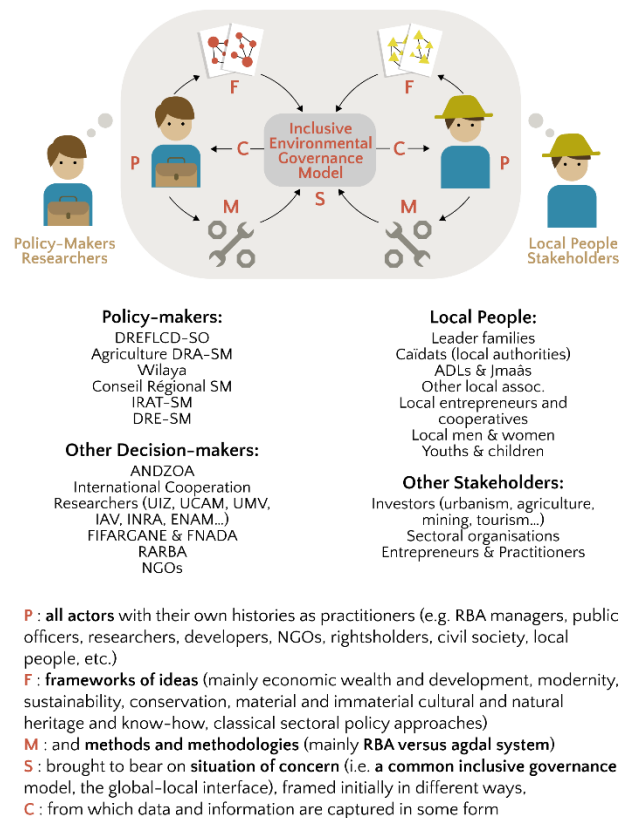


Figure 101: A Janus-like dynamic showing the interplay and potentialities for inclusive environmental governance present on the global-local interface between the RBA and its local communities (e.g. main actors, frameworks of ideas, methods and methodologies, drivers, factors, and keys). Adapted from Ison and Wallis (2017).

4.1. GENERAL CONTEXTUAL TRENDS IMPACTING THE RBA–LOCAL COMMUNITIES INTERFACE

This thesis has approached the RBA-local communities' interface basically as the analysis of the potential area of encounter or potential synergies between two different governance models (i.e. biosphere reserve and local communities and *agdals*). However, the actual reality on the ground is strongly influenced by other contextual logics whose detailed analysis is out of the scope of this research but which are worth mentioning. Drawing on field notes, grey literature and policy documents, reports and legal texts, we summarise in a descriptive way these general contextual trends impacting the global-local interface, at the level of the RBA and at the level of local communities.

4.1.1. AT THE LEVEL OF RBA

The RBA does not exist as a governance model as such. As of 2019, the RBA remains a conceptual framework, potentially feasible (according to the vast majority of interviewees) but theoretical at present. What is real, are the sectoral public policies, laws and institutions that converge in complementary and/or antagonistic ways on a given issue at a given time and at a given spatial scale. And here, the ideal analysis should distinguish not only the sectoral public model versus the theoretical-conceptual model of the biosphere reserve; but the fact that the sectoral public model in Morocco goes absolutely parallel to the political model, structures and hierarchies.

It is not possible to talk about governance without referring to two current processes of great importance in the country: "decentralisation" (political) and "deconcentration" (sectoral). "Deconcentration" means that each central administration in Rabat transfers responsibilities and powers to its regional level structures (i.e. at the level of regions and provinces; the province is the minimum level of action and scope). Examples would be the provincial directorates of agriculture or forestry. The exception is the Ministry of Internal Affairs (in charge of state security), whose antennae reach from the central level (Rabat, Ministry of Internal Affairs), to the regional (Wilayas), provincial, and even municipal or commune level (caïdats).

In parallel, the national "decentralisation" process, also called "advanced regionalisation", also proposes a process of transferring political powers and competencies from the central level (government and parliament) to the regional (regional councils), provincial (provincial councils) and municipal or communal (communal councils) levels. All these decentralised political bodies are called territorial collectivities and their members are the people elected through elections (élus).

If the RBA is to be effectively implemented on the territory and at a local level, it must necessarily be integrated at least in the communal action plans (PAC) and in the regional land management strategy (SRAT) (political level). However, the RBA is currently the responsibility of the forestry administration (also responsible for protected areas) and the next two key actors are Agriculture (another sectoral administration) and ANDZOA (public development agency under Agriculture).

Both processes of deconcentration and decentralisation appear to be two ongoing processes whose actual implementation looks complicated for a variety of reasons. These reasons include: (i) the lack of funding and resources of the different institutions involved at the different levels to fulfil their new attributions; (ii) the inadequate training of many of the people involved; (iii) internal inconsistencies and contradictions between different policies, plans and regulations; and, according to some interviewees, (iv) the lack of real will from the government and the different ministries at the central level to decentralise and deconcentrate their responsibilities and power in practice, both at political and sectoral level.

4.1.2. AT THE LEVEL OF LOCAL COMMUNITIES

With regard to local communities, as models of actual governance in the geographical area of the RBA, hybrid structures are predominant today. A dynamic strongly encouraged by the government since the early 2000s in the wake of the Law of Associations.

By hybrid structures I mean a tremendous diversity of formulations and realities, almost always at the douar level or grouping of douars (in some cases at the level of communes/municipalities or *caïdats*, when these coincide with the boundaries of the former tribe), in which the role of the ADLs (local development associations promoted by the 2002 law on associations and the 2005-2006 INDH rural electrification and sanitation programmes) and the role of the traditional *Jmaâs* are predominant. In some regions, the *Jmaâs* have disappeared, and the ADLs are the most dynamic at the local level (this would be the case in Tamejloucht); in other regions the situation is the opposite: there are still strong *Jmaâs* that occasionally rely on ADLs to access subsidies and then the association "is forgotten" once the funding has ended. On other occasions, there is a real commitment and collaboration in which both the *Jmaâ* and the ADL are active, strong and with legitimacy at the local level and collaborate permanently (they are not a hybrid governance structure but two different structures of local governance that are absolutely complementary).

PART 4. RESULTS

This case is close to that of Tisskji a few years ago. In these cases the (usually) young local leaders (ADLs) benefit from the wisdom, experience and support of the wise elders (*Jmaâ*) and these in turn benefit from the new skills and resources of the youth (grant writing, access to funding, new technologies and adaptation to "modernity"). In the case of Tisskji, this complementarity has recently evolved (since 2016) towards a type of informal assembly (described above) which is not at all representative of the rest of the territory but which could be an inspiring model in other areas.

The second model of local governance is the *agdal* management model. The *agdal* is a very important part of the traditional *Jmaâ*'s duties or functions, but not all of it. It is also sometimes linked to the ADLs (in my two case studies this is the case), but not always. And, moreover, because of its recent cycles of evolution in the arganeraie, it deserves a separate discussion which falls out of the scope of this thesis. About these cycles of recent evolution of *agdal* management in the arganeraie, very roughly speaking, it could be said that until the 2000s it was subject to more or less the same regressive and/or stabilisation dynamics as other *agdals* in the country (i.e. rural depopulation, abandonment of agriculture, impacts of modernisation, schooling, etc.), there are many regions and large areas of the arganeraie where *agdal* management is not practised today (for example in the Souss, Chtouka, Massa or Chiadma plains) due to large-scale modern and intensive agricultural or arboricultural projects, urbanisation processes, industrialisation, strong emigration or a simple weakening of the sense of collectivity and the common good.



Figure 102: Mixed assembly of ancient *Jmaâ* members and younger ADL members in Tisskji (left); Romera, 2018. Transhumant camel herds eating in the argan forest (right); Afker, 2007.

However, since the boom in the argan sector, *agdal* management has taken on a new meaning throughout the region and has re-emerged (is re-emerging) as a useful tool for claiming rights over a raw material (i.e. the argan fruit) that has been strongly revalued in recent years. The trend today following the resurgence of interest in the *agdal* system (and despite the fact that the discourse of all local interviewees is that the *agdal* has always existed and "been there") seems to be more the economic and individual/family interest in the high market value of the argan fruit (which is legitimate) than the collective/community interest in the long-term management of the multiple uses and natural resources existing on the same territory.

My two case studies provide examples of this. While in Tisskji the *agdal* remains strong (there are three argan oil cooperatives in the village) in other nearby douars where it has recently disappeared, it happens to coincide with a shift in their economic activities towards the service sector (tourism, commerce, construction, etc.). In Tamejloucht and throughout the Caïdat of Ait Ouadrim, *agdal* management is today being reclaimed by its inhabitants as an "identity" strategy to fight against the external threat of nomads from the south or "new transhumant herders" who, without being

recognised as rights-holders, invade the tribe's territory even when the *agdal* is closed with huge herds of camels. The fact is that behind the identity discourse and the claim of legitimate tribal use rights, there is also the factor of the recent high economic value of the argan fruit. Several interviewees stated that “*the nomads deliberately steal the argan from us through their camels to the point of earning wages of 50-60€ a day, which is a lot even for a European... while our women are paid no more than 3-4€ a day*”. “*As camels eat more kilos of fruit than goats, they are ‘better thieves’, and the bigger the herds, the more fruit they steal per day*”.

Finally, regarding *agdal* management, there is the discourse, mostly from scientists and local development agents ("developers"), which defends the traditional management mode for its multiple and evident advantages as a local model of sustainable management of natural resources. This discourse (as well as the deconcentration and decentralisation discourse I mentioned earlier) is very active in the arganeraie region today. The problem is that, as with the discourse around the RBA, there is absolutely no joint, shared idea or conception of what the *agdal* is nowadays (in the current social, economic and cultural context), why and for what purpose we want to rehabilitate it (who are “we”), and for whose benefit (and who decides it).

There is a predominance of the romantic discourse that presents the *agdal* as it was in the 1970s-80s as a solution to be implemented. The fact is that this vision, defended by intellectuals, researchers and developers, is intended to be implemented by the local populations but in the current context, which is very different from that of a few decades ago, and without considering the profound sociological, economic and cultural changes of the rural world as a whole in today's arganeraie (new aspirations such as sending children to study in the city or abroad, individualism, urban mentalities managing the rural world of the anti-atlas, globalisation, new technologies, etc.). Furthermore, without a sufficiently inclusive process of dialogue, at the risk of turning the proposal for the rehabilitation of the *arganeraie’s agdal* into yet another top-down process (it is not sufficiently inclusive because the rehabilitation of the *arganeraie’s agdal* is being discussed in forums at regional level, not even at provincial or municipal levels, and among a group of people that in the best of cases includes no more than 30 local representatives and not the 3 million inhabitants affected).

To summarise, at the local level and at present there are the *élus* or local politicians (largely inactive and disengaged from environmental issues), the ADLs, the *Jmaâs* and *agdal* management system, plus the hybrid formulas resulting from all this.

4.1.3. SWOT ANALYSIS OF THE AGDAL MANAGEMENT SYSTEM WITHIN THE ARGANERAIE

The SWOT analysis of the *agdal* management system in the context of the Arganeraie region summarises the main key elements stemmed from interviews to institutional RBA stakeholders and the *Thematic Workshop AGDAL 2018* in Agadir (see Table 28 below).

STRENGTHS	<ul style="list-style-type: none"> - Strong sense of belonging of local population. - <i>Agdal</i> presents a socio-cultural identity of the territory. - Customary management and governance model. - Form of local governance and management. - Local traditional and ecological knowledge and resilience. - Economic lever. Argan forest as a source of income. - Conservation of natural resources. - Intergenerational knowledge transmission.
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	<ul style="list-style-type: none"> - Capacity-building, awareness-raising and support for stakeholders, including elected officials and decision-makers.
WEAKNESSES	<ul style="list-style-type: none"> - Exodus to the cities and high depopulation in large rural areas within the RBA (e.g. Anti-Atlas). - Lack of basic services and infrastructures in many small rural villages (e.g. school/school transport, paved roads). - Lack of employment, services and other economic activities (apart from pastoralism and subsistence agriculture) in many rural areas. - Urbanisation. - Overgrazing and overexploitation. - Lack of social parity and social vulnerability. - Beating and pressure on the tree, and collection of argan fruit with inappropriate techniques and methods. - Socio-economic mutation.
OPPORTUNITIES	<ul style="list-style-type: none"> - Development projects and investments in cooperation with regional and national institutions. - Valorisation of local products or rural tourism, among others. - Inter-generational transmission of knowledge which is in decline. - The creation of the national argan centre (CNA). - International Cooperation. - ICCA. - UNDP's "RedPlus" (reforestation and conservation of plant cover finances climate). - PES (i.e. payments for ecosystem services). - Growing demand for argan product derivatives. - Sharing knowledge. - Foster the <i>agdal</i> towards becoming a matter of territorial governance and submit it to international bodies for possible recognition or labelling.
THREATS	<ul style="list-style-type: none"> - Drought and climate change. - The problems of the "new transhumant herds" phenomenon during the last 7 years (Arab herds of camels and goats). - River¹⁴¹ floods that uproot argan trees. - Fear of losing value and interest in argan as a product.

Table 28: SWOT analysis of the *agdal* management system.

4.2. RBA - LOCAL COMMUNITIES: ANALYSING THE INTERFACE THROUGH PERCEPTIONS

As noted before, Chapter 4 of the Results focuses on "the Global-Local Interface" between the RBA and the two local communities considered, looking at the actual and potential links existent between both approaches to environmental governance. However, despite its relevance, these kind of simultaneous top-down/bottom-up analysis are hardly ever conducted in the fields of environmental conservation and governance. Thus, I claim that to explore the perceived links between the RBA and the two local communities in a bidirectional way is not only a key step to respond to the specific objective 3, but also essential to envision an inclusive environmental governance model in the RBA.

¹⁴¹ Locally called "ighzer" in the area, meaning small stationary mountain rivers typical in semiarid regions.

Therefore, this section addresses the analysis of the interface through perceptions in two stages. First, we analyse perceptions of the RBA ‘extended peer community’ of decision-makers regarding (i) the existence or not of an actual link with local communities within the RBA (i.e. state of the art of the RBA-Local Communities interface), and (ii) the synergies and constraints regarding the current and potential links of the RBA and its related institutions with the local communities. Second, we analyse perceptions of the two local communities studied regarding the two same issues above mentioned for the RBA (i.e. “i” and “ii”). Data were obtained from the specific code and subcodes assigned during the joint content analysis of all sources of data at the RBA and local levels. However, the most relevant source of data were the specific questions included in the in-depth semi-structured interview guides (Table 29) and, occasionally, the Expert Focus Group of 2019, the Thematic Workshop AGDAL 2018 in Agadir and the Round Table about *agdals* in the RBA of 2017 during the CIA.

We present below the results of the bidirectional (i.e. top-down and bottom-up) multi-actor analysis of how the RBA global-local interface is perceived at present and how it could be reinforced. The analysis of perceptions is presented in the form of some of the most relevant quotes and discourses at the RBA level (subsection 4.2.1) and local level (subsection 4.2.2), indicating the actor’s category (e.g. researchers, consultants, civil servants, social actors, NGO staff, local authorities, local leaders, representatives from local economic sectors, other local actors). Results set the basic interface elements to be further studied.

Link RBA – Local Communities	Example questions
RBA level participants’ perceptions	QA1-Are the local communities involved in the RBA as proactive, conscious, and direct actors? QA2-In your opinion, are there relationships between the RBA and local communities, APAC or <i>agdals</i> ? Does this relationship exist? QA3-If no, would it be interesting to establish them? QA4-How can this relationship (between the RBA and local communities) be established or reinforced? QA5-Does the RBA have impacts (as measurable influences) on local communities? Positive or Negative?
Local level participants’ perceptions	QL1-Do you know the Arganeraie Biosphere Reserve (of the Argan forest)? Have you heard of it? What have you heard about it? QL2-Is there a relationship between the RBA and the <i>agdal</i> ? If YES, which one? QL3-Do you think the RBA affects or may affect your work in some way? If NO, why?; If YES, how? (Real influence) QL4-Do you believe that the RBA affects or may affect your Community in some way? If NO, why?; If YES, how? (opportunities, benefits, problems, risks, ...)

Table 29: Questions discussed during the in-depth interviews addressed to RBA institutional actors and local actors regarding the present existent and desirable link between the RBA and its local communities.

4.2.1.RBA LEVEL PERCEPTIONS

The analysis of individual and collective perceptions of the RBA main institutional stakeholders on how the RBA and related institutions interact with local populations/communities and how these institutional actors visualize the link between the RBA and its local communities (including the role of *agdals*), allow a better understanding of their mindsets, worldviews and discourses.

As previously mentioned, the “main institutional stakeholders” are those who have a direct link with the RBA (see subsection “1.1.1. Stakeholder identification and mapping” of the Results Chapter 1 for

more detailed description), including all those who belong to an organisation of a level higher than the village/douar (e.g. State administrations, public agencies, universities and research centres, NGOs, civil society organisations, political actors, etc.).

Following the joint coding of field data and subsequent qualitative content analysis, the identification of the most relevant perceptions of the actual link between the RBA and its local communities and the potential or desired one (i.e. visions of the potential global-local interface), reveals a variety of often divergent perceptions and visions. I present below the seven most relevant issues arisen from the RBA-level interface discourses; exemplified through some representative quotes. This level of analysis has arisen repeatedly topics of (1) the policy-research interface, (2) the local-research interface, and/or (3) the local-policy interface, that are somehow inter-linked around the issue of the theory-practice gap (Fig. 103).

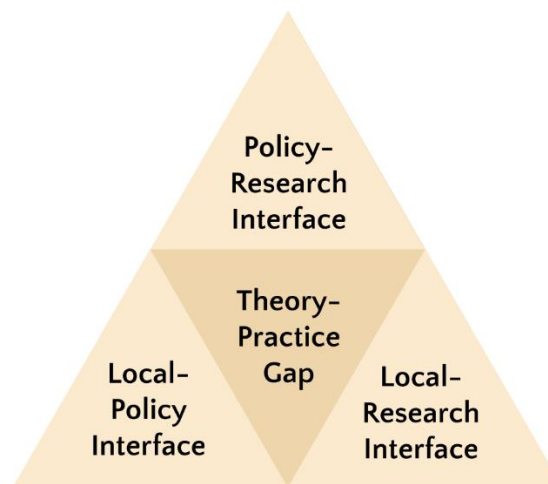


Figure 103: A Biosphere Reserve theory-practice gap chart showing the different interfaces to be considered in the global-local interface of a BR.

1) COHERENCE: THE THEORY-PRACTICE GAP

Three main topics have emerged around the theory-practice gap in the institutional and RBA level discourses and perceptions. All of them refer to the **non-alignment or lack of coherence** (i.e. consistency) in management and policy, law or discourses in relation to practice. The three topics are the following:

First, as a comparison of **two sustainable management models, the theoretical large-scale model versus the empirical small-scale model**. That is, the BR mainly conceptual and the ICCAs (i.e. APAC in French) fundamentally empirical. Someone from the RBA managing administration pointed out that local communities or ICCAs could be considered as “small BRs” regarding environmental governance and sustainability. The main difference is that while the RBA is focused on the BR concept and theoretical concerns or parameters, ICCAs/*agdals* are focused on the practice and empirical experience stemmed from daily life.

“APAC is a small RB. RB is a large model where the concept and the theory are the most important. It's a bigger model of APAC but the concept is there. APAC, no, it's not the concept, but it's the action of the concept that is there... and it is feasible to integrate them” (DREFLCD-SO, April 15, 2019).

Second, the **policy-practice gap of the legal and normative reality in Morocco**. Several interviewees pointed out, as a big constraint that nobody wants to address, the fact that there are plenty of policies,

norms and laws beautifully written which are not properly implemented, due to different issues like lack of funding, resources or political will. This issue is supported mostly by local researchers and professionals, but also by public officers from diverse administrations.

Third, the national (top-down) debate around the issue of **revitalising the *agdals***. In this respect, the theory-practice gap is evident in the national and regional debates where local population is absent and/or rights-holders are not present or poorly represented. Thus, the ones taking the lead and making proposals about *agdals* are developers, researchers and/or public officers. In these cases, where rights-holders are not sufficiently present, and in absence of recent sociological studies, it is common to overlook the deeper socio-cultural and socio-economic mutations of the rural territories of the RBA. The risk is to try to revitalise a specific idealised vision of *agdal* which is not adapted nor feasible in the current context (e.g. an idealistic version of how *agdals* were managed in the past, not compatible with the social mutations and the globalization processes which are today in place in the Arganeraie).

The initial logic regarding the RBA-LC interface must consider at least the following issues: (i) RBA is independent of [local] community management, [which] show[s] the relevance of both management modes; (ii) External influences in terms of management (associations, cooperatives, ...); (iii) Argan sector; (iv) State of the agdal practice, community exists but in another anthropo-ecosystem; and (v) Socio-spatial changes in relation to the RBA (land-planning researcher, February 18, 2019).

However, despite the common idealised vision of the *agdal* model, the **relevance of the customary norms** and methods of natural resource management, *“of proven validity and resilience”* in the past is a widely acknowledged issue, particularly by rights-holders representatives, social actors, researchers and developers:

“The way of exploiting the [natural] resource in the Arganeraie until now is done in a sustainable way, because we respect the natural cycle of the Arganeraie. Among the locals there are traditional rules, for example the agdal which organises the grazing lands. But when external threats come to destroy this sustainable management system that is already in place, people get together to defend, not only the resource, but also its management and exploitation methods ...to conserve the resource that they manage and that is there thanks to their sustainable management system. It is a management method that has proven effective for centuries, otherwise we would not be talking about the argan forest today” (Ex-parliamentarian, March 25, 2019).

2) INCLUSIVENESS, DIALOGUE, FAIRNESS AND TRUST

RBA-level interface discourses have uncovered different constraints concerning the interactions among the various categories of actors and decision-makers. I refer to these interactions as the different **policy-research-local interfaces** (charted in Figure 103). Common constraints hindering the policy-research-local interfaces are the unbalanced relationships among the different categories of actors, low inclusiveness of certain views or actors, lack of effective communication or dialogue, insufficient dynamics and mechanisms of collaboration, lack of trust or ethical issues. All of these, in turn, affect the theory-practice gap above-mentioned.

The local-research-policy interface. One of the weaknesses of the local-research interface is the strong and unbalanced communication gap at the science-locals or locals-policy interface. Moroccan *agdals* represent to many (e.g. decision-makers, researchers, developers) a logical and coherent solution for long-term community development policies at different levels. Experts in the field note that the challenge in Morocco so far is that *“we have lost traditional institutions and laws and have not yet created others adapted to the real situation”*. However, findings from this thesis demonstrate that, local people in the arganeraie nowadays consider that they have other alternatives which their parents and grandparents did not have; and therefore their criteria to (i) decide if customary

institutions and norms deserve to be maintained, and (ii) how and why to do it, has changed; also who must decide and lead the process must be reconsidered. Failure to acknowledge prior remarks will hinder the adequate understanding of current dynamics of change and evolution of local and customary governance regimes in the Arganeraie. However, many scientists, developers and consultants still undervalue or ignore that locals no longer fully depend on *agdals* and that some of them consider that they have better alternatives.

It is imperative to reconsider the definition and the current local visions of *agdal*, especially that of *agdals* in the Arganeraie which are those less studied and those facing the deepest and faster changes due to the rapid development of the argan sector as an international market in the last three decades. However, dialogue and decision-making processes to date rarely integrate local populations in a fair and balanced way. Difficulties in the interaction between locals and researchers in an equal arena need to be overcome (e.g. respect, hierarchies, inclusivity, fairness); and this remains a major challenge worldwide, including local communities in the Arganeraie:

“Have the researchers and the local population been put on the same table? ...” “Secondly, the population, through my experience, quite recent, maybe not more than a week, is that the population agrees when the researcher takes into consideration their [the population's] interest in his work [research], and the interest of the population, should be measurable by the population, not by the researchers. “I don't need someone who gives me questions, I answer and then he talks, I need someone when he comes, before he leaves, he leaves at least a hole or a wall built”, that is the population” (DREFLCD-SO, March 05, 2019).

In addition, issues of trust, interests and effective collaboration processes hinder to date the **policy-research interface**, also at the institutional level. Namely, between public administrations and institutions and public universities and research centres. These blockages at the policy-research interface are also connected to dynamics related to capitalism (e.g. privatisation, priority of time and money over quality) and have, in turn, important effects over the lack of long-term research strategies properly adapted to the needs of the BR:

“There is also a problem of trust between institutions and research. There is no link until now. Institutions, administrations work alone, they propose what they want, they carry out what they want. Universities work alone, produce knowledge, research in the form of articles and reports, but so far I have not seen a call for example from an administration /institution /ministry that calls on universities to carry out a feasibility study, an activity report or a territorial diagnosis...” ... “They [universities] have the capacity and the knowledge to do it, but the administrations have the budgetary logic and the logic of time. The administration prefers to call in a consultancy firm and say ‘we need to carry out a feasibility study within a year, here's the budget, here's the time and what needs to be done, we need to do it quickly’. On the other hand, for the university, it takes time...” “Here we come back...when a consultancy firm wins a competition, it comes back to the universities and the students to do the surveys, to the teachers to do the analysis...” (sociology researcher, April 03, 2019).

3) LEGAL FRAMEWORK, POLICY AND POLITICS

Two relevant issues emerged from the analysis of perceptions about the interface at the institutional and RBA level are the paramount importance of **tackling the legal framework and the institutionalisation of the RBA**, its governing body and the *agdal* system within the Arganeraie.

Numerous key stakeholders and participants call for a legal framework in Morocco that explicitly integrates the BR and *agdal* concepts and principles (i.e. customary *agdal* and international BR governance models). In turn, while some participants call only for the legal integration of the BR, others call just for the legal integration (i.e. institutionalisation) of the *agdal* system; and just a few ask for the joint legal integration of BR and customary governance and *agdal* systems. Some relevant quotes supporting these claims are presented below:

“The RBA does not have a known and recognised holder. We need an answer to a fundamental question about where we want to go collectively” (DREFLCD-SO, March 04, 2019).

*“There is a need to redefine the *agdal* concept and recognise local communities at the legal level and give them space to express themselves. To create or strengthen the link between local communities and the RBA, there are 4 key actors: first, the RBA always with the DREFLCD-SO; second, ANDZOA through the rights-holders (FIFARGANE); and third, Agriculture” (consultant RBA, February 22, 2019).*

*“It [the link RBA-Local Communities] is about relationships of interest. There is a need for a coordinating institution at regional level”. “The impact of the RBA over the local communities is positive yes, but potential, we do not exploit the RBA label”. Within the interface, “we have two logics: ancestral (*agdal*) and international (RBA) ...so we need researchers...” (to analyse, translate and suggest alternatives) (geography researcher, March 18, 2019).*

“On the practical level there are no barriers [that prevent the RBA-Local Communities link], ...on the procedural/institutional level, [the barrier is] the absence of an institution that manages the RBA” (land-planning researcher, February 18, 2019).

*“The *agdal* has extraordinary role [in the RBA], it should play a role. RBA and *agdal* have strong cultural components [shared]. [The solution is] always institutionalise. A law [only for that] no...but consider the *agdal* in the laws. This is feasible within the legal framework of Morocco. Political will and leadership are needed.” (geography researcher, March 14, 2019).*

There is a third issue arisen in addition to adapt the legal framework to the BR concept and MAB provision and to properly institutionalise the RBA and the *agdal* system. This third issue relates to politics, political commitment, social-populations commitment and the political representativity.

There is a double constraint concerning **politics and political representativeness**, despite existing formal mechanisms. On the one hand, there is an impressive lack of political commitment regarding the RBA, but also concerning *agdals* to a minor extent, from local to national levels. This lack of political commitment blocks the formal mechanisms in place of political representativeness within the RBA, except for the Tiznit province and other few spots over the RBA. On the other hand, there is also a **lack of social commitment** in the sense that populations do not mobilise themselves nor their politicians if they do not perceive a major threat already menacing them (which in social-environmental issues tend to be too late to react). Therefore, even if the political commitment was there, people who do not perceive a big threat are not going to use the mechanisms of political representativity in place.

4) POLITICAL AND INSTITUTIONAL COMMITMENT, RESOLVE AND LEADERSHIP

The **political and institutional commitment, resolve and leadership** at all the different levels and type of actors are acknowledged as key elements to reinforce the current link between the RBA and the local communities and to build a truly inclusive strong global-local interface. They are acknowledged by multiple actors and decision-makers as the two main elements or underlying factors fostering the policy-practice gap at the RBA and at the local communities and *agdal* levels and hindering the interface between the two. The political and institutional lack of will and leadership are also linked to issues of inclusiveness, fairness, ethics and downwards accountability of public institutions. The following quotes offer an overview of different perspectives on the issue:

“Key elements, the legal framework” but “political will and leadership are needed” (necessary conditions). Who should do it? “Parallelism with the IGP and the RBA (Minister of Agriculture had the leadership in a short period of time)” (land-planning researcher, February 18, 2019).

Answering Question¹⁴² in Table 28: *“In theory or in practice? In practice, not really. In theory it is clear [there is a link RBA-Local Communities], the whole concept is around it, the human being is at the heart of the concept. But that is what we were just saying, for it to work, the communities really need to have their say”. “I think that today [to foster the RBA-Local Communities link] this is the work of ANDZOA, the work of ANDZOA is to revitalise the concept” (consultant RBA, February 22, 2019).*

¹⁴² Is there a link between the RBA and the local communities?

Answering Question 4¹⁴³ in Table 28: *“The link is theoretically there. Now, to better understand what is happening in the field, I think we **need to go and see three types of actors**. Firstly, the foresters, and see how they perceive the impact of the RBA on the communities and how the communities react to it. Secondly, I would say the ANDZOA, because they are currently carrying out a census of the beneficiaries, etc., and there they are in close contact with the communities, with all the problems with the community. And then thirdly, it would be agriculture. And yes, I forgot, an actor that should be seen at the same time as the foresters, namely, in the same rank, is RARBA, because they have really experienced the problems in the field, and they can tell you about it, eh...since the beginning”* (consultant RBA, February 22, 2019).

5) SHARED UNDERSTANDING: THE NOTION OF LOCAL SCALE

Different notions of what is considered local scale exist. This happens even within the same administration or organisation. Once again this fact highlights the risk of considering certain organisations or institutions as a single actor rather than as dynamic entities resulting from the spatio-temporal interrelationships of the people who constitute them, rarely homogeneous, never static, always diverse, and often contradictory. Consequently, while for some respondents the notion of local scale relates to any level lower than the biosphere reserve itself (e.g. province, commune, village or grouping of any of the former); for others 'local' means the lowest administrative territorial unit officially recognised by the state (i.e. the commune or municipality); and for others 'local' equate to the basic socio-cultural and economic territorial unit in which the population self-organises and carries out its daily activities both in the present and in the past (i.e. the douar or village).

As can be imagined, such divergent conceptions of what is considered "local" lead to very different reasoning, analyses, policies, and proposals for action. For example, while for some representatives of the central administration (in Rabat) the existence of the FNADUA (Fédération National des Ayants Droits de l'Arganeraie), composed of 2-3 provincial representatives at the regional level of the RBA and 2 representatives per commune at the provincial level, is already a clear sign of the strong and active link between the RBA and the local population (Quote 1); other interviewees focus on the question of the **actual representativeness of political representatives**, of organisations such as FNADUA or RARBA and point out that the RBA population includes 3 million people (as of 2014) who, in rural areas, carry out their daily activities mainly at the douar level (Quote 2). Which is exactly what the data from the two local communities studied show (as indicated in subsection 4.2.2).

Quote 1: Local scale equates approximately to FNADUA and RARBA representatives, which means province level mainly.

Answering Question 1¹⁴⁴ in Table 28: *“Yes, they are. They are very involved. They have organised themselves to...they are in their union of the users of the arganeraie. A syndicate that is local and is organised at the regional level and which is today an interlocutor with the management body of the RBA with the DREF. So, they are already in the process of communication to decide where we can regenerate the argan forest, where we can [economically] value it; ... so it is ongoing” ... “Well, I find the RARBA too. Even if it is in second place, it is also important. It is also a voice of the inhabitants of the RBA”* (HCEFLCD, February 22, 2019).

And is that enough to build this strong link? *“It is never enough; you can never say it's enough. We can always improve the way we do things, in my opinion. But there is already a good base. The fact that we have users who are structured at local, provincial and regional level is already a good base. Now it really depends on the people and the working relationships. And above all, institutionalising; today is not institutionalised, it is a communication that is done either on the initiative of one or other”* (HCEFLCD, February 22, 2019).

Quote 2: Local scale equates to local populations or communities' representatives, which means douar level mainly.

“It [the link] exists but informally...Morocco has experienced the break between traditional and modern management ... the status of these local user populations must be recognised... ...in my opinion there is no participatory approach today,

¹⁴³ How can this link be established or reinforced?

¹⁴⁴ Q1: Are the local communities involved in the RBA a proactive, conscious, and direct actor?

it is the national who decides, it is the regional who executes and it is the local who is subject to the consequences...” (sociology researcher, April 03, 2019).

“Agreement between several actors to carry out a project... But at the local level, these are small projects that are not of much interest to the local populations.... and I doubt that this will help to conserve this BR, ...we see the extension of farms on the argan tree, we see the extension of neighbourhoods...even if we name a Reserve, but we do not intervene in it...” (sociology researcher, April 03, 2019).

6) SHARED SPACE, INCLUSIVENESS, TRANSPARENCY and TRUST

A shared sphere of mutual recognition among stakeholders and actors involved is a must on the global-local interface. A shared sphere including shared language and “languages”, interests, concerns and efforts. For many, to say that there is a clear and established link between the RBA and the local communities or that local communities are involved in the RBA is much to say. These respondents note that the link is feasible and would be necessary and positive, but it is still potential (not a reality). At present, the global-local interface is perceived more as a matter of “relationships of interest” than a real long-term established and fluent (non-hierarchical) collaboration.

In addition, the question of “language” (e.g. Tashelhit, Arabic, French) and “languages” or language registers (e.g. colloquial, scientific, technical, traditional) has also been raised in the discourses by pointing out that there exist two different logics, the ancestral one (i.e. *agdal* and customary institutions) and the international one (i.e. UNESCO biosphere reserve); so, to properly connect them, there is a need for researchers able to decode and translate them both.

The following quotes support some of the former issues of inclusiveness of local populations, downwards accountability, the need for a share sphere and for trust-building between local populations and institutions:

“First of all, (local) associations must play their role” (PNUD, February 22, 2019).

“We need to seek trust with people and raise awareness. Speaking their language is key. It is also important to hold workshops with the population and implement income-generating activities. Agreement (with people) is the key. On the research side, the most important is social research (a constraint) and biological heritage” (DPEFLCD, March 07, 2019).

Answering Question 1 in Table 28: *“They [local communities] have their place, they have plenty of room (i.e. they have rights). Local communities are involved in the RBA only through the associations. And not on the environmental side, it's more the social and economic side”. “The link [RBA-Local Communities] can only be made through associations and through the social-economic. Today this is the work of ANDZOA”* (consultant RBA, February 22, 2019).

7) AWARENESS, COMMUNICATION, SUPPORT and TRANSPARENCY

The last relevant issue highlighted from the RBA-level interface discourses is that **competence, awareness, and information sharing** are key elements of the RBA-local communities’ interface. Thus, there is a need for training not only of the local population to be able to actively participate in decision-making, but also training of public officers and other public actors so that they are able to assume their responsibilities properly. Barriers to information sharing must be addressed and mechanisms for effective community involvement must be implemented, to be able to achieve the necessary shared sphere of understanding, interests and agreement that the global-local interface requires.

Also, awareness and communication concerning the RBA must be enhanced widely, so a large share of the population, stakeholders and decision-makers properly understand the concept and implications of the BR over the territory and are able to develop a sense of ownership. In this line, someone also pointed out towards the key role of mediators, facilitators, advisors, politicians and the

media in strengthening the global-local interface and fostering fluid processes of dialogue, communication and agreement. The following quotes offer an overview of perceptions concerning the former issues:

“The link between civil society and international NGOs and between civil society and the state must be strengthened. But there is a problem with the legitimacy of civil society; to face this, it is necessary to develop local competences, scientific and technical support, to share information among all and to build trust” (RARBA, March 12, 2019).

“Local people are detached from the term (BR) but not from the action for the RBA. Tools for community involvement need to be put in place; a good example is the 2008-2009 PANLCD project (scheme to combat desertification). The challenges are to achieve good communication, to reach agreement first, to reunite the definitions of each one and the interests of everyone” (GIZ, February 28, 2019).

“There is a need to raise awareness; build the capacity of public actors and civil society representatives; create opportunities for people to be involved; promote knowledge of RBA so that the concept is appropriated” (ANDZOA, February 28, 2019).

“To strengthen the link, facilitators are essential: on the research side, NGOs (international cooperation organisations and RARBA, an excellent mediator), elected councillors (this is their task). It is important to underline the crucial role of advisors as a link between the local and the national or regional level. And do not forget the role of the media. There is not enough communication” (consultant RBA, February 22, 2019).

4.2.2. LOCAL LEVEL PERCEPTIONS

As in the previous case, the analysis of individual and collective perceptions of how local communities interact with the RBA main institutional stakeholders, contribute to better understand how these communities interact with the RBA, its related institutions, and the national legislative framework. The analysis and understanding of the main local worldviews, concerns, and discourses (in the two case-study local communities) constitutes the second essential element to make the diagnosis of factors and keys “playing a role on the interface”.

Before going into detail, it is relevant to mention first, that there is an important difference between the two case-study local communities (i.e. relevant inter-community differences), which highlights (i) the special attention that should be paid by policy-makers, researchers and developers to **high local diversity** (of context, mindsets and perceptions) within the RBA before adopting any decision or implementing any action; and (ii) the paramount relevance of integrating local communities in decision-making processes (through dialogue, consultation, collaboration, co-management, etc.). And second, there are also relevant differences among the different members of each case-study local community (i.e. relevant intra-community differences).

Regardless of inter-community differences, in both local communities studied, it can be observed a significant difference between local leaders and some other community members. Namely, community leaders tend to be more proactive, open-minded and predisposed to dialogue, to trust actors outside the community (including State institutions), to empathise with them, to try and understand them, etc. In contrast, there are other individuals in the communities much more critical and intransigent, much less inclined to listen to or receive information that contradicts their previous beliefs, convictions, etc.

However, participant observation and other field data point out that the best informed (information quality, updated information, primary data not over-interpreted), more experienced and open to dialogue people are, the less critical or uncompromising they become and the easier to build trust and to become local allies of institutions. This showcases the local intelligence, expertise and humility of community leaders and many other community members, which is key in negotiation and agreement

processes, participation, dialogue, co-management initiatives, inclusive governance models, etc. And which is fully compatible with local community revindications of their own individual and collective interests.

The most relevant result derived from the local-level individual and collective interviews and workshops (in both case-study local communities) is that **locals do not know what the RBA is or means** (none among the 43 locals interviewed, except for one community leader who despite not knowing the RBA properly, the name was familiar to him¹⁴⁵). They have never listened about the RBA, so they are not aware at all that they live in a BR, what does it mean or what are the implications to them.

“We do not know anything about it (the RBA), we have never heard of it. We need to know first what a BR is to know how to answer” (local collective interview, September 29, 2018).

At the same time, they are aware that they live in the Arganeraie and that the argan forest and the argan have gained international and national relevance in the last decades. In addition, a few people had heard about the RARBA (i.e. Réseau des Associations de la Réserve de Biosphère de l’Arganeraie, a relatively well-known social actor among the local communities of the RBA).

A consequence of the local lack of information and understanding is that there is a high level of confusion between the argan sector, the argan forest, the RBA and the RARBA, and so the role of the foresters (locally referred to as *“Boughaba”* or *“les eaux et forêts”*) and the State or central Government (locally referred to as *“Makhzen”*)¹⁴⁶.

Considering the lack of local feedback about the RBA itself, I have focused the analysis on the **local perceptions and relationships of local peoples with the RBA-related institutions** (mainly the HCEFLCD, Agriculture, ANDZOA and the government itself). I present below six of the most relevant issues arisen from the local-level interface discourses and perceptions; exemplified through some representative quotes.

1) CUSTOMARY LEGITIMACY and LEGAL FRAMEWORK

Legal recognition of the *agdal* system and customary norms. The need for legal recognition of *agdal* and customary norms, their integration into positive law by the State and State support are the most frequent demands at the local level. Especially in those local communities that are facing at present external threats and conflicts involving actors external to the community. Beyond the local community level, this demand is widely shared by the different provincial associations of rights-holders and the FNADUA, by some NGOs representatives, other practitioners and by numerous researchers of several disciplines. This issue was one of the two most relevant demands from locals to the State or public institutions in the second local community, Tamejloucht.

The following quotes from the second case-study local community give quite a good summary, from different local actors’ views, of what is going on in the areas close to the corridors in the Arganeraie where the *“new transhumant herds”* move through. That is, mainly foothills areas between the southern provinces (e.g. Sidi Ifni, Guelmim, etc.) and Essaouira on the north; areas plain enough for

¹⁴⁵ Because of previous development projects implemented in the douar where they had asked (with the support of development agencies) for international funding by justifying they are located within a BR.

¹⁴⁶ The *“Makhzen”* and *“Boughaba”* are pejorative terms commonly used by citizens in allusion to the authoritarian power exerted over local populations by the central government.

the camels to move and not occupied with agricultural infrastructures, fenced farms or buildings located in the plain areas like Chtouka, Souss or Massa:

“Yes, it [agdal] is 100% important; if it is not important to me, I will not make an association in 2015. All the associations are coming together to preserve the agdal” (local leader 1, January 27, 2019).

“The solution [to local conflicts] can come from the state, there must be a law that protects the argan so that everyone respects it; even if there is agdal, but the agdal is at the douar level for example”...“If you go to the Caïdat because of the nomads [“new transhumant herders”], it has nothing to do, because there is no law that obliges the sanction” (local leader 2). *“There is no law ”* (local leader 1). *“If there is a law, the Caïdat is obliged to implement it”* (local leader 2) (collective interview, February 02, 2019).

“We have created associations”. “The associations have made their efforts [to contribute to solutions]!” (local leader 2). *“But you [the society, the State] must support the agdal for it to be a law, I already told her [the researcher] that”* (local leader 1) (collective interview, February 02, 2019).

“At the moment agdal remains an Ôrf (i.e. customary law), and even if the State wants to ration it, it must be taken as it is [flexible, context-adapted, specifying sanctions, democratic, etc.]; the offences and... uh must remain, to preserve the argan tree as a patrimony”. “Agdal is important for the community” (local authority, February 17, 2019).

“If the State, if the Moroccan legislation applies this agdal in reality, yes [agdal will remain important in the future]; because the region has changed, today there are intruders [the “new transhumant herders”] who do not know the importance of the agdal, they have not experienced it. They don't know the value of argan [i.e. agdal¹⁴⁷]. So, if the State doesn't adopt a law to punish all offences concerning argan [i.e. agdal], it will disappear, and even the following generations won't recognise it” (local authority, February 17, 2019).

“We need a legal text [to solve local problems with the “new transhumant herders”]” (Leader1 TJ). *“A legal text induced from the Ôrf [i.e. customary law] is needed to sanction any infraction during the biological resting of the argan with the help of technicians in charge of monitoring and noting infractions”. “It is important to promulgate a law of the Moroccan legislature to punish the guilty”* (local authority, February 17, 2019).

2) LEGITIMACY, TRUST, MUTUAL RECOGNITION and COLLABORATION

There is a double perspective to be considered regarding issues of customary versus State legitimacy, local trust in institutions, mutual recognition of actors on both sides of the global-local interface and opportunities for collaboration between local communities and the RBA institutions. On the one hand, there is an **historical and generalised mistrust of local populations** in the Arganeraie towards public institutions and the State, particularly the forest administration. Mistrust due, ultimately, to the non-formal recognition (nor respect) of the customary legitimacy of local peoples over their ancestral territories by the Moroccan government. On the other hand, findings from this research show that there are **signs of an opposite and positive trend in the two local communities studied**. That is, there exist local communities and local community leaders at present in the Arganeraie that are willing to collaborate with State institutions, including the forest administration. There are also local discourses that recognise the positive expertise of foresters regarding forest conservation and its complementarity with local and customary conservation approaches. I summarise below both perspectives coexisting today in the area, which influence negatively and positively the global local interface, and note some supporting quotes.

Land tenure and mistrust in institutions. As it will be described in more detail in section 4.3.2 (when addressing relationships of conflict), in many local communities within the Arganeraie and beyond, a classical local-institutional relationship of mistrust and suspicion is still alive nowadays with deep consequences and impacts in several issues related to land, from land tenure rights to conservation and development initiatives and discourses. It is the one related to the appropriation by the State of

¹⁴⁷ In the region, for locals *agdal* and *argan* are synonyms.

all the Moroccan forests in 1954 (right before the independence in 1956), through the Forest Administration, the HCEFLCD. Due to the wide range of present implications of the aforementioned relationship of mistrust and suspicion towards public administrations, specifically to some of the RBA-related institutions, this issue has become relevant among the local-level interface discourses. The following quote exemplifies one of these present implications of the historical local mistrust in the forest administration:

“People have administrative certificates that show that the forestry department is not the owner and yet they don't trust and are against the plantation projects, you see!” (local authority, February 02, 2019)

Opportunities for collaboration and mutual recognition of actors in the global-local interface. As noted above, there exist local communities willing to collaborate with public administrations, institutions, international and national NGOs and universities in projects and initiatives perceived as positive to the territory by these local communities. An example from this research is the local perception of the RBA as an opportunity for local conservation once local representatives properly understand the concept and implications of the BR.

Although local people do not know what a Biosphere Reserve is, once they hear about the subject (some of them), they become curious and ask for further explanation (willing to learn and critical at the same time). In Tiskji, once community leaders (in a collective prospective interview) understood what a BR is about, they quickly appreciated the opportunities it could bring to their community and the complementarities with the *agdal*, their customary management model. This is a clear sign of the quick and significant effects that inclusiveness and horizontal processes of dialogue, exchange and information can bring to the global-local interface.

A second example of positive local recognition of institutional actors is that there are local leaders and community members who perceive the foresters as allies in the conservation of argan forest and as someone from whom to learn (technical expertise and accountability). They advocate for the integration of the forest public management strengths and the local customary forest management strengths. They do not hide nor underestimate the authoritarian style of the Forest administration in the past, but they also acknowledge the apparent change in the trend and the new opportunities for collaboration at present to foster the conservation of “their” forest. In short, these are local communities who still have a strong sense of collectivity and a strong link to their territory (i.e. what they consider their forest, independently it is public property, private, or community-owned). They are aware that collaborating with the Forest administration will increase and improve the long-term conservation and sustainable management initiatives being implemented in their territory (specially in a scenario of external threats that they know they may not be able to face alone), and that there is space for complementarity between public and customary management techniques and laws, namely *agdal*. Therefore, they choose to do their part and take their share of responsibility first, rather than focusing on criticising the other party for their lack of commitment.

“Reforestation with argan trees closed areas for 20 years. People can collect argan fruits but livestock cannot enter. (It is a process of) Cutting of old trees not giving fruits. The wood goes to charcoal and they (HCEFLCD) leave the trees 15 years to regenerate and grow up from the beginning. Forbidden to livestock. I think this technique from foresters is good and helps to protect the forest, (local) people did not know how to regenerate” (local authority, October 25, 2018).

3) ACCOUNTABILITY

With regard to accountability issues, local perceptions and discourses concern two levels; namely, institutional accountability at the different levels (from local authorities to regional and national

administrations) concerning local populations; and their own self-accountability at the local level (e.g. local associations or community members).

Institutional unaccountability concerning local communities' needs and environmental conservation. National and international institutions are perceived as unaccountable with respect to local communities, their development needs and local effective conservation. At the same time, especially in communities where they need help or support from the State to deal with major problems, and they do not receive it, the issues of unaccountability of public institutions emerge frequently. Different people express it differently, but the message is the same, namely "national and international institutions should be accountable enough regarding conservation before asking others to do so and before demanding respect and trust from citizens". While some people express this as a demand, others do it as a critique, others as a wish, a concern, etc. It happens the same when it comes to State support to livelihoods, local socio-economic development or public investments in basic infrastructures at the village-douar level.

Feelings of hopelessness, frustration, disappointment towards public institutions or surrender are frequent in these cases (no matter if they are or are not backed up with facts and arguments), and may play a significant role in any other parallel processes of collaboration with public institutions. Institutional top-down discourses of conservation, including the RBA, are directly affected by this issue of unaccountability of public institutions perceived by local population. And this fact has an impact on the global-local interface because it is not only about building trust. Public institutions involved must first demonstrate that they are as accountable as they should be, and then begin to build trust among locals. Some quotes regarding **institutional unaccountability in the field of conservation**, external threats and conflicts are noted below:

"Yes, I know that the forest is protected" (herder). "If the argan tree is to be recognised by UNESCO, it must make laws to protect it" (local leader 1). "Yes he is right, it is necessary that during the closing of the argan nobody enters, any access will be prohibited and for everybody" (herder). "Yes, in this case we can say that UNESCO existed". "If you came the year before, everything is filled with transhumant herds, there were eight tents here" (local leader 1) (interview, February 03, 2019).

"The state spends money on forests and all that, and then there are transhumant herds who destroy everything, so where is the prestige (entity) of the state?!!" "The population cannot do anything without the intervention of the state, civil society alone cannot do anything!" (local leader 2, February 02, 2019).

Self-accountability with respect to local development and local effective conservation. Regarding local communities' self-accountability, locals in general and local leaders in particular are aware that when they face any challenge or conflict, everyone must assume their responsibility. In local leaders' views, they are doing their best effort through associations at several levels (e.g. looking for external partners to bring funding and development projects to their douars, fostering local collective discussions and agreements whose agreed outputs are addressed to regional institutions, etc.). But other institutions or decision-makers are failing to live up to their responsibilities.

The following quote shows (i) the **local self-accountability** and proactivity, (ii) the community frustration after 15 years of local active demand for State support (regarding the lack of basic infrastructures); and (iii) the **institutional unaccountability in the field of local socio-economic development** and public investments in basic infrastructures at the village-douar level:

"We are fighting!, [to contribute to the solutions] we have created unions, we have done everything, but until now the State has not taken awareness [i.e. responsibility and accountability]". "The associations talked about priorities, the road, schools...;"

a participatory diagnosis was made in 2005 in parallel with the INDH¹⁴⁸ ... "Mohamed six created the INDH in 2005". "We started with a participatory diagnosis of each region -what do you have and what do you lack, and what are your priorities-, is it water, electricity...?" "They asked for our opinions, then we created the association, we made a participatory diagnosis to declare our needs: water, electricity, ..." "In 2005 they [i.e. INDH] set up the provincial committee under the presidency of the Wali and the local committee under the presidency of the commune, the Caïd and civil society. The associations chose one to participate in the local committee, and I am among them to make the participatory diagnosis..." (local leader 1, January 27, 2019).

4) INSTITUTIONAL SUPPORT, COMMITMENT and RESOLVE

Linked with the widely perceived unaccountability of public institutions is the **lack of institutional support**. Another widely shared local concern regarding the global-local interface is the need for State and institutional support, particularly regarding funding and investments at the local authorities' level (e.g. territorial communes and caïdats) and at the local communities' level (douar-village).

Local leaders (either from the ADL, traditional Jmaâ and/or local leader families) are in close contact with local authorities at the rural commune and Caïdats levels. In the two case-study local communities, their relationships with local authorities are of collaboration, empathy and respect. Local leaders may or may not agree with local authorities' decisions and behaviours, may or may not receive the support they ask for, but they usually understand local authorities' positions and constraints. Regular interactions and dialogue foster this empathy between actors and may help building trust. In turn, when locals understand that their needs for public investments (as in the case of legal support) cannot be addressed through the Commune or Caïdat level (i.e. sub-regional level), they blame the State (the central government) for not being accountable enough towards the most vulnerable populations under their responsibility.

The following quotes exemplify the local leaders' empathy towards local authorities, their alternative strategies of looking for funding and their opinions about who are the actors responsible for solving financial issues at the local level:

"Depends on whom?!! ... [solutions to community problems depend] on Allah, for the rain (Leader1 TJ). "The state [must] inject money into" (local leader 2). "On the state budget" (local leader 1). "The State must... uh, Invest" (local leader 2). "It [the State] must solve the problems" (local leader 1). "Rural communes have no income, nothing" (local leader 2). "Nothing, zero, they have no income. They [central government or State] give 200 million¹⁴⁹ [dirhams/MAD] every year to the commune, which uses it to pay the civil servants they [central government] have sent. There's nothing left! (sarcastic laughs). There is no income in fact, for the communes" (local leader 1). "Especially that of Ait Ouadrim..." "and wearing "Adrimn" means money" (laughs) (local leader 2). "But it's the opposite" (laughs) (local leader1) (collective interview, February 02, 2019).

"It is important the efforts of everyone in my opinion [to contribute to solutions], of all" (local leader 1). "Yes, yes" (local leader 2). "So, now the associations are looking for partners outside [the community] and they are no longer waiting for the rural commune [local authority] to do plantations or other things" (local leader 1) (collective interview, February 02, 2019).

5) CONNECTIVITY, INCLUSIVENESS, AGREEMENT

Local collaborations with public institutions. Local strategies and experiences of collaboration with institutional partners constitute an additional issue relevant to the global-local interface. It concerns the strategies followed by local communities to best match the opportunities of local support or funding available, with their own community interests. Also, these opportunities are assessed under parameters locally established, which is something highly relevant. The following quotes summarise

¹⁴⁸ Initiative Nationale pour le Développement Humain. National Human Development Initiative.

¹⁴⁹ 200 million MAD = 18,842,000 € approx.

the second case-study local community strategy to attract development projects and funding to their village and some of the parameters under which the community leaders evaluate the different partners and projects.

Since 2005, following the creation of the INDH and the local ADL (i.e. local association), the latter has fostered partnerships with four public administrations and institutions (see Fig. 104).

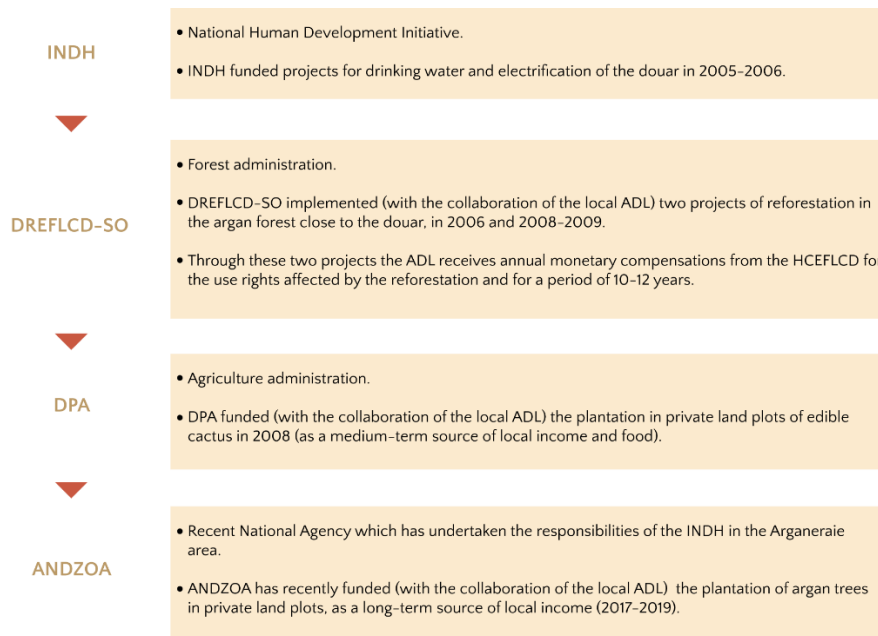


Figure 104: Partnerships with public administrations and institutions fostered by the local ADL in Tamejloucht, following the creation of the INDH in 2005.

As it can be understood from the quotes below, locals give importance not only (even not mainly) to the project itself but to the side advantages it will provide to the community. For example, the number of years that the affected land plots will be fenced; under surveillance by guards (paid by the project); number of years the land plots, crops or trees will be irrigated (by the project); number of hectares affected and if they are private, collective or public property; estimated monetary direct income to the community and if it will be short, medium or long-term; and by-side opportunities of further projects with the partners involved at present.

Under these parameters and in the current context of open conflict with the “new transhumant herders”, local leaders perceive the DREFLCD-SO as a good partner because the affected land plots will be fenced (and thus protected from camels) for a period of 10–15 years, while the ADL receives annual monetary compensation that the community can use to finance or implement the actions they decide themselves in the short-term. In turn, the biggest advantage of the ANDZOA as a partner is not for the tree planting itself (which will give no direct income until 8–10 years’ time), but for its potential of funding other kind of priority projects to the community, such as the paved road or the school transport. The ANDZOA’s project also guarantees irrigation and surveillance of the planted land plots for three years, which gives the community some time to look for more long-term solutions to their problem with the “new transhumant herds”.

“During a meeting elaborated on the issue of partnership with the officer (DREFLCD-SO) we discussed that the three partners (i.e. DPA, DREFLCD-SO and ANDZOA) can be active in the douar and each of them can take care of a project” (local leader 1, February 17, 2019).

“It is just the last few years ...when we started (to build partnerships and bring projects to the douar); before we had no projects”. “Yes, we had lived with France (i.e. French Protectorate), and after its departure we had continued to live, but for projects it is recent”. “It was in 2006 that foreigners, people from agriculture and foresters started to make projects here”. “The beginning of the projects was in parallel with that of the associations” (local leader 1, February 17, 2019).

“Germany is injecting money for the ANDZOA and the ANDZOA has planted about 80 hectares of argan trees in the douar...” “in return it (ANDZOA) will build the road and bring school transport to the douar”. “Boughaba (DREFLCD-SO) built the first road but it was destroyed by the Assif (i.e. river)”. “Planting of ANDZOA’s trees includes 500 hectares in Taroudant, 150 hectares in Tiznit and 80 hectares in Ait Baha” (fieldnotes, February 17, 2019).

6) RESILIENCE: THE EFFECTS OF GLOBALISATION

Deep and rapid socio-cultural changes and their impact on present mindsets and behaviours among the local peoples of several generations is the last issue attested by locals when asked for the global-local interface. The sociocultural and intergenerational change of behaviours and mindsets inside local communities is an issue widely acknowledged by most people at all levels, also local level; however, it is not always explicitly recognised. The following quote from one of the local emigrants to France, expressing his opinion about solutions in the douar to current local problems, illustrates the issue:

“There is always a solution [to local problems] but there are some who block. ... it is the mentality nowadays that is a bit, um, stupid. It [locals’ mentality] has changed. Before, we solved conflicts among ourselves, until we agreed, and then we went to the Caïd etc. to do what was necessary. But now, as soon as there is a problem, a brother who is in a place, he will no longer say ‘yes, that’s true’, that’s his, ... no! He swells, the other one swells too, that’s not good. Now conflicts happen more often and there is less patience and less intelligence [to solve them internally]” (migrant, February 24, 2019).

4.3. ACTORS PLAYING A ROLE ON THE INTERFACE

Once analysed in-depth the RBA (research chapter 1), each of the two case-study local communities and their *agdals* (research chapters 2 and 3) and how the global-local interface is perceived by the RBA institutional stakeholders (subsection 4.2.1) and by the local communities’ members (subsection 4.2.2); it is time to present the three complementary analyses that will allow for a comprehensive examination of the interface (as noted in chapter 4, subsections 4.3, 4.4 and 4.5), showing the interplay and potentialities for inclusive environmental governance in the study area.

The first complementary analysis presents the main common actors playing a role on the interface. It builds on previous analysis and data such as (i) previous RBA-level and Local Community-level actors’ maps (see Figs. 72, 83, 95 in subsections 1.1.1, 2.2.1 and 3.2.1, respectively); (ii) previous analysis, including the three social analyses CLIP (see Figs. 73-74, 84-85, 96-97 in subsections 1.1.2, 2.2.2 and 3.2.2, respectively); and (iii) information from the joint coding and analysis of all the field data (e.g. by assigning a specific code and subcodes to actors’ groupings).

The diagnosis of actors on the interface reveals the following results. First, which are the main common actors present simultaneously in the RBA and the Local Community levels (Fig. 105). And second, which and how are the main relationships of collaboration and main common interests, the main relationships of competition or conflict and main divergent or conflicting interests and the role and influence of legitimacy and power within the RBA and the two case-study local communities, namely, the global-local interface (subsections 4.3.1, 4.3.2 and 4.3.3).

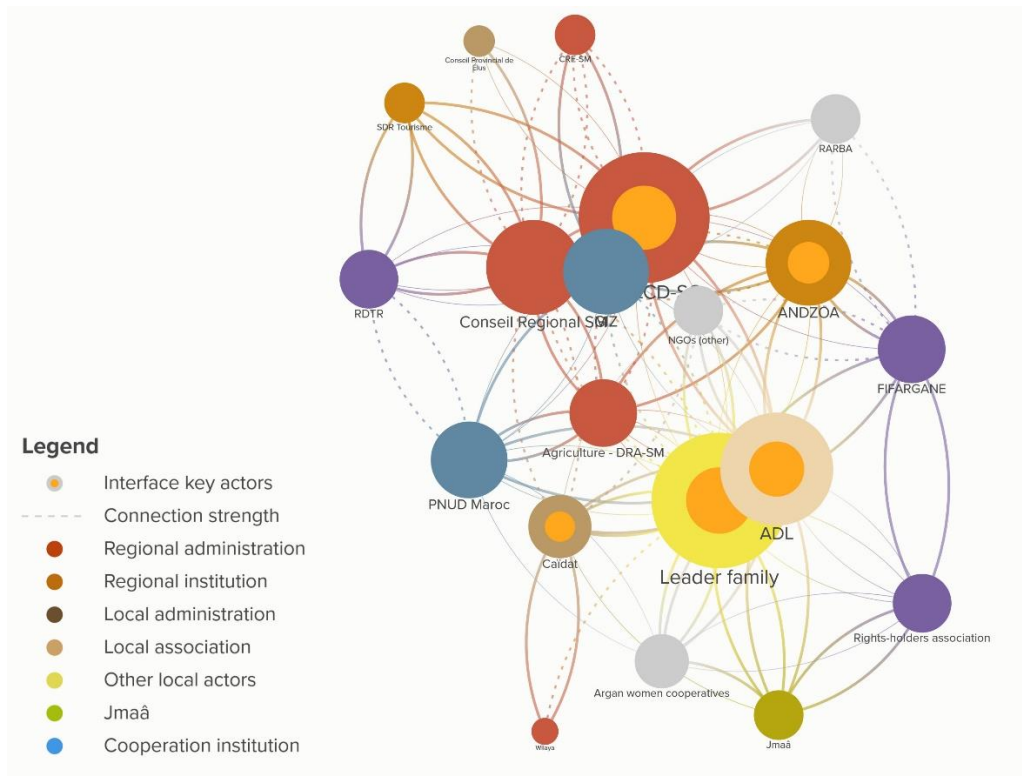


Figure 105: Joint multilevel actor's map showing the main common actors "playing a role" on the global-local interface between the RBA and its local communities (Tisskji-Tamejloucht). (Kumu, 2020).

4.3.1. COLLABORATION

In accordance with previous CLIP analyses, I consider "interests" as the net potential gains or losses for a particular stakeholder arising from the project or subject at stake, in this case the global-local interface between the RBA and the local communities. The main **common interests** between local and RBA actors taking an active role on the interface are, in most cases, linked to the various development projects that reach the local (i.e. douar) level (see Table 30).

COMMON INTERESTS	
PRECURSOR	DESCRIPTION
Large national sectoral policies	Agriculture-Green Morocco Plan, which is at the base of most of the local projects fostered by the regional and provincial Directorates of Agriculture (e.g. DPAs, ORMVASM, DRA-SM).
National sectoral strategies & national legislation linked to them	Forest's conservation and reforestation initiatives of the HCEFLCD, coordinated and implemented by its regional and provincial Directorates (i.e. DREFLCD and DPEFLCD). They are subject to the compensation payments scheme regulated by law for the customary use rights affected.
International funding initiatives	Mostly related to environment and sustainability, local development and livelihoods, and/or gender and equity issues. International cooperation agencies such as the PNUD, GIZ and the like tend to establish partnerships with national and regional sectoral administrations (e.g. Agriculture, Environment, etc.) and public agencies (e.g. ANDZOA) to co-fund and coordinate large-scale local projects.

Table 30: Main precursors fostering common interests between local and RBA actors. Source: own elaboration.

Relevant examples of these development projects with local impact and direct links with local and RBA actors of the interface, on-going at the time of the fieldwork are: (i) the PSS_APAC¹⁵⁰ project, coordinated by PNUD and funded by the GEF Small Grants Programme; (ii) the EC-SM¹⁵¹ project, coordinated by PNUD and ADA¹⁵² and funded by the Global Environment Fund¹⁵³; (iii) the DARED¹⁵⁴ project, promoted by ANDZOA and funded by the Green Climate Fund; or (iv) the REFAM¹⁵⁵ project, coordinated by ANDZOA and funded by Global Affairs Canada. Other relevant past examples with great impact on the territorial dynamics of the Arganeraie are the PCDA (GIZ) and Arganier projects (UE and Moroccan ADS), precursors of the RBA designation and the Argan oil women-led cooperatives boom in the 1990s and early 2000s.

At the interface between RBA actors and the two local communities studied, some of the main **formal collaboration relationships** are established via development projects, through which the local communities receive direct investments in their territory (either financial or material). For example, the various projects promoted by UNDP in Tiskji (together with other partners), or those promoted by Agriculture or ANDZOA in Tamejloucht. Another example of formal collaboration not based on development projects is that established in Tamejloucht with the DREFLCD-SO following two reforestation projects promoted by the DREFLCD-SO that pay annual financial compensation to the ADL for the transfer of some of their use rights.

In turn, **informal collaboration relationships** (sometimes prior to the above and sometimes derived from the successful development of projects at the local level) play a fundamental role. It is through these that mutual trust, support and dialogue are built and reinforced. It is these informal collaborative relationships that make it possible:

- For some, to have local allies (for marketing, internal and upwards accountability, access to international funding, etc.).
- For others, to have allies in the administration or NGOs that allow them to attract investments to their village, obtain technical and legal advice, support in drafting and presenting projects, access to training and capacity building, access to relevant documents, etc.
- In general, to reduce or even eliminate barriers and or conflict situations arising from misunderstandings, stereotypes and clichés, lack of information and understanding, etc.

It is precisely these informal relations of collaboration that have been showing for a long time now, something that has also been underlined by some interviewees; that is, the need and huge **importance of the neutral figures of mediator, territorial facilitator, advisor, and trainer within the RBA** and very specifically at the interface between the RBA and the local communities.

¹⁵⁰ Projet de «Soutien stratégique aux aires et territoires du patrimoine autochtone et communautaire» (PSS_APAC)

¹⁵¹ Projet «Approche d’Economie Circulaire pour la Conservation de l’Agro-biodiversité dans la région du Sous Massa au Maroc» (EC-SM)

¹⁵² Agence de Développement Agricole (Plan Maroc Vert). Agricultural Development Agency, through the Green Morocco Plan.

¹⁵³ Fonds pour l’Environnement Mondial (FEM). Global Environment Fund (GEF)

¹⁵⁴ Projet de développement de l’Arganiculture en environnement dégradé (DARED)

¹⁵⁵ Projet «Renforcement économique des femmes de la filière arganière au Maroc» (REFAM)

4.3.2. CONFLICT AND COMPETITION

The main **divergent or conflicting interests** tend to be linked, among others, to the issues shown in Table 31.

DIVERGENT/CONFLICTING INTERESTS	
PRECURSOR	DESCRIPTION
State vs Customary tenure rights	Past conflicts with the Government (Makhzen) or the Foresters (Boughaba), frequently linked to tenure rights derived from the State appropriation of forests towards the end of the colonization period.
Expropriations of land plots	Expropriations of land plots perceived as unjust by locals.
Concessions of public land	(Long-term) Concessions of public land to big investors perceived as unjust by locals.
Conservation policies	Conflicts derived from conservation policies and regulations like those regarding hunting, cutting forest trees, etc.
Illegitimate interests	Hidden or non-declared personal illegitimate interests, including corruption and other illicit behaviours, in most cases hard to prove by the weakest actor involved.

Table 31: Main precursors fostering divergent or conflicting interests between local and RBA actors. Source: own elaboration.

An example, related to conservation policies, is that of prohibition of hunting certain animal species. In some cases, like the gazelle, people understand the legal regulations even if they do not respect the law. But in other cases, like the wild board, people do not understand the legal regulations, and conflict may arise when these animals threaten livelihoods and locals do not perceive that the government react appropriately, compensate them and/or ban them to kill the animals in their properties.

The five issues above mentioned tend to be the outcomes, however, there are underlying factors common to most of these outcomes. These **underlying factors** are related to strong power disparities, even corruption; perceptions of unjust public decisions, policies or laws; feelings of unprotectedness, lack of government support, and being unheard; and in occasions to the fact that governmental efforts are lacking or insufficient for the people affected to understand the measures in place. Yet, above all, divergent or conflicting interests remain unsolved due to the lack of an open just and inclusive dialogue, mediation, negotiation and agreement.

Concerning the **conflict relationships** between the common actors at the interface considered and with regard to the two local communities studied, it should be noted that there are no "open" conflicts of any relevance. However, there are **relations of competition** between institutions at regional and RBA level (the same as those already seen in the Results' chapter at RBA level), **relations of non-aligned or conflicting interests** (which will be discussed in greater detail below) and **multilevel relations of lack of trust and suspicion** especially evident at the local level. This lack of trust and suspicion is multicausal. However, conflicts derived from stereotypes, clichés, lack of information and transparency, misunderstandings, political and economic misrepresentation or twisting, weak downwards institutional accountability and poor implementation of laws are the most frequent ones.

A classical local-institutional relationship of mistrust and suspicion still alive nowadays, is the one related to the appropriation by the State of all the forests in 1954 (right before the independence in 1956). For its deep roots in the local and conservation discourses on the field, this historical conflict deserves at least a short mention (see box below).

State declaration of public forests

The authoritarian and unilateral way in which the Moroccan State declared all country forests as public forests in the mid-1950s and the later also authoritarian way to control locally law infringements for the sake of conservation were (and still

are) perceived as a direct attack of the State (mainly ruled by Arab elites) to the impoverished rural populations (mainly Amazigh), to their livelihoods, their future, their rights, and a disregard for their past efforts in managing the forests on which they depended for their livelihoods.

The State appropriation of forests triggered a dynamic of local detachment from forests. As far as forests were not a local property nor responsibility anymore, local populations increasingly exploited forest resources in a non-sustainable way. Of course, this was not always the case, but it was enough for the State, through the Forest administration (i.e. HCEFLCD), to exert its power and punish some of the law infringements in ways that have had deep consequences in the common imaginary of local rural populations all around the country. Additional elements such as the military-looking uniform of the rangers, their haughty attitudes on many occasions, cases of corruption between state officials and rangers, some cases of conflicting and/or unjust land expropriations, etc. have fuelled since then the aforementioned “common imaginary” of foresters. The term “Boughaba” is impregnated with this common imaginary, still present nowadays, among a large share of the population (on many occasions led by stereotypes and clichés socially shared). As a result, when it comes to land-related conflicts of local populations with either public institutions or other external actors, there are always people who claim it is the fault or the responsibility of “Boughaba”; no matter if the public institution is the HCEFLCD or not.

4.3.3. LEGITIMACY AND POWER

The question of **legitimacy** concerns who is entitled to make rules and how authority itself is generated’ (Bernstein, 2005:142-143). Legitimacy is ‘the acceptance and justification of shared rule by a community (Lockwood, 2010:758). However, in the context at stake, the definition of “community” is not so evident and may be easily contested, so the question of legitimacy is not as straightforward as it might seem.

Given the complexity and fuzzy context found in the study area in relation to legitimacy, I have chosen to focus on the original principles of legitimacy and be consistent with previous CLIP analyses (see Annex III). Therefore, I consider legitimacy as the degree to which other parties recognise the three Rs of the stakeholder considered: Rights (legal/social-customary); Responsibilities (legal); and Resolve, determination or will.

Legitimacy plays an important role in the complex global-local interface as there are various types of legitimacy widely accepted and recognised (Fig. 106). On the one hand, that of the **State and positive law** (i.e. formal written laws), which is linked to a high level of power. On the other hand, that linked to the **customary law and ancient tribal societies** present in the area far before the actual State and laws. This second type of legitimacy is linked to actors and groups with far less level of power; however, customary law, norms, and institutions (if they are not locally dormant or extinct) tend to be highly accountable even nowadays. On the contrary, positive laws and State institutions, regulations, policies, and public performance in general do not always reach enough levels of accountability, nor coherence and transparency as it would be expected (especially downwards accountability). In occasions, these factors weaken State legitimacy, which is then maintained due to higher levels of power.

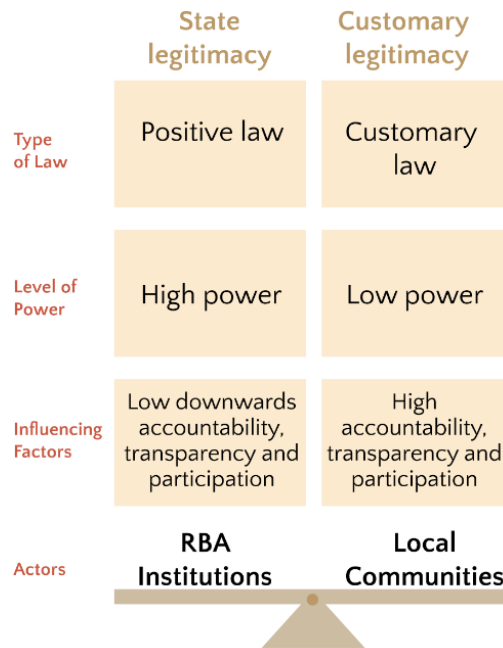


Figure 106: Legitimacy. Balance of State legitimacy and customary legitimacy relationships that play a role in the global-local interface (RBA-ICCAs or agdals) and the main factors at play. Source: own elaboration.

Power, in turn, refers to the control or resources that a given stakeholder can use to promote or oppose the objectives of the project or issue at stake. For example, control over economic assets and funding; authority; ability to coerce/force; prestige/status; social ties/connections; control over diverse channels of information/communication; knowledge and skills; and human capital.

In the study area, power is highly centralised in the public institutions (mainly those dependent on the Ministries of Internal Affairs and Agriculture, and the High Commission of Waters and Forests) and those stakeholders with access to funding (mainly international funding, public State funding, or private funds from big investors). Therefore, power is in direct relation to authority and economic means (Fig. 107). Yet, local leader families and rights-holders still control to some extent natural resources and have a level of power of negotiation at the global-local interface that should not be underestimated by institutions.

Because the RBA as such is not considered a strategic issue in the area at an economic or political level, it does not seem to be the subject of complex intrigues and large-scale power and interest games. However, there is a very clear and neat power unbalance between local actors and civil society organisations on the one side, and public bodies, funding bodies and economic actors on the other side. Figure 107 shows how most of local legitimate actors with interests in the RBA have no relevant power over decisions, except for the leader families and just to some extent. In parallel, most of public legitimate actors have a big share of power over the RBA territory but do not show interest in the RBA as such. The lack of interest is so evident that they do not even fulfil their responsibilities with regard to the RBA. Agriculture for example, a powerful actor at the national level and within the RBA, has strategic policies openly opposed to the MAB prescriptions and to many other sustainability treaties in force. Additional examples in the same line might be mentioned with regard to mining, urbanism or big infrastructures to cite some. In this context, the two single powerful public actors with interests over the RBA are the forestry administration (i.e. “Eaux et Forêts” or DREFLCD-SO) and, more recently, the ANDZOA, dependent from the Ministry of Agriculture. While the forestry administration is the legal holder of the RBA and have attributions concerning conservation; the ANDZOA is a public agency

with attributions and funds concerning development in the Arganeraie region. At an RBA or regional level, the relations of power between the DREFLCD-SO and the ANDZOA are influenced by their relations of interest, sometimes competing, occasionally conflicting and sometimes of close collaboration (see Figure 74 in the RBA's results chapter). The relevance of this issue is that the interplay between power relations, competing interests and perceived legitimacy of the DREFLCD-SO and the ANDZOA may lead to blockages in the effective implementation of the RBA.

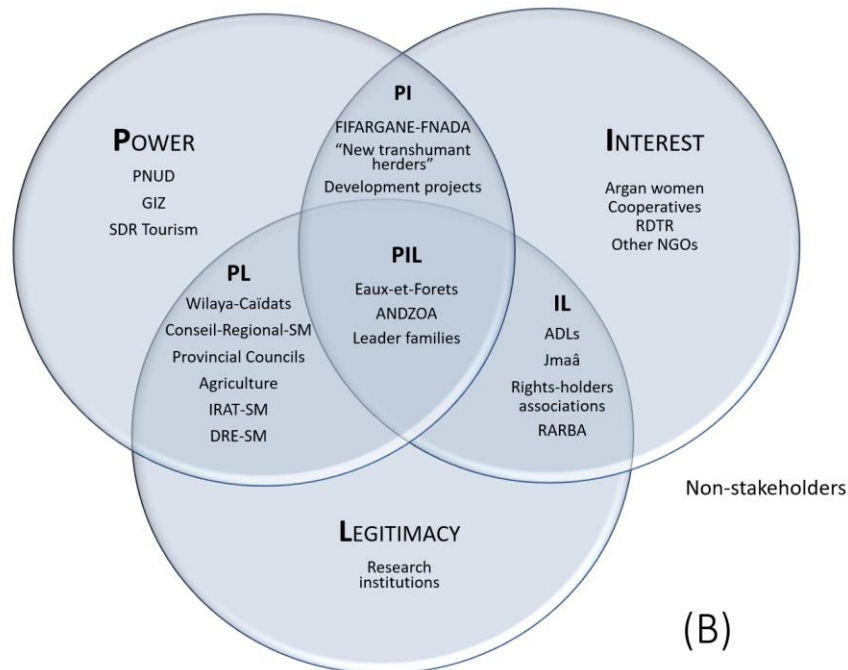


Figure 107: CLIP Social Analysis showing the main actors "playing a role" on the global-local interface between the RBA and its local communities (Tiskji-Tamejloucht). The joint Venn diagram classifies the relationship between the various CLIP descriptors (adapted from Chevalier and Buckles, 2008).

4.4. FACTORS AND KEYS PLAYING A ROLE ON THE INTERFACE

The second complementary analysis that will allow for the examination of the global-local interface is the identification of drivers, factors and keys able to connect the two approaches to governance considered (i.e. RBA top-down vs *agdal*-type bottom-up); and thus, able to influence inclusive environmental governance (IEG) in the study area. The identification and analysis of these drivers, factors and keys playing a role on the interface involve higher complexity and, occasionally, a higher level of abstraction in the inductive qualitative data analysis process. Therefore, I have mobilized information from the joint coding and analysis of all the field data obtained at the RBA and local levels. I have done so by assigning specific codes and subcodes to each element or factor to be analysed. Examples of codes and subcodes are "factors on the interface", "governance impact factors", "proposals-demands", "concerns local1", "CLIP-RBA" or "threats local2".

The identification of drivers, factors and keys playing a role on the interface and thus influencing IEG in the study area revealed several results that structure this subchapter. First, some relevant local and RBA level **drivers** of IEG (Fig. 108). Second, various **baseline needs** and constraints that should be addressed in advance at either the RBA level and/or the local community level; that is, prior to any further action or initiative to be implemented in the study area (Table 32). Third, some **keys** to

improving each of the two governance approaches (i.e. BR vs Local Community and *agdal*), Table 33. And fourth, a set of **enablers** to foster inclusive environmental governance (IEG) in the study area at the RBA level and/or the local community level, Table 34. Besides, I note that this is more an inductive summary of what has emerged from the field data and qualitative data analysis than an exhaustive compilation of factors related to inclusive governance in general.

DRIVERS OF INCLUSIVE ENVIRONMENTAL GOVERNANCE (IEG)

Taking the diagram at the beginning of this chapter 4 (Fig. 101) as a starting point providing an overall view of the dynamic and complex social-ecological system under study (i.e. the global-local interface) and its main components, we may infer that one of the first grouping of elements to be considered as influencing the global-local interface are the individual and collective frameworks of ideas or mindsets brought to bear by the different actors integrating the system (particularly decision-makers). Those frameworks of ideas relate to individuals as well as to organisations or institutions; and often relate to one or more of the following topics: economic wealth and development, modernity, sustainability, conservation, material and immaterial cultural and natural heritage and know-how, classical sectoral policy approaches and other social issues. Accordingly, drivers of IEG are mainly related to values, motivations and behaviours, interests, power dynamics, material, and immaterial resources and/or different type of relationships and emotions stemmed from the above-mentioned frameworks of ideas.

Figure 108 presents a first rough outline of drivers of IEG that have demonstrated to be relevant at the local, RBA and interface levels. I have grouped them in four wide categories, namely:

1 Types of relations. Relationships of power, collaboration-alliances, conflict-rivalry, dialogue-respect, interests.

2 Cultural values, aspirations, and influences.

3 Material and immaterial resources or resource availability. Material resources such as funding or natural resource availability, and immaterial resources such as knowledge, information, and capacity availability. Capacities of high relevance for IEG are long-term thinking, institutional and individual capacity to deal with uncertainty and to bridge organisations, projects, groups, or ideas. Also, other soft skills like facilitation, mediation, building trust, sense making or managing conflict.

4 Attitudes, behaviours and emotions. Main attitudes and behaviours: non-judgement or prejudice "of the other", non-consideration of stereotypes, trust, leadership of individuals and groups or institutions, commitment and responsibility, open and transparent recognition of one's own interests (individual and collective) prior to any negotiation or agreement, empathy, flexibility, proactivity and will or resolve, cooperative work and networking (formal and/or informal). Main emotions: sense of common good, sense of belonging and or identity, fears, resentment, hope or expectations.

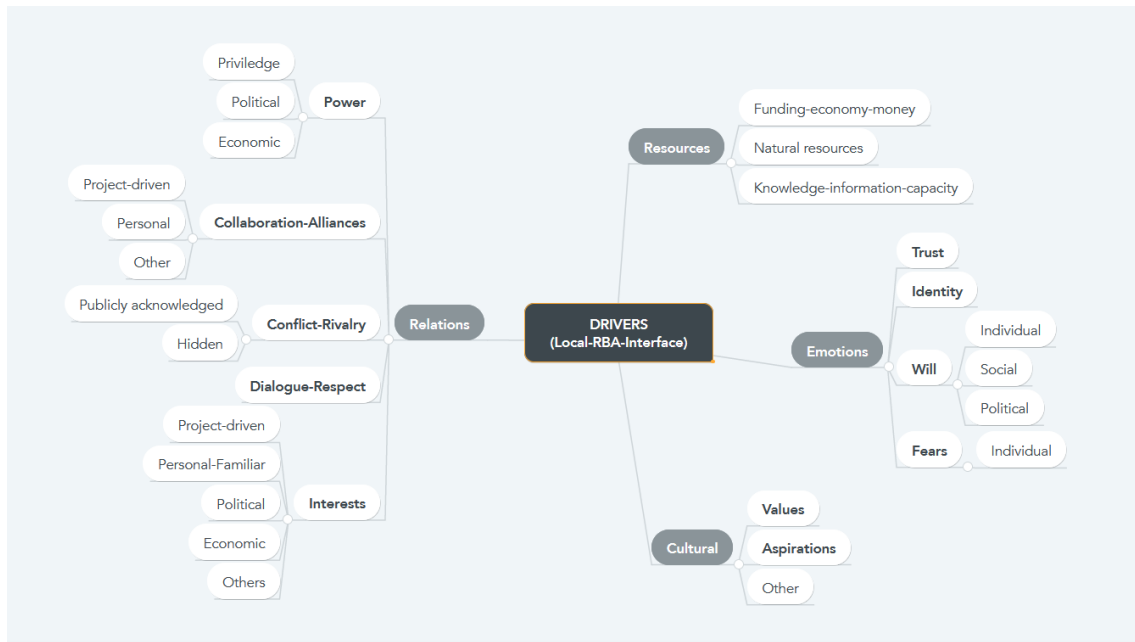


Figure 108: Relevant Local and RBA level Drivers Playing a Role on the Global-Local Interface. Source: Own elaboration.

PRIOR BASELINE NEEDS

Linked to many of the above-mentioned drivers of IEG, findings reveal a set of more specific **baseline needs** and constraints that need to be tackled in advance at either the RBA level and/or the local community level, prior to any further action or initiative to be implemented in the study area aiming to foster IEG (Table 32). Many of them may seem rather logical and obvious, however, they remain major constraints to governance systems worldwide and, particularly, to the Arganeraie study case. For this reason, the baseline needs in Table 32 should be considered in any study, analysis or action concerning governance in the study area hereafter.

Some of these baseline needs are common to both levels of analysis (i.e. RBA and local), while others are specific of one level or the other. One example of common baseline needs is the fact of finding a common arena of interests, understandings and visions regarding any topic discussed at any moment and spatial scale considered and for all people involved (or, at least, a large share). Our findings reveal that despite the existence of common interests, the Arganeraie study case lacks to present both, a unified vision of the RBA and a unified vision of the *agdal* within the RBA. Without this common arena of understanding and shared (or, at least, compatible) visions, it is hard to consider a common territorial project of any kind concerning the interface or an IEG model truly inclusive and highly supported by most stakeholders and populations involved.

A second common example, apparently easy to tackle and often disregarded, is the issue of language (i.e. Tashelhit, Arabic, French) and “languages” (i.e. fair, transparent, inclusive, non-hierarchical, non-technical) in which actors involved on a certain subject or concern communicate among them. It is obvious that in absence of a common communication channel, a fruitful, inclusive, and fair discussion or agreement are hard to reach. However, both language and “languages” are sometimes used as tools for exercising power, authority or privilege over others; to manipulate debates or decision-making processes. This happens at institutional level, but also at local and even familial level. Although it is not always intentional, it remains a major constraint to IEG, and thus a baseline need.

RBA Baseline needs
Language (i.e. Tashelhit, Arabic, French) and “languages” (i.e. fair, transparent, inclusive, non-hierarchical, non-technical)
Common arena (of interests, understandings, and visions). A joint unified vision of the RBA is a must.
Governing body (broadly accepted and highly capacitated)
Either a well-suited legal support or a strong political commitment at the national level (higher than any of the sectoral ministries involved (i.e. head of government, secretary general of the government -no political affiliation-, king)
Effective conflict-resolution framework (flexible and multilevel)
Effective participation framework (inclusive, fair, and multilevel)
Assigned budget (availability and continuity in the long term)

LOCAL Baseline needs
Basic infrastructures and services (e.g. paved road, primary school, school transport, health, etc.).
Job opportunities and or external support to create them.
“Languages” (i.e. fair, transparent, inclusive, non-hierarchical) intra- and inter-community.
Common arena (of interests, understandings, and visions) intra-community and with the RBA. A joint unified vision of the <i>agdal</i> is a must.
A well-suited legal support for the customary mechanisms of governance and or a strong political commitment and support at the local, regional, and national level against external threats to local livelihoods.
Effective participation framework specially inclusive for women and young community members.
Long-term capacity building initiatives or programmes (addressed to effectively participate in decision-making, collaboration, governance, and effective access to relevant information)

Table 32: Baseline needs and constraints to be addressed in advance within the RBA and within each local community.

KEYS TO IMPROVEMENT

Once considered the most relevant baseline needs acting as major constraints to IEG in the Arganeraie case study, it is worth to note some **keys** to improving each of the two governance approaches considered (i.e. BR vs Local Community and *agdal*). Table 33 summarises the most relevant keys to improvement identified at the RBA and local level. Some keys stem directly from respondents’ requests, e.g. clarify roles and responsibilities of local and institutional actors and organisations; explicitly and precisely identified (also the RBA governing bodies and their personnel). While others are the result of a more elaborated content analysis of field data, e.g. enhance local resilience, specially through local medium and long-term strategies to face external threats.

Although I have adopted a specific straightforward structure to present the results of the analysis, I advise not to overlook or underestimate the relevance of maintaining a holistic view of the subject under analysis, because most outcomes are interlinked.

RBA Keys to improvement
Full assumption of current responsibilities of each of the sectoral institutional stakeholders already linked to the RBA (including the individual responsibilities of their staff members involved)
Clarify roles and responsibilities of governing bodies and their personnel (officially and precisely identified)
Assign sufficient human and material resources to carry out the allocated tasks (i.e. adequately trained managers-mediators to carry out exclusively tasks related to the BR in the medium-long term)
A budget allocated exclusively to capacity-building, coordination, and communication within the RBA (ideally provided by the various public institutions that are members of the governing board)

Address functional connectivity (i.e. alignment of priorities, plans and activities across RBA institutions; horizontal and vertical)
Strong and mandatory commitment for transparency (including clarity in communication, visibility of decision-making processes and availability of relevant accessible information to all actors - with an allocated budget)
Foster inclusiveness, fairness, and resilience, in the sense of Lockwood (2010)
Enhance legitimacy (not only legal legitimacy but also social, customary, ...)
The consideration of the spatial scale and inter-relations and the temporal dynamics

LOCAL Keys to improvement
Assumption of (individual and collective) responsibilities towards the <i>agdal</i> and the Community of a large share of its members (not only community leaders).
Effective participation framework (inclusive, fair, and multilevel) intra-community, specially inclusive for women and young community members.
Long-term capacity building initiatives or programmes (addressed to effectively participate in decision-making, collaboration, governance, and effective access to relevant information).
Clarify roles and responsibilities of local actors and local organisations. Explicitly and precisely identified (especially for those local actors who have a say in local decision-making and governance but do not reside permanently in the douar).
Commitment for transparency and access to information of all community members (including those who do not know how to read).
Enhance resilience, especially through local medium and long-term strategies to face external threats (e.g. first by making aware most community members of the existence, characteristics and predicted consequences of such threats, in their own language).

Table 33: Keys to improvement within the RBA and within the two local communities.

ENABLERS OF INCLUSIVE ENVIRONMENTAL GOVERNANCE (IEG)

Before going into the detail of some of the most important enablers of inclusive environmental governance (IEG) in the study area, it is worth noting two key issues. First, the importance of differentiating between individual local actors (some of them “permanently” over-critical) and local leaders (e.g. ADLs), most of whom are very cooperative and proactive. This warning also applies to the RBA, as it is important to differentiate between people who really know the RBA in detail (more open to dialogue in general) and those who do not. And second, in general, at all levels and in the absence of undeclared hidden interests (which is not rare), the greater the knowledge and understanding of a given issue, the greater the openness to dialogue, listening and negotiation an individual has (i.e. greater empathy).

This said, Table 34 outlines a set of **enablers** to foster IEG in the study area at either the RBA level and/or the local community level. In addition, as seen in the analysis of the RBA (see RBA’s results chapter and Fig. 76), positive informal dynamics and the game of individual and institutional actors also play a key role in the case of the global-local interface dynamics. These actors, guided by their values, identities, self-responsibility, leadership, personal concerns, and willpower, can potentially build a certain level of resilience that set the basis for an inclusive environmental governance model (flexible, adaptive and resilient), while they foster dialogue, improvement, and evolution. These informal dynamics are referred to relationships of trust, collaboration, alliances, or dialogue mostly. At this point paying attention to individuals' frameworks of ideas, values, motivations, mindsets, interests, etc. (like suggested by Armitage et al., 2011; Buschke et al., 2019; Tengö et al., 2014), among others and pointed out above in this sub-section) is paramount as institutions are ultimately made up of individuals (Figure 101).

RBA Enablers for inclusive governance
Personal interests (e.g. social-cultural relations, economic, professional) and institutional interests (e.g. attributions, national/international standards, access to funding, politics)
Identity issues or sense of place (officers or researchers with a personal attachment to their (sub-)regions of origin)
Capability and leadership (individual competence and/or institutional internal dynamics, organisational maturity and competence)
Strategic alliances (e.g. individual, political, economic, project-driven; multi-scale and/or multi-actor)
Institutional connectivity or integration
Funding (e.g. development projects)
Values (mainly individual and socio-cultural)
Willingness (individual, social and political)
Institutional accountability (downwards and upwards)
Positive informal dynamics and the game of individual and institutional actors

LOCAL Enablers for inclusive governance
Personal interests (e.g. social-cultural relations, professional), political and economic interests (e.g. local elites)
Empathy and willingness to dialogue (not only from community leaders but from those local actors who have a say in local decision-making and governance but do not reside permanently in the douar)
Capability and leadership (individual competence and/or local internal dynamics, dialogue and negotiation maturity and competence)
Strategic alliances (e.g. individual, political, economic, project-driven; multi-scale and/or multi-actor)
Values (mainly individual and socio-cultural)
Willingness (individual, social and political)
Local accountability (downwards and upwards)
Positive informal dynamics and the personal commitment (and leadership, inspiration, ...) of individual local actors to build bridges with external partners and institutions

Table 34: Enablers of inclusive environmental governance in the RBA and in the two local communities.

4.5. CONSTRAINTS AND SYNERGIES FOR INCLUSIVE GOVERNANCE (IEG)

In previous chapters and sections, we have analysed and described (1) how each approach to governance functions and is understood by its actors (research chapters 1 to 3 of results); (2) how the links between the two approaches to governance are perceived from the top-down and from the bottom-up and how participants suggest strengthening the local-global interface (subsections 4.2.1 and 4.2.2); and (3) we have done a diagnosis of actors (subsection 4.3), key drivers and main factors (subsection 4.4) that may allow for connecting these two approaches to governance (RBA top-down vs *agdal*-type bottom-up).

This section presents the third complementary analysis and final step of the analysis to unveil the interplay and potentialities for inclusive environmental governance (IEG) present on the global-local interface. That is, the identification of the constraints and synergies between the two environmental governance models considered. As in the previous case (subchapter 4.4), the identification and analysis of constraints and synergies for IEG involve higher complexity and, occasionally, a higher level of abstraction in the inductive qualitative data analysis process. Therefore, I have relied on information from the joint coding and analysis of all the field data obtained at the RBA and local levels. I have done so by assigning specific codes and subcodes to each element or factor to be analysed. Examples of codes and subcodes used are “factors on the interface”, “governance impact factors”,

“resilience local2”, “CLIP-RBA”, “SWOT+ RBA” or “future local1 vision”. The comprehensive analyses of actors’ profiles and the relationships among them conducted for the RBA, Tisskji and Tamejloucht (i.e. CLIP analyses) have also been informative for the identification of synergies and constraints.

Findings from the comprehensive cross-level analysis of constraints and synergies for IEG are, thus, structured in a first outline of the main constraints encountered and challenges reported at the RBA and local community levels (Table 35); and a subsequent analysis of the potential synergies and main windows of opportunity identified at the interface of these two approaches to governance (Table 36).

It is worth noting that, **occasionally, the boundary between what can be considered a synergy or a constraint is blurred and often context dependent**. Two examples of what I mean which are central to the entire discussion and analysis, are the *agdal* and the biosphere reserve notions themselves (see the box below). The two are attributes that can be considered or framed as both, synergies, and barriers. Moreover, this is an issue that is rarely talked about.

On the one hand, **the notion of customary *agdal***. *Agdal*, as a major expression of a wider system of customary laws and norms historically developed by local Amazigh populations of rural Morocco. *Agdal* is, among others, a traditional mechanism of natural resources management of demonstrated high resilience, highly flexible and adapted to tribal local rural contexts. Yet, it has demonstrated its high resilience in historical contexts of local and tribal relationships not impacted by global change issues nor by disruptive external threats such as the ones local communities face nowadays. Attempting to revitalize the traditional customary *agdal* from a top-down perspective without adequately addressing the current context of globalisation (and deep societal changes affecting local communities in the Arganeraie) may lead to failure and become a hindrance rather than an asset.

On the other hand, **the notion of biosphere reserve**, has a significant and meaningful potential widely acknowledged by all actors involved (who know in depth the concept), from the international level to the national, regional, subregional, and local contexts. If properly implemented, the notion of biosphere reserve might be the key or missing link that gives coherence to the rest of sectoral policies and strategies and for the sustainable management, development, and conservation of the territory in an inclusive manner for all the actors involved, at the various spatial levels. However, past experiences in the Mediterranean and beyond, show that the notion of BR frequently equates to a theoretical concept implemented in smaller, sparsely populated areas and promoted unilaterally from the top-down. Therefore, the implementation of the notion of BR is not sufficiently inclusive as it should be, and not amply supported by local populations. In these circumstances, a potentially ideal model becomes a failure and a hindrance to inclusive environmental governance.

I present below some of the most relevant constraints and challenges encountered at the RBA level and at the local community level at the time of conducting the fieldwork research, 2018-2019 and then, some of the most evident synergies arisen from field data that may be insightful to foster an inclusive environmental governance (IEG) model in the Arganeraie.

CONSTRAINTS AND CHALLENGES

Many of the challenges faced by the RBA and by the local communities studied are strong constraints, not only for inclusive environmental governance, but also for the most basic MAB prescriptions and governmental recognition of customary law and structures. To date, challenges and constraints shown in Table 35 are menacing the long-term subsistence of both governance models (RBA and *Agdal*) lowering their resilience.

Concerning the RBA, issues like the absence of a shared vision of the RBA are precursors of other challenges like the absence of a governing body or the poor implementation of the framework plan (although there is a multiplicity of causal factors behind each issue), fostering a negative chain effect. We refer to “shared vision” in the sense of what its stakeholders want the RBA to become, what they think it is, for what they think it is useful for, etc. (e.g. a mere label, a regional strategy for territorial sustainability, an additional protected area). Closely linked to this, a mayor constraint is the

insufficient political support at national, regional and local levels regarding the RBA, and BRs in general. As the RBA is not a priority and not even properly known by many of the administrative bodies (or the personnel in charge inside these bodies), a lack of political support is linked to the inappropriate legal framework (e.g. they failed to include the term BR in the last updating of the protected areas law of 2010¹⁵⁶ despite the RBA is in place since 1998). The lack of political support is also linked to internal contradictions concerning laws and policies at multiple levels, to the human, financial and material resources assigned to the RBA, to the establishment of management and/or coordination structures dedicated to BRs or the insufficient coordination to cite some.

Poor participation mechanisms in place, poor integration of social actors and non-integration of local communities in management (poor local-policy interface); lack of institutional appropriation of the BR concept and MAB provisions (i.e. sense of ownership); lack of social research regarding the RBA, are just some of the fundamental challenges faced by the RBA.

At the local level the lack of a shared vision of the *agdal* at a regional level (i.e. among researchers, developers, decision-makers, etc.) also hinders the processes of dialogue and agreement with regard to the RBA and to the regional and national support of customary norms. Similarly to what happens with the RBA, the lack of political support to *agdals* and ICCAs is a mayor constraint. Additionally, (i) weak representativeness of civil society organisations, (ii) insufficient capacity and resources at local level to face current internal weaknesses and external threats, (iii) poor mechanisms of access to information and communication regarding the RBA and land planning, (iv) the ignorance of the BR, or (v) the lack of awareness concerning medium and long-term impacts of global change at local level and over customary structures, to cite some, are highly relevant constraints menacing local resilience.

RBA Challenges
Lack of a shared vision (multi-level and multi-actor) of the RBA.
Insufficient political support at national, regional and local levels regarding BRs.
Inappropriate legal framework. The BR concept and provisions are not integrated nor referenced in any law.
Absence of a governing body. Establishment of management and/or coordination structures dedicated to BRs.
Internal contradictions related to laws, policies, strategies, programmes, etc. of different sectoral administrations (affecting all public institutions and agencies, at all levels)
Insufficient coordination (multi-level and multi-actor)
Insufficient capacity and resources (multi-level)
Understanding and differentiation of the BR concept. Lack of institutional appropriation of the BR concept and MAB provisions (multi-level and multi-actor)
Risky assumptions in collective workshops, public and private debates (e.g. use of a term assuming that the interlocutor/s is/are talking/understanding the same thing)
Involvement and participation of local communities in the RBA. Poor integration of local communities in management (poor local-policy interface). Lack of sense of ownership of the BR.
Poor implementation of the Framework Plan and lack of an Action Plan.
Lack of functionality of zoning. It is unknown to most actors.
Poor policy-research interface. Lack of social research regarding the RBA.
Lack of awareness and poor communication (multi-level and multi-actor) regarding the RBA.
LOCAL Challenges
Lack of a shared vision of the <i>agdal</i> at a regional level (i.e. among researchers, developers, decision-makers, etc.)

¹⁵⁶ Law 22-07 concerning protected areas, promulgated in August 2010, B.O 19/08/2010.

Insufficient political support of <i>agdal</i> and ICCAs at the regional and national levels.
Customary law not formally acknowledged in the national legislation.
Lack of inter-community networking mechanisms.
Weak representativeness of civil society organisations and NGOs of the whole population of the study area.
Insufficient capacity and resources (local level) to face current internal weaknesses and external threats.
Poor mechanisms of access to information and communication (multi-level and multi-actor) regarding the RBA and land planning among others.
Complete ignorance of the BR (but not of the Arganeraie) and, therefore, lack of involvement in the RBA and lack of ownership of the BR concept and provisions (local level and multi-actor)
Lack of awareness, especially concerning the long-term consequences of actions and issues related to global change (climate, development projects, ...) and, thus, the impact over the historical resilient local customary systems.
In the absence of a clear RBA presence at the local level, "local actors" assimilate the RBA to Boughaba and blame "everything" on the Makhzen (State), Boughaba (Forest Administration and its staff) or Akhannouch (Minister of Agriculture).

Table 35: Challenges faced by the RBA and the two local communities regarding an inclusive common environmental governance model in 2018-2019.

SYNERGIES AND WINDOWS OF OPPORTUNITY

In practice, the two main windows of opportunity detected which are already contributing to create synergies between the two approaches to environmental governance considered, are on the one hand, the international policies, agreements, discourses, and funding initiatives fostering bottom-up approaches to conservation and sustainable development. Their impact on Morocco in general, and in the Arganeraie in particular, is a driver of change itself. On the other hand, the informal dynamics already in place and described in preceding sections (i.e. RBA's results chapter and interface section 4.3) are a second pillar setting the base, at present, for the global-local interface (see Table 36).

These informal dynamics are what make the RBA functional today and are also the main driving force behind the existing interface, despite the many challenges it faces and even though it is weak. Common characteristics of informal and formal actors behind the above-mentioned informal dynamics may be enlightening to grasp and understand the actual underlying factors influencing the global-local interface. The most relevant of those common characteristics are outlined in Table 36.

Besides the international and the informal components, already a reality on the field; various potential synergies may be highlighted (Table 36). These potential synergies are highly evident and feasible in theory; they are pointed out and acknowledged by most local researchers, intellectuals, practitioners, and developers interviewed. But they remain somehow blocked by one or various of the challenges/constraints mentioned above, or by other hidden drivers not addressed. In this respect, the two or three elements more widely pointed out in collective debates (e.g. RBA focus group, International Congress of the Argan Forest, National and regional workshops on ICCAs, Argan *agdals* and the RBA) and in the in-depth interviews are the lack of political will, the lack of leadership and the non-priority at the higher level in the country (regarding the RBA and local people in particular, and actual sustainability in general).

Windows of Opportunity

International policies, agreements, discourses and funding initiatives fostering bottom-up approaches to conservation and sustainable development

Informal dynamics in place in the Arganeraie regarding IEG

Common attributes of actors on the actual interface

Ethics and morals
Transparency
Respect
Mutual support*
Leadership
Personal commitment
Trust
Cultural and psychological drivers (like identity)
Advice and guidance
Information sharing
Common interests
Collaboration**

Potential Synergies RBA-Local Communities

High compatibility between the BR and Local Community governance models (theory versus practice). Both models:

Are or foster long-term sustainable environmental governance

Value the collective and the common

Give importance to participation and inclusiveness

Nurture resilience in several ways

Foster and involve flexibility and adaptability

Are open to processes of co-production of knowledge

Mutual recognition of key local and RBA actors:

Local leaders are receptive to the RBA concept and provisions (once they know and understand them).

And RBA key actors and other stakeholders participating in regional debates recognise the importance of the RBA, the *agdal* and the desirable convergence of the two.

National legislation framework and policies allow for the recognition of the *agdal* and the BR. Interviewees and other experts insist on this issue. There are no major constraints.

Feasibility: Interviewees and other experts also argue that creating synergies, institutionalising the RBA and the *agdal*, integrating them into legislation, allocating human resources and funding, etc. is feasible in the current Moroccan context, not a utopia. They claim that it is only lacking political will, leadership and being prioritized.

* **Mutual support** is referred to support in drafting projects and access to funding from the RBA-institutional side for example, or support in becoming local allies of external institutions or organisations, from the local side.

** **Collaboration** is strongly dependent on the capacity to interact with others, from the knowledge and use of their language and “languages” (e.g. TEK, technical skills such as using a software, writing reports or budgeting), to the knowledge and mastery of their tools (as a precursor of multi-layered social and institutional learning and co-production of knowledge):

- RBA may learn from local communities their precise knowledge of the territory and their rules.
- And the local communities may learn from the RBA its knowledge and use of the legal and financial tools of the administration and project donors.

Table 36: Windows of opportunity, common underlying factors influencing the global-local interface and potential synergies to be considered between the RBA approach to governance and the local communities' one.

5. HIGHLIGHTS OF RESULTS/FINDINGS

The comprehensive description of the Arganeraie and the ethnoecological characterisation of the two local communities studied, must be considered as part of the results, and provide the background for potential international readers to grasp the subsequent results. Namely, the extreme legal, administrative and economic complexity of the vast territory of the Arganeraie. In the Arganeraie, modern law and customary law overlap within an international export-oriented economic sector which is currently accelerating profound global change impacts in the whole region, particularly in the rural and most vulnerable communities.

Overall, the results of this thesis point out that both the RBA and the *agdals* system are perceived as excellent, complementary opportunities for most actors at all levels, and inclusive environmental governance (IEG) is thought feasible. However, enough political will and strong leadership are a must for the Arganeraie Biosphere Reserve (RBA) and for the local and customary governance systems studied. Current low strategic priority and a weak political will may be hindering IEG at both levels, blocking a robust global-local interface and menacing the resilience of the whole system at multiple levels and scales.

RBA RESULTS

The study of the RBA governance model (Chapter 1) shows that:

- It is crucial to consider its close interrelation with other sectoral policies, laws and institutional dynamics.
- There are relevant inconsistencies between some of the state strategies and policies.
- The degree of political and institutional priority of the RBA as a whole is very low.
- Many of the institutional actors do not behave as a homogeneous unit. Thus, it is very insightful to look at smaller scales and never forget that institutions are made up of individuals.
- To date, informal dynamics are the ones that maintain a minimum functionality of the RBA.
- There is a gap between official discourse and reality. The RBA case study corroborates the big difference between what is written in laws, policies and strategies and what is actually implemented. This fact is common in the country; linked to historical, governmental strategy and socio-cultural issues, among others.
- There is lack of coordination, of a common vision of the biosphere reserve, of an effective management team, and of territorial or community facilitators which, in turn, impact negatively other IEG factors.

LOCAL COMMUNITIES RESULTS

The ethnographical and participatory approaches have revealed the local knowledge and perceptions of spatial limits and customary governance systems (regarding *agdals* and communities), and communities' self-assessment of their resilience.

The result of ethnographically characterising the *agdals* in both communities and analysing the local actors and their self-definition as a community, reveals very interesting **convergences and divergences**:

- The great current flexibility and versatility of management in *agdal*. In one community, it remains relatively close to tradition. In the other community, it serves as an element of claiming rights of use over natural resources and fighting external threats that threaten local livelihoods in the context of global change and climate change.
- Precise knowledge of *agdal* boundaries depends on use and gender roles. Age also influences due to experience of use generally (e.g. in Tisskji women and in Tamejloucht men).
- The concept of community can be very different. For instance, while in Tisskji is the douar plus neighbouring douars; in Tamejloucht is the whole tribe.
- The collective process of reflection and self-assessment of their resilience revealed differences in both communities. Differences mainly linked to gender, but also linked to trust in institutions, degree of collective spirit and perception of external and internal threats. In Tisskji, women have a voice and an educated opinion on governance issues that they are willing to express publicly. In Tamejloucht they do not. Tamejloucht women show less interest in these issues and, in any case, they do not express it publicly (e.g. to me as a researcher outside the community).
- The local leaders are leader families, local associations and Jmaâ (disappeared in one of the communities studied). The centrality of local leaders and their strong influence on the whole community is apparent.
- Although this centrality may have pros and cons, the pros are more evident in the two communities studied. In many cases, the future of local communities will depend on the characteristics of these main actors.
- Exogenous dynamics of global change, socio-cultural mutations and neo-liberal economy have a tremendous impact on local communities, to which they are very vulnerable.
- In the Anti-Atlas (approximately one third of the RBA area), it is necessary to keep in mind a conception of rurality very different from the classical/traditional one¹⁵⁷. In which very traditional socio-cultural characteristics are mixed with modes of economic management, architectural styles, mindsets, etc. that are very typical of large cities. In many cases, these towns and rural areas are managed from Casablanca, Agadir or France, or at least local decision-making is highly influenced by “urban-like” mindsets.
- The mixture of neoliberal economic dynamics with conservative social structures may increase the vulnerability (i.e. weakening the resilience) of local populations.

Similarities and differences found between the two communities studied present a starting point in the analysis and a solid argument towards the imperative to consider and integrate the wide spectrum of local communities and local governance and adaptation strategies within a single biosphere reserve.

Findings of Chapters 2 and 3 offer an original contribution in a Maghreb country of the crucial need to consider local knowledge and views in environmental governance processes in an inclusive way; not only for obvious ethical issues and the barriers it could overcome, but also for the invaluable expertise/know-how that we (as academics, managers, governors and society) are wasting.

¹⁵⁷ Particularly in the Ait Baha region to which Tamejloucht belongs and the western Anti-Atlas (Tafraout, Anzi, Tiznit).

INTERFACE RESULTS

The joint study of top-down and bottom-up governance models through an interface perspective shows that there are common actors at both levels. The analysis, mapping and characterisation of these has allowed to clarify CLIP relations, and to detect, for example, different types of legitimacy that coexist, and how power relations vary depending on which level we focus on. For example RBA *versus* interface or local *versus* interface. Also certain intra-level collaboration/competition relations may affect the interface.

The focus on the interface adds empirical evidence on the importance of adopting a holistic view in order to minimise the risk of oversimplification.

Analysing perceptions of the actual and potential interface of institutional and local actors is enlightening in the sense of understanding the influencing factors of the interface as perceived from different angles by each other.

Finding in Chapter 4 provide insights towards IEG that imply the need for a shared vision among the spectrum of stakeholder's views, practices, needs and interests. The role and scope of informal dynamics and interrelations among actors cross-level and cross-scale are essential in the RBA and for the two local communities studied. The contribution of these informal dynamics has proven to be vital to the resilience of both governance systems and, thus, for the global-local interface.

Analysis resulting from the joint coding of interface-related data reveals some key aspects for improving the existing governance systems while fostering their complementarity. These key aspects are grouped in four categories as follows:

- **Baseline needs** that must be addressed in advance; otherwise, efforts in other areas are useless. An example for the **RBA** would be *“a governing body broadly accepted and highly capacitated”* and for the **LCs** *“a well-suited legal support for the customary mechanisms of governance and/or a strong political commitment and support at the local, regional, and national level against external threats to local livelihoods”* (see Table 32).
- **Keys to improvement** at both levels. An example for the **RBA** would be *“address functional connectivity, i.e. alignment of priorities, plans and activities across RBA institutions; horizontal and vertical”*; and for the **LCs** *“long-term capacity building initiatives or programmes, addressed to effectively participate in decision-making, collaboration, governance, and effective access to relevant information”* (see Table 33).
- **Enablers of IEG** at both levels. An example for the **RBA** is *“institutional accountability, downwards and upwards”*; and for the **LCs** *“strategic alliances, e.g. individual, political, economic, project-driven; multi-scale and/or multi-actor”* (see Table 34).
- **Challenges/Constraints of IEG** at both levels. An example for the **RBA** is *“understanding and differentiation of the BR concept, and lack of institutional appropriation of the BR concept and MAB provisions”*; and for the **LCs** *“poor mechanisms of access to information and communication regarding the RBA and land planning among others”* (see Table 35).

With this and the direct perceptions of the actors, a big picture of the interface is obtained that is quite informative and useful on a theoretical and practical level for future actions, research or dialogue processes.

PART 5. DISCUSSION

This thesis has tackled two different top-down and bottom-up approaches to governance, aiming to analyse the interface between them under the perspective of inclusive environmental governance (IEG). In this chapter, I will discuss the main contributions of my findings and their implications and potentialities for IEG. The discussion chapter is articulated around four main sections: principal contributions, main strengths and limitations, some take-home messages and future research.

1. PRINCIPAL CONTRIBUTIONS

Overall, as mentioned in the introduction, the principal contributions of this research are closely linked to the research gaps initially detected concerning the research topic, the geographical location of the study site and the methodological design adopted. Hence, this research's general contributions are:

1.- It is **the first study focused on interface processes in the Maghreb/North Africa region** (published in English or French), a region which is also highlighted by some scholars as one of the most underrepresented worldwide in terms of research in protected areas (Blanco et al., 2020) and community conserved areas (Kothari et al., 2012; Tran et al., 2020).

2.- It is **one of the few empirical studies worldwide addressing the interface** of top-down and bottom-up approaches regarding environmental governance of social-ecological complex systems (Blanco et al., 2020).

3.- It is also the first research that addresses simultaneously biosphere reserves and ICCAs in the **Mediterranean**.

4.- It adds an **empirical case study addressing two main weaknesses of UNESCO Biosphere Reserves worldwide**: (i) effective governance and (ii) shortcomings in their implementation.

Additionally, further contributions specifically related to the research findings are presented below in this chapter. Thus, I first consider the factors of effective, good, and inclusive environmental governance acknowledged in the literature of protected areas and biosphere reserves and contemplates those relevant to the RBA case study (**SO1**). In parallel, I also examine which of the local level findings are consistent or not with the key elements of effective, good, or inclusive governance highlighted by the literature specialised on community-based approaches (**SO2**). In absence of relevant literature focused on this interface between institutional (top-down) and community-based (bottom-up) governance models, I present, depict, and discuss (i) which of all these elements, principles and factors identified are relevant; (ii) which are common to both levels and, thus, key influencers of the interface; and (iii) which are the underlying factors also present (and commonly underestimated in the specialised literature) (**SO3**). Overall, I present the identified **influencing factors of IEG at the global-local interface** in the form of a structured and detailed examination of each influencing factor considered.

There is significant value in viewing governance problems from different perspectives. That is why, after considering some of the most relevant influencing factors related to the biosphere reserve and the local communities, to properly analyse the global-local interface, it is necessary to consider additional influencing factors that can foster synergies among different governance systems and

groups of actors or stakeholders implied. Lockwood’s governance principles (Lockwood, 2010) offer an appropriate reference to start framing the analysis. However, **the set of seven principles proposed by Lockwood is not enough** to understand and effectively address some of the core governance challenges persistent over time and that I have encountered in the Arganeraie case study. Consequently, further common influencing factors, issues and drivers emerging from the results section and impacting the interface are also considered (in the form of six additional influencing factors), examined to provide an additional layer of understanding. Table 37 displays the 13 factors considered, indicating which ones corroborate Lockwood’s proposal, which ones add further considerations to Lockwood’s proposal (i.e. extended), and which ones are an additional empirical contribution (i.e. additional).

Influencing Factor	Lockwood's	Extended	Additional
1. Legitimacy*	X		
2. Transparency* - Awareness - Communication		X	
3. Accountability*	X		
4. Commitment - Resolve - Leadership			X
5. Coherence - Legal framework - Management - Zoning			X
6. Inclusiveness* - Participation		X	
7. Ethics – Fairness*		X	
8. Mindsets - Attitudes - Trust			X
9. Connectivity*	X		
10. Resilience*	X		
11. Sense of belonging			X
12. Shared sphere			X
13. Support - Resources - Research			X

Table 37: Influencing factors of Inclusive Environmental Governance (IEG) at the global-local interface. * indicates the original factors considered by Lockwood (2010).

CHARACTERISATION AND FULFILMENT OF THE IEG INFLUENCING FACTORS AT THE RBA, LOCAL AND INTERFACE LEVELS

1. LEGITIMACY

As discussed in previous results’ section, while analysing relationships of legitimacy and power (apt. 4.3.3. and Fig. 106), the question of **legitimacy** is not as straightforward as it might seem. For (Lockwood, 2010:758), legitimacy is ‘the acceptance and justification of shared rule by a community’ and a key factor in the ethical acceptability of governance arrangements in the field of terrestrial protected areas.

However, in the context at stake, namely inclusive environmental governance at the global-local interface between the RBA and its local communities, the following issues need to be considered:

- The definition of “community” is not so evident and may be easily contested by the different groups of stakeholders concerned. First because of a question of complexity inherent to multiple scales. Second, because the local population does not know the RBA (neither its geographical

limits, conceptual definition, practical implications, or actors involved). Third, because in the Arganeraie area there are already different overlapping definitions of community or spatial organisation modes; mainly the one set by the central state administration, and the ancient tribal organisation still functional in various areas.

- The RBA governing body is not properly institutionalised 20 years after its designation as BR, so its legitimacy is weak, if not contested by various stakeholders.
- Local communities also have a traditional governance model, legitimate by customary law, whose best exponent is the *agdal* system. Although nowadays this customary system is also weakened by a complex set of socio-economic, cultural, and climatic changes and dynamics (e.g. argan oil sector impacts, droughts, urban-related and technology-driven impacts).

The above considerations, among others, justify why **legitimacy should be reconsidered and reassessed** at both, the RBA, and the local community level, paying attention at its components more than at the theoretical assumptions (e.g. non-institutionalised RBA governing body and frequently weakened local customary institutions and norms). In this sense, I analysed individually the legitimacy of each main stakeholder of the RBA and the two local communities by rating the degree to which other parties recognise the three Rs of the stakeholder under analysis (i.e. Rights -legal and social/customary-; Responsibilities -legal-; and Resolve, determination or will). See further detail on this in-depth legitimacy analysis in Annex III and the results' sections 1.1.2, 2.2.2 and 3.2.2. To properly reassess legitimacy at the global-local interface in an inclusive way, the above-mentioned legitimacy analysis must be conducted for all RBA stakeholders in a participatory manner (i.e. co-built and validated by all).

For the legitimacy to be enhanced in its various facets, **the question of who is entitled** to make rules and how authority itself is generated (Bernstein, 2005) in the global-local interface **should be revisited** in depth and co-built among all the actors involved. Revisited and co-built looking at: (i) the different types of legitimacy and power balance (Fig. 106), and factor 8 (Ethics and Morals); (ii) factor 3 (Accountability and Commitment); and (iii) factor 5 (Leadership and Resolve). It should also be a truly shared rule, widely and freely accepted in a power-balanced setting (factor 13).

2. TRANSPARENCY, AWARENESS & COMMUNICATION

Following Lockwood's definition of **transparency**, it refers to: (i) "the visibility of decision-making processes"; (ii) "the clarity with which the reasoning behind decisions is communicated"; and (iii) "the ready availability of relevant information about a governance authority's performance" (Lockwood, 2010). However, at all levels involved in this research (i.e. RBA, subregional, local), the impacts of power relationships over transparency, concerning access to information (A) and decision-making (B), play a key role and need a deeper analysis.

(A) With regard to **information sharing**, I argue that it is not presented in appropriate forms to all the stakeholders involved at the RBA or institutional level, yet neither at the local level.

At the **local level**, social structures are far simpler, but internal dynamics exist and play a key role which deserves to be considered. Some facts observed regarding information availability to be considered are the following:

- In many rural local communities of the Arganeraie region and beyond, deep-rooted cultural, religious, and social dynamics and norms persist that prevent information availability to all

community members equally. For example, women have no access to most of the community meetings where relevant information for the community is shared.

- Educational and competence levels may become a constraint to access information too. For example, people not reading Arabic or not understanding Tashelhit.
- Much of the relevant information exchanged at the local level is oral and follows informal sharing mechanisms. Thus, it may be subjected to interpretation and lack of availability to certain community members.

At the **RBA and institutional level**, internal dynamics and bureaucracy in public institutions hinder information sharing. This includes all public institutions at all levels, particularly those related to conservation, development, and research. However, data from participant observation points out that implicit and explicit informal dynamics of power, interests, and trust, together with factors like perceived legitimacy, self-values, self-accountability, etc. are key drivers too. Further facts observed regarding information availability to be considered are detailed in chapter 1 of the results section (subchapter 1.2.3. perceptions of governance in the RBA).

(B) With regard to **decision-making**, I argue that despite it seems obvious that in general, all decisions about protected and conserved areas should be accessible and clear to all their stakeholders, this has hardly ever been the case. Lack of transparency in decision-making processes and the reasoning behind decisions seem to be almost defining facts of any governance system operating in the Arganeraie (i.e. top-down and bottom-up) when it comes to the powerless community members or RBA stakeholders. **Governance and decision-making remain closed to stakeholder scrutiny**, as well as the **reasoning behind decisions**. Thus, achievements may be communicated, but failures are hidden most times.

Awareness and communication in the context of BRs first, refers to the wide understanding of the BR concept and MAB program, their link, and the territorial implications of implementing a BR; and second, it is meant to foster stakeholders and populations with a sense of BR ownership.

Effective awareness and communication in the context of *agdals*, customary law and local governance is meant to foster among stakeholders and decision-makers a level of empathy and respect towards these traditional systems and their local populations and rights-holders.

Communication, cooperation, and collaboration are major challenges affecting most North African BRs to present (IUCN, 2012). At the **RBA level**, the lack of awareness and communication programmes in Morocco and the poor communication in general is also linked to the inappropriate understanding of the BR concept even by most decision-makers (including those who are meant to lead and develop the awareness and communication strategies and programmes).

Within the RBA there is a lack of awareness and poor communication in general (multi-level and multi-actor), including insufficient capacity for programme development (communication and environmental education) and insufficient or inappropriate cooperation and collaboration dynamics. These constraints are translated into and boost the lack of a shared common understanding or agreement over the concept of BR (among others), which in turn hinders the appropriation (i.e. sense of ownership) of the BR and the BR concept (multi-level and multi-actor). However, this sense of ownership towards the territory of the Arganeraie exists among a large share of the population inhabiting the RBA (mainly among the rural populations). It is the decision-makers and urban residents who are furthest away from both, the Arganeraie and the RBA (except for the cases where they are aligned with their particular interests).

At the **local level**, implicit and explicit, formal and informal dynamics of power and interests, along with issues of ethics, values, mindsets and attitudes may be behind the lack of empathy and respect towards customary and local governance systems on the part of stakeholders and decision-makers.

With such a lack of awareness and poor communication in general within the RBA, and such a lack of respect and support of customary and local governance systems, it remains a big challenge to foster effective communication and awareness regarding the global-local interface.

3. ACCOUNTABILITY

Following Lockwood's definition of **accountability**, it concerns: (a) "the allocation and acceptance of responsibility for decisions and actions"; (b) "the extent to which a governing body is answerable to its constituency"; (c) "the extent to which a governing body is answerable to 'higher-level' authorities"; and (d) the "allocation of responsibilities to those institutional levels that best match the scale of issues and values being addressed" (Lockwood, 2010).

At the local level (i.e. douar level), there exists a precise distribution of responsibilities between community leaders and other community members and families, so accountability is high in the two case-study local communities. Instrumental conditions for effective accountability regarding current and traditional local institutions are met upwards and downwards.

However, with regard to local authorities (i.e. Caïdats) dependent from the Ministry of Internal Affairs, issues of accountability equate those of sectoral administrations (noted below). That is, instrumental conditions for effective accountability may be met, but it is common for local and subregional authorities within the RBA to have attributions or duties for whom they have not enough nor appropriate human, material nor financial means. The two local communities studied offer good examples of this and have been proactive in searching external means and funds for those basic needs that the local authority is not able to undertake.

In the RBA, the former instrumental conditions for effective accountability are not precisely identified (Fassi et al., 2011) and, thus, accepted. That is, the management responsibilities remain dispersed and poorly defined. The lack of precise distribution of responsibilities between authorities and staff (or even the lack of staff assigned to the BR itself) prevents the BR from functioning properly.

In line with Lockwood's (2010) claims, governing bodies should first "be answerable to their constituencies—that is, those people who are the ultimate source of their legitimacy, either earned or conferred ('downward' accountability)". Second, "be subject to 'upward' accountability". And third, the levels at which power is exercised (local, sub-regional, regional, national) should match the scale of associated rights, needs, issues and values. In the RBA case study, 'upward' accountability is usually favoured or prioritised with regard to 'downward' accountability in most (if not all) public institutions. And both may be concurrent or contradictory. Additionally, this trend has serious impacts over inclusiveness and fairness of those stakeholders less empowered.

In addition, results from most of the participants interviewed, focus group, and transcripts from other forums analysed corroborate the fact that accountability regarding the RBA is highly criticized (sometimes well-funded critiques and other times not). And this has an impact over the legitimacy of the RBA governing body and the institutions directly linked to it. A more detailed analysis and further findings regarding accountability in the RBA are specified in chapter 1 of the results section (subchapter 1.2.3. perceptions of governance in the RBA). However, accountability in the RBA still

deserves further analysis and discussion to properly grasp and assess the critiques mentioned and their impact over legitimacy of the RBA governing body and the institutions directly linked to it.

4. COMMITMENT & RESOLVE, LEADERSHIP

Political and institutional commitment and resolve concern the actual level of determination or willingness to support either the RBA and/or the *agdal* and local governance systems on the part of: (i) politicians and political institutions and (ii) other sectoral institutions and administrations, including public agencies, public universities, and research centres. Political and institutional commitment and resolve may be individual or collective and, thus, fostered by the whole institution, administration or political party involved. In the context of this research, commitment and resolve are referred mainly to (i) the BR concept and MAB provisions, (ii) the actual priority assigned to the RBA (in its three balanced functions), (iii) the *agdal* system and customary law and institutions and (iv) local populations' and rights-holders' needs, concerns and demands.

At both, **RBA level** and **local level**, evidence from this research points out the insufficient political commitment and the lack of resolve simultaneously towards (i) the BR concept and MAB provisions and (ii) customary law and norms such as *agdals*. As detailed in result's chapters 1, 2 and 3 (subchapters 1.2.3.; 2.4.; and 3.4.), lack of **political commitment and resolve** are at the heart of many other barriers to IEG (in the RBA, local communities and the global-local interface) and foster in turn, lack of **institutional commitment and resolve**. Both have been pointed out by most interviewees and participants in the research at institutional and local levels in one way or another and corroborated by the research findings (after the content analysis) as drivers underlying beyond the rest of influencing factors, constraints and challenges faced by the RBA and by the *agdal* system nowadays.

None of them are a priority at national or regional level. **In the RBA**, first, there is a lack of or insufficient commitment to the BR concept by the governance authorities and politicians initially, but also by local populations and the rest of stakeholders, cross-scale. Second, there is insufficient commitment to and integration of MAB provisions and customary law at national level, particularly in the political, legal, and regulatory arenas. The insufficient political support at the national, regional, and local levels, seems to be **simultaneously cause and consequence** of the lack of strategic priority assigned to the RBA. **At the local level**, the situation is worst, (i) institutional support to the needs, concerns and demands of local populations and rights-holders, is clearly insufficient (when not lacking), and (ii) customary law and rights are perceived by some institutional actors as **obstacles**.

Certain punctual initiatives at the regional level aiming to support local populations and revitalise the *agdal* system within the Arganeraie exist. However, they remain insufficient and not inclusive enough for local populations and rights-holders.

Leadership, understood as the ability and/or qualification to lead, to offer guidance and direction and to inspire others to take action, may be referred to individuals' leadership or leadership of certain institutions and organisations.

At the **RBA level**, the factor leadership has been pointed out in the literature of BRs exclusively referred to the qualification of the heads of biosphere reserves: "they [heads of BRs] have to be able to deal with conflicts between different stakeholders in the same way as with long-term financial issues and invasive species" (Stoll-Kleemann, 2007). Findings from the RBA corroborate Stoll-Kleemann's statement about leadership, yet not only for heads of BRs. I argue that leadership is a relevant influencing factor at all levels of decision-making and all types of stakeholders, from the

political and institutional leadership as such, to the leadership of local communities, or the individual leadership of a given stakeholder, researcher or research institution to give just a few examples.

At the local level, in both local communities, leadership is part of what I have named “collective and individual intelligence”. Communities’ and individuals’ ability to lead, to offer guidance and direction and their capacity to inspire others to take action were remarkable in both cases and closely linked to other factors like mindsets and attitudes (e.g. proactivity, conflict avoidance, search for opportunities and focus on generation of synergies and networks, self-commitment and self-accountability), resilience (capacity for hybridisation, adaptability, flexibility) or identity and attachment to their territory.

Findings from the two case-study local communities are in accordance with the fourth key ingredient of governance highlighted by (Berdej et al., 2016) regarding community conservation. Namely, the importance of leadership for mediation, building trust, sense making, managing conflict, and compiling and generating knowledge.

5. COHERENCE, LEGAL FRAMEWORK, MANAGEMENT, ZONING

Coherence concerns: (a) the alignment, in intent and direction, of sectoral and conservation **policies** at the multiple scales and cross-level along the BR; (b) the alignment of **formal attributions** at the multiple scales and cross-level of all the institutions and personnel involved in the governing body and decision-making; (c) the alignment of the **legal regulations** concerned; (d) the alignment, consistency and compatibility of the **spatial delimitation** and zoning regarding the protected and conserved areas considered (i.e. BR, local communities and *agdals*); and (e) the congruity and compatibility of **discourses** influencing decision-making processes (e.g. scientific, political, pro-conservation or pro-development).

In Morocco, **coherence in policies, sectoral institutions and discourses** must be discussed first at the international-national level due to **inconsistencies existing between foreign and domestic policy**. There is a significant basic inconsistency between the international treaties that the country has signed and ratified and the actual legislative dynamics, action on conservation and management at the national level. There might seem to be a strategy of giving a certain image or of participating at the international level in one sense and acting at the national/internal level in another. I could not say whether for accessing international funding or for some other type of strategic alliance or other.

At the **RBA and institutional level**, formal duties or attributions of the different sectoral institutions involved in the RBA are frequently concurrent and others contradictory. At times, contradictions come from the specific strategies, projects, plans, or programmes derived from the institution’s formal attributions. In any case, this is a relevant constraint that hinders the operationalisation of the RBA governing body at the regional level. That is why a supporting and coordinating instance of higher range (e.g. national government, ministry or the like), as suggested by some interviewees, might be an alternative to face the above constraint. The set of sectoral policies with direct effects on the RBA territory are not fully coherent with each other and relevant inconsistencies exist between sectoral institutions which hinder IEG within the RBA and even its implementation and management.

An additional constraint and incoherence concerning the legal arena is the **gap between the existing legislation and its functional and practical enforceability**. For instance, there are several laws that, many years after their approval, do not have their necessary implementing texts still developed. Other times, laws, regulations, strategies and plans are approved without the allocation of the necessary

financial, material and human resources. In other cases, the time lag between the enactment of a law, the development of the regulatory texts and the allocation of resources is so long that by the time it tries to be implemented, it is already obsolete and non-functional.

At the local level, customary and local governance structures are far more coherent than the institutional ones (and simpler), the spatial demarcation of borders are internally consistent and attributions are clearly defined. However, three aspects must be considered with respect to the interface. First, the internal consistency of local and customary structures, norms and spatial delimitations are frequently not aligned with state-led ones, which is a potential source of conflict or at least a barrier to IEG (e.g. differences between tribal-customary and administrative spatial demarcations). Second, as in the case of the BR, a significant gap exists between the current legislation and its implementation or functional and practical enforceability which hinders IEG from the bottom-up (i.e. policy-practice gap), as for example the Law 113-13 on pastoral transhumance (Bendella, 2019)(). Third, there may be a lack of internal coherence with respect to local discourses too, mostly dependent on the context in which they take place or depending on particular interests at stake.

The factor **legal framework** refers to: (a) the national legal framework related to biospheres reserves and/or protected areas and conservation and development regulations; and (b) the customary law and institutions related to the *agdal* system and other local traditional norms.

Biosphere reserves have no particular legal status as such specified by UNESCO MAB (Batisse, 1982). Also, the inadequate legal framework is a major constraint to effective implementation of BR in the Maghreb (IUCN, 2015). In this region the structures in charge of BRs are the same structures in charge of protected areas, acting as supervisory structures rather than being appropriate management bodies (IUCN, 2015, 2012). Moroccan BRs, including the RBA, fit this constraint. Morocco lacks an adequate legal framework inclusive and well adapted to the BR concept and MAB provisions and has an inadequate institutional design, including precise distribution and acceptance of responsibilities between authorities (a requirement for accountability). On top of the insufficient law enforcement, rural regional development measures or regionalisation still remains among the main challenges for land planning and management of Moroccan BRs.

At the local level, **customary governance** in Morocco also needs adequate law enforcement. *Agdal* system and customary institutions are acknowledged informally by the government, but they have insufficient political and legal support at the national, regional, and local level. Morocco lacks a legal framework that properly regulates and integrates customary law regarding the *agdal* system into the national positive law. Despite the existence of forest laws and regulations for the argan forest acknowledging traditional use rights of their rights-holders since long ago, the *agdal* system itself goes far beyond use rights. It is a whole system of customary institutions and regulations that is worth and needs to be integrated into positive law for its own survival and for the benefits it can provide in terms of conservation outcomes. The integration of customary law into positive law is one of the main demands of rights-holders' representatives, and a large share of researchers, practitioners, local populations and developers.

Closely related to coherence and the legal framework, the factor **effective management** has its own specificities and has been acknowledged in conservation scholarship (Stoll-Kleemann, 2007; van Cuong et al., 2017) as a key factor to be considered in the effective implementation of biosphere reserves and other PAs. Effective management is also strongly linked to factors such as commitment to the BR concept and MAB provisions, inclusiveness and stakeholder participation, political will and institutional support, awareness and communication, or support and resources, among others.

Instrumental conditions for effective management of **biosphere reserves** are not met in most Southern Mediterranean BRs (IUCN, 2015, 2012), reinforcing the strong theory-practice gap that hinders BRs implementation worldwide. In the RBA case study, this is not just an issue of legal and policy coherence or a consequence of an inadequate legal framework, it is also related to the set of factors mentioned above. As explained in the RBA results chapter, the main constraints faced by the RBA and by most North African BRs (IUCN, 2015, 2012) are the following: First, inadequate institutional design entails (i) absence of management and/or coordination structures dedicated to BRs that are closely aligned with MAB principles and (ii) absence in practice of a functional governing body for the RBA. Second, the existing BR management structures remain dispersed and poorly defined, ending up supervising rather than effectively managing the BR, as in the case of the RBA. Third, there is insufficient capacity for effective implementation of BR's management plans and programmes (e.g. inclusive for stakeholder's participation in decision-making, reflecting MAB provisions). Poor implementation of the RBA Framework Plan and lack of an RBA Action Plan until 2020 are good examples of this constraint. From my experience, a first step to overcome the above constraints is to create an independent working group of competent people with the means and exclusive attributions regarding the RBA (of a hierarchy higher than that of the sectoral policies involved in the area).

At the **local level**, the issue of effective management is more one of resilience and external legal restrictions, than something strictly internal. Local traditional governance structures and customary law are adequate for flexible and adaptive management of natural resources; however, they are threatened by external dynamics related to global change. Ultimately, **effectiveness of community governance systems** strongly depends on the real political will and national context and background in which they are inserted. Besides the former difficulties of community governance systems to succeed, the following ones need to be considered too: the difficulty of managing uncertainty; the multiplicity of actors, interests and power games influencing them (from the inside but mainly from the outside); the difficulty of changing the inertia of power and interests of the states, of delegating responsibilities and having leadership and psychological barriers in the face of new valid and legitimate knowledge (such as TEK), competence and capacity-building issues, intra-community inequality and, overall, the interrelationships among different IEG influencing factors.

Regarding **zoning**, at the **global-local interface level**, a clearly defined, agreed and communicated delimitation of areas within a BR or of customary land uses and users' rights is essential to conflict-avoidance in both governance models. However, a congruent and harmonious zoning is hard to achieve in most cases, because of broad and sectoral policies inconsistencies sometimes, incompatibilities between positive and customary regulations other times and because of its link to issues of power relationships and different kind of legitimacy considered.

On top of that, theory and literature show that for BRs to succeed, a functional zoning designation is a must. Findings from the RBA highlight the **apparent paradox of functional zoning versus functional management (of such zoning)**, which underlines in the RBA case study and in many other BRs worldwide, the theory-practice gap. **BR zoning** is frequently not clearly defined and communicated, so it **remains unknown to most actors**, with an unclear demarcation of borders. This has been the case for the RBA since its designation in 1998 until the updating of the zoning in 2019-2020. As in the case of the interface, BR zoning also faces issues of compatibility with broad and sectoral policies which hold inconsistent criterion related to land use planning among them (e.g. Green Morocco Plan and BR designation).

Experience from the RBA case study (and other huge BRs worldwide) shows BRs which are properly conceived in theory (conceptual level) but whose zoning remains non-functional because of lack of

social and economic integration in practice (due to insufficient political commitment, competing financial interests, resources allocated, etc.). An opposite frequent strategy worldwide is to avoid facing this challenge by avoiding highly populated areas with strong economic interests. As avoiding a challenge never leads to solving it, building upon the RBA case study, I argue that great lessons can be drawn from these vast BRs that will allow UNESCO-MAB to advance in the challenge of addressing the theory-practice gap and even rethink and redesign the zoning and structure of BRs of these characteristics.

The original concept of BRs is in fact so deeply inclusive and flexible that nothing prevents rethinking the spatial delimitation of BRs and the internal reorganisation of their management bodies. Functional polycentric management and participatory structures, which is one of the four key ingredients of governance indicated by (Berdej et al., 2016)¹⁵⁸, could contribute to this structural redesign and allow each country or BR to tailor BR management to its particular context. For example, the draft of the RBA 2020 Action Plan envisages several large homogeneous areas very different from each other. In such a context, it could be interesting to rethink innovations in terms of governance bodies. From my perspective, a cluster or federative structure in which there are assigned staff responsible for management and participation bodies in each province at least and coordinated centrally may be an interesting innovation to consider. Alternatively it could be done at the level of homogeneous areas, i.e. landscape-scale management as proposed by MAB in its origins.

6. INCLUSIVENESS, PARTICIPATION

Inclusiveness, in the sense of (Lockwood, 2010), refers to “the (appropriate) opportunities available for all stakeholders to participate in and influence decision-making processes and actions”. Lockwood notes that “this precept is a consequence of the ethical understanding that each person has an equal right to have a say in matters that affect her or his life” and that the governing body must actively seek to engage marginalized and disadvantaged stakeholders.

In the **context of the RBA**, it is not straightforward to assess if all stakeholders have appropriate opportunities to participate in the RBA governing body’s processes and actions when the governing body itself has never been fully implemented nor functional. I argue that inclusiveness in a BR of the extension, population and characteristics of the RBA is a major challenge still far to be properly addressed, as most RBA-related institutions do not actively seek to engage marginalized and disadvantaged stakeholders for the sake of ethics or Human Rights. However, in the RBA there exists a growing tendency of positive experiences, initiatives and projects fostered by cooperation agencies, national or regional institutions and/or NGOs who actively seek to engage disadvantaged stakeholders. As for example, “inspirational pilot experiences” fostered by the forest administration in Ameln region or the PEC-SM project in Argana or Inzerki.

Integration of local communities into planning and management of the BR needs to be further strengthened as they still do not have, in general, a significant role, nor appropriate mechanisms, locally adapted, of inclusive consultation and integration. As a result, local communities unaware of the RBA and without a say in decision-making, do not have developed a sense of ownership towards the BR as they have done towards the Arganeraie territory.

¹⁵⁸ Multi-level and networked governance: (a) Governance from the ground up, involving interactive networks and linkages across multiple levels, with vertical and horizontal links among institutions; (b) Redundant multi-layered, and polycentric social networks in order to better coordinate people, information and knowledge.

The “ethical understanding that each person has an equal right to have a say in matters that affect her or his life” is not integrated in the institutional philosophy and performance of Moroccan administrations and institutions cross-scale, nor in the sociocultural daily performance of people involved. Evidence shows that relationships of power, interests, legitimacy, conflict and concurrence (CLIP) are generally prioritised over ethics; perhaps not in all discourses, but in practice and implementation. Specifically, mindsets that prioritise and associate power to social class or social hierarchies, to money, gender, age, ethnicity, to educational degree, or to a combination of some, tend to equate rights with the former elements and not so much with human rights or ethics. This must be considered as an element in the analysis and discussion because it has a **deep impact over the final governance outcomes**. I argue that this kind of mindsets may be causing the lack of political will perceived by most stakeholders as the biggest constraint to IEG in the RBA.

At the same time, evidence from the RBA case study supports the statement by Batisse¹⁵⁹ concerning the local populations’ acceptance of the BR once they have properly understood its objectives and are fully informed about the implications. In the RBA none of the two local communities studied were opposed to it once it was explained to them, and they had a clear idea of what it was all about. In fact, in the first community, once they understood the concept, they saw it as positive, as reinforcing the conservation of the *agdal* and other traditional and current community norms (i.e. an additional opportunity to protect their territory, as they have been doing for years).

At the **local level, traditional and customary institutions**, the issue of inclusivity intra-community remains also a core challenge. In practice, CLIP relationships at the local level concerning inclusivity follow similar dynamics to those of the RBA.

Deep-rooted sociocultural and religion-driven dynamics prevent in many cases more than a half of the population from actively participating and influencing decision-making processes and actions. Regarding the recent evolution process of traditional Jmaâs towards hybrid forms or modern local associations, it points towards more inclusive formulas. However, current local institutions are still far from being fully inclusive, particularly for youths and women. Findings from this research show significant differences in this respect from one village to another, from one region to another. For instance, in Tiskji they accept women in the ADL. It is an exemplary case and yet far from equity. Young people are absent in decision-making structures. It would be necessary to analyse whether this is due to disinterest or some other kind of barrier. In Tamejloucht, the social and cultural separation of gender roles is still so strong that it is not only a question of opening spaces for women, but also a question of whether women are interested in getting involved and participating.

Overall, cross-scale and cross-level **participatory governance** as defined by Berdej et al. (2016:11-19) is a powerful influencing factor of local governance in this sense. For truly inclusive governance in the fields of conservation and environmental governance, appropriate opportunities and resources to **upwards participatory governance are a precondition** (at the intra-community, interface and RBA level). Some examples of these necessary opportunities and resources are the following: equal opportunities for women and young people to participate, addressing barriers derived from meeting far from where people live, language barriers in written documents and oral interventions or the lack of high-quality simultaneous translation among others.

¹⁵⁹ “Experience shows that when the populations are fully informed of the objectives of the biosphere reserve and understand that it is in their own and their children's interest to care for its functioning, the problem of protection is largely solved. In this manner, the biosphere reserve becomes fully integrated -not only into the surrounding land-use system, but also into its social, economic, and cultural reality-” (Batisse, 1982:107).

7. ETHICS, FAIRNESS

Ethics, morals, and values include fairness or justice, but also include equity, respect, impartiality, equanimity, lack of prejudice and bias, fair treatment, fair relationships of power, and fair-balanced distribution of benefits and costs. **Fairness**, in the sense of (Lockwood, 2010), refers to: (i) “the respect and attention given to stakeholders’ views”; (ii) “reciprocal respect between higher and lower level authorities”; (iii) “consistency and absence of personal bias in decision-making”; (iv) “recognition of human and indigenous rights”; (v) “recognition of the intrinsic value of nature”; and (vi) “the consideration given to the intra- and intergenerational distribution of costs and benefits of decisions”. On top of that, Ethics also refer to fairness of every stakeholder involved (not only the governing body), either that of individuals and decision-makers at any level or that of institutions, administrations and organisations involved at the RBA or local level, and that of each of their staff members (particularly office-bearers). Ethics include the individual and collective recognition and reciprocal respect of values like equity, respect, impartiality, equanimity, lack of prejudice and bias, etc. among all the actors and stakeholders involved at all levels.

Fairness in the exercise of the authority conferred on local leaders and authorities has **two dimensions**. **First**, fairness tends to be clearly higher in customary and traditional governance systems than in institutionally led ones in relation to (i) consideration of current and future generations and (ii) the development of mechanisms to share costs, benefits and responsibilities of decision-making and action. The two local communities stand out by their high level of respect, in the form of good relations and cooperation with authorities inside and outside the community. However, the **second** dimension proves that fairness at the intra-community level is not always present in relation to the distribution of power, the treatment and consideration of individual community members as equals or the recognition of diverse values. Customary governance regimes are also characterised for being the result of local elites' influence and social structures and dynamics, not always inclusive and fair towards certain community groups (e.g. youths, disabled people, women or racial minorities).

For a truly inclusive IEG system within the Arganeraie between the RBA and its local communities, it is not only necessary to assess fairness at the state level but also to challenge some unbalanced intra-community social relationships of respect, power, and interests. Being aware of how challenging this issue may be in a Maghreb context, at least further social and ethnographic in-depth research should be fostered to strengthen inclusivity at all levels, cross-scale.

At the **RBA level**, as mentioned above, the RBA governing body and its personnel have never been clearly defined, fully implemented nor functional, so, again, it is hard to assess **fairness** regarding the RBA governing body. Therefore, ethics and fairness can only be analysed in terms of frequent behaviours and dynamics observed regarding the different main institutions involved in the governing body separately. For example, in institutionally led events concerning the RBA or when any RBA relevant document, policy or project is discussed and implemented, there is reciprocal respect between governors from higher and lower-level authorities and stakeholders, office-bearers and staff are heard and treated with respect. However, **attention given to stakeholders’ views and space and time given to express themselves tend to be in direct correlation to their status or level of power**. As a result, the less powerful stakeholders are frequently unheard in practice, because of a lack of time, space or opportunities allocated to them (intentionally and unintentionally).

Furthermore, I argue that **personal and professional bias** may be present undermining **ethics** in decision-making. But, in absence of no other data than field notes from participant observation to prove the argument, further study focused on this issue would be recommended. In addition, every

individual is somehow biased in his/her way to experience, interpret and communicate, researchers included (Ison and Wallis, 2017). This fact raises the question of which kind of bias instead of presence/absence of it. Which kind of bias may be conscious/unconscious bias, explicit/hidden bias, interests-driven, power-driven, etc. **Analysing bias from this perspective is something lacking** in the RBA and in the international scholarship consulted, and yet an issue of high impact over ethics (as an influencing factor of IEG).

Local communities', rights-holders' and human **rights are acknowledged** by institutions, sometimes considered to some extent (e.g. Arganeraie's legal use rights), **but not always respected**; particularly when they conflict with more powerful strategic interests. This is an issue not exclusive to the RBA but linked with the general level of democracy and the insufficient dialogue and agreement at the grassroots (which hinders the implementation of the BR). However, in Morocco there exists a Ministry of Human Rights and supporting legislation, so legal mechanisms are meant to be in place for dynamics to evolve and become more inclusive and fairer in practice.

The **distribution (intra- and intergenerational) of the benefits and costs** of decisions and actions are not always identified and considered. Certain consideration is given in policy documents, but final outcomes remain unbalanced and unfair in this respect. The **short-medium term is clearly prioritised in decision-making regarding the RBA** and environmental policies in general in Morocco. This is driven by cycles set by programmes and projects, politics and/or funding. The **intrinsic value of nature** is recognised in some policy documents and legal text but frequently not respected when it conflicts with more powerful and instrumental strategic interests.

Open and transparent recognition of self-interests (individual and collective) prior to any negotiation or agreement is a must, yet it is absent frequently (at all levels and among most actors). This, together with unfair relationships of power almost always present, impact (formally and informally) equity, ethics, and fairness. I have no reliable data pointing towards **corruption** (i.e. an extreme case of unfair relationships of power and interests) as a relevant factor in either the RBA in general or the two local communities studied. However, I agree that for success in the implementation of IEG in a BR, absence of corruption is a must, and I cannot claim it is absent in the study area; so further analysis would be necessary in this respect to properly assess it.

8. MINDSETS & ATTITUDES, TRUST

Mindsets are related to the frameworks of ideas¹⁶⁰ that each actor (either individuals, organisations, institutions, or the members that comprise them) contributes to a given situation of concern, discussion, etc. It is worth considering that every actor has his or her own histories as practitioner (e.g. RBA managers, public officers, researchers, developers, NGOs, rights-holders, civil society, local people, etc.). **Attitudes**, in turn, refer to behaviours and opinions resulting from prior mindsets, together with the set of family, cultural, social, and ethical values of the actor in question, as well as their motivations, expectations and certain emotions.

Mindsets and attitudes that I have identified as relevant influencing factors of IEG, and already present in the **RBA-Local communities' interface** are the following: non-judgement or prejudice "of the other", non-consideration of stereotypes, no resentment and level of empathy. Also institutional and

¹⁶⁰ As previously mentioned (Fig. 101), frameworks of ideas may frequently be economic wealth and development, modernity, sustainability, conservation, material and immaterial cultural and natural heritage and know-how or classical sectoral policy approaches.

individual capacity (i) to deal with uncertainty, (ii) for facilitation, mediation, building trust, sense making, managing conflict; capacity for bridging organisations, projects, groups, or ideas; and capacity to interact with others, from the knowledge and use of their language and “languages” to the knowledge and mastery of their tools (as a precursor of multi-layered social and institutional learning and co-production of knowledge). Individual and/or collective willingness to offer support (e.g. support in drafting projects and access to funding, or support in becoming local allies of external institutions or organisations) and the actual existence of this mutual support is one of the attitudes and strengths detected on the global-local interface. The same applies to attitudes such as personal commitment and mutual advice and guidance.

Additionally, something present in both **local communities**, but most especially among the leaders of both communities, that I have named “collective and individual intelligence” includes leadership plus the following sub-factors: capacity for hybridisation (adaptability, flexibility), a simultaneous attitude of non-conflict and non-passivity, of inclusive proactivity (e.g. search of opportunities and focus on generation of synergies and networks, among others), self-commitment and self-accountability.

In their words, it would be something like: "we want the best for our people, for our families and for ourselves", "there are many things that do not work as they should", "but we are not going to just complain, we are not going to fight", "we are going to focus our efforts on creating bonds of collaboration, looking for positive initiatives for the people, generating projects and opportunities, doing our part, and we will see what God brings".

In both communities, it is particularly evident the close collaboration with the forestry administration, and the good harmony and collaboration with the Caïdat. But they are also open-minded towards "the other" (i.e. tolerant, open to new ideas, receptive, unprejudiced), for example, the present willingness to rethink certain schemes, paradigms or past stigmas, clichés or stereotypes¹⁶¹. In both communities, it is generalised the reflection that it is better to look at individuals (the human quality of each person) than to continue criticising and complaining about institutions or social groups as a whole.

Yet, **reality is still far from an ideal situation of IEG**, within the RBA and within numerous BRs worldwide. But why? It is not just a question of inadequate practices or administrative habits. Specialised literature (Matar, 2015; Pool-Stanvliet, 2013; Stoll-Kleemann, 2007; van Cuong et al., 2017) points out towards a few highly influential factors in the success or failure of BRs and authors like (Lockwood, 2010) or (Berdej et al., 2016) also identify core factors and principles of good and effective governance in protected areas and community-based regimes. However, **these factors are not the only ones explaining governance outcomes**.

Common findings from the RBA and from the two local communities show that, in most cases, formal and informal dynamics with a positive impact over the RBA, the local governance and/or the interface are referred to **relationships of trust, collaboration, alliances, or dialogue** mostly. And such relationships are in turn **driven by underlying sub-factors of a more behavioural and cognitive nature** (that I have grouped under “mindsets and attitudes”), together with others already addressed (like ethics and fairness, respect, transparency, leadership, sense of belonging or effective information sharing), that were common elements to both local study sites plus to the individuals and organisations responsible for the positive informal dynamics at the RBA level. Taken together, these elements have proven to be crucial for IEG, for local governance and resilience, and have also proven to play a key role on the interface between local governance systems and other institutionally led approaches like the Biosphere Reserve.

¹⁶¹ Two frequent clichés or stereotypes are (1) that of militarised foresters, synonymous with the devil and (2) Arabs as those not to be trusted, not to be married to; etc.

Besides, **trust** relates to the confidence or reliance that actors have among them, to the personal belief or feeling that other/s have good intentions, are honest and will not harm them (or their community, family, interests).

Trust has been acknowledged in the literature (Hotte, 2020; Stern and Coleman, 2015) and corroborated by the present research as one relevant factor to IEG. Trust itself and relationships of trust are precursors of other necessary relationships such as dialogue, negotiation or agreement, collaboration, conflict management and resolution or learning and co-learning processes, necessary elements for effective and inclusive environmental governance. An in-deep analysis of the mechanisms that enable or hinder trust in the area and subject of study is beyond the scope of this research, although it is of high interest. However, I can state that trust was present in all the informal positive dynamics fostering IEG at the RBA and institutional level and at the local communities' level described in the results section. I have also identified some of the most evident **elements and factors on which trust depends on**. Namely, elements such as perceptions, past experiences, cultural drivers, self-character or intuition; and factors such as transparency, effective information sharing, fairness, respect and attitudes (e.g. willingness to offer support, non-judgement or prejudice, non-consideration of stereotypes, no resentment or high level of empathy).

9. CONNECTIVITY

At the institutional level, **connectivity** in a biosphere reserve requires: (i) effective coordination within and between levels of BR governance; (ii) coherence in broad policy intent and direction and with respect to the BR; (iii) coherence within and between levels of BR governance; and (iv) effective liaison between BR authorities and sectoral organisations such as those of tourism, forestry, agriculture policy or planning and management" (Lockwood, 2010). It also requires adequate MAB networking and functional national MAB Committees.

A focus on the **global-local interface** may require what Benneworth et al. (2002) call **strategic connectivity**. That is, a sort of functional connectivity that (i) includes institutional arrangements linking (vertically and horizontally) formal and informal conservation and governance institutions and processes; (ii) which allows "actors to address shared problems in a concerted fashion"; and (iii) that allows for building shared recognition of interdependencies among BR, *agdal* and local governance issues cross-scale and across regions (Benneworth et al., 2002). Connectivity focused on the local community level and on the global-local interface also requires: (i) effective coordination within and between social/conservation organisations and the BR governing body and managers; (ii) effective coordination within and between local and regional sectoral organisations, rights-holders and local populations; (iii) mechanisms in place and long-term resources for effective coordination to take place at the different scales; and (iv) adequate networking (formal and/or informal) among stakeholders and decision-makers cross-scale.

Connectivity **within the RBA** is one of the key challenges to be addressed, because insufficient or even lack of effective coordination cross-scale. Inconsistencies between sectoral institutions prevent them from building effective liaison among key authorities related to the RBA. The lack of coordination between BR managers, local decision-makers or sectoral administrations is common to most South Mediterranean BRs (IUCN, 2015, 2012). The RBA governing body's direction and actions are consistent with directions set by higher-level governance authorities, but they are not (nor can they be) with the set of inconsistent sectoral policies with direct effects on the RBA territory. Cooperation of stakeholders and decision-makers among them and with authorities (upwards and or downwards)

cross-scale is sufficient and effective in some cases (e.g. NGOs, developers, consultants) but could be enhanced in others (researchers, politicians). Finally, an influencing sub-factor at the BR level relevant for the North African BRs is the need for an adequate MAB networking and functional national MAB Committees.

At the local community level, connectivity and collaboration is not really an issue. Even in a region of high emigration rates like the Anti-Atlas, community members living abroad remain in close touch with each other for any relevant issue regarding local governance and particular interests. Local support, collaboration and cooperation networks continue to be a strength nowadays despite all changes. However, local connectivity with external organisations and institutions in the sub-regional and regional levels continues to be a challenge for many local communities within the RBA (despite it being a strength of the two local communities studied). Reasons that may explain it are, the lack of mechanisms in place and long-term resources for effective coordination to take place at the different levels; but also the lack of self-commitment, leadership, proactivity or capacity of some local communities may be hindering their networking and external connectivity.

10. RESILIENCE

(Gunderson and Holling, 2002)note that “**resilience** refers to the amount of change or disturbance that can be absorbed by a system before it is reconstituted into a different set of processes and structures”. Adger (2000), as cited in Brunson (2012:347), defined **social resilience** as “the ability of groups or communities to cope with external stress and disturbances as a result of social, political, and environmental change”. A key aspect to analysing resilience, as noted by (Berkes, 2016), involves looking at how social-ecological systems react to environmental and community or social-led shocks.

Social sources of resilience, such as social capital (including trust and social networks) and social memory (including experience for dealing with change) (McIntosh, 2000), are essential for the capacity of social-ecological systems to adapt to and shape change (Folke et al., 2003) as cited in (Folke et al., 2005).

In the Arganeraie, the resilience issue requires clarification and framing, whether we are talking about the RBA as such or the Arganeraie ecosystem itself, or whether we are talking about specific areas or regions within this huge area in which the argan forest is present. In any case, **the term “system” needs to be further clarified** since within the Arganeraie various relevant systems can be defined with regard to the research topic and their resilience. In other words, resilience is different depending on the specific definition of the system under study. It can be the RBA itself or the *agdal*, as different governance systems; but it can also be the Arganeraie as a complex social-ecological system, or just a certain homogeneous subsystem within the Arganeraie (e.g. valleys, High Atlas mountains, Anti-Atlas mountains, etc.).

The resilience of a given system is also **highly dependent on the spatial scale and the time scale** considered. In this sense it can be considered for example that in the Arganeraie region, resilience was high for the State-driven and the *agdal* as governance systems and in the past. While nowadays, resilience is low for the RBA and the *agdal*. As a result, many (stakeholders, people) ask and militate for legal support for the RBA and for the *agdal*. Understanding both governance systems at present and identifying convergences and synergies of the so-called global-local interface between them might enhance resilience, because evidence proves the potential complementarity of both systems cross-scale in the whole Arganeraie social-ecological system.

If we consider the **RBA** as an institutional environmental governance system, resilience is low at present because the governing body is not fully functional and thus, neither the RBA governing body nor its related institutions appropriately address the elements required for high resilience.

If we consider the **agdals** as a customary environmental governance system, its intrinsic resilience and capacity for historical adaptation to internal and external disturbances of all kinds is no longer there and resilience is low at present; mainly because of external threats, mutations or dynamics of change that escape from the local influence. Most of these dynamics or changes are a consequence of global change. Evident and generalised examples of this may be digitalisation, modernisation, changes in aspirations, working sector and opportunities, etc. (as described in the results' chapter). The capacity of local people to readapt *agdals* to new contexts is strongly conditioned to the fact that "their people" remain linked to these territories and these systems retain a certain instrumental usefulness in the new context/s). **Local resilience of customary governance systems like *agdals* no longer depends only on local communities'** actions and decisions because global change effects have permeated until local micro-scales globally. A consequence, shared by customary governance systems worldwide, is the current weakening and disappearance of many of these traditional systems, despite their historical resilience, when they lose their utility or fail to adapt appropriately to new circumstances and contexts.

However, if we consider in the **local scale** not only the *agdals* system but the set of various local strategies to manage their communities at present, the resilience is higher because the following elements are still present:

- A culture of intentionally learning from experience and absorbing new knowledge.
- The flexibility to rearrange its internal processes and procedures in response to changing internal or external conditions.
- The utilization of adaptive planning and management processes.

The analysis and discourse around **resilience of *agdals* and local governance systems** at present time is a double-edged sword, because of the risk of misunderstanding the substantial differences between the past and present context of local communities. Which is linked with the factor "shared understanding" and with previous remarks concerning "intrinsic resilience" and the "current context of historically unprecedented Global Change".

In the case of local and customary governance systems in the arganeraie, past and present contexts of local communities make a difference in the level of resilience and how we describe it. While in past times, *agdals* in the arganeraie could be equated to rural local communities because they were mostly closed agro-silvo-pastoral systems; **at present *agdals* and local communities should no longer be equated** because *agdals* remain agro-pastoral systems while local communities managing them have become more open systems whose activities and income exceed the local agro-pastoral activities.

Bearing this in mind, I claim that resilience of the *agdals* system in the arganeraie is lower than 30 years ago, but local governance systems remain highly resilient at present due to their high flexibility, adaptiveness and capacity for hybridisation with changes imposed from the outside (e.g. legal, economic, social, etc.). As mentioned above, **the prerequisite for this is that local people remain linked to their communities and these customary systems retain a certain instrumental usefulness in the new context.**

Nowadays, it is the lack of a shared vision at the regional and national scales (sometimes also at the local level) which threatens the system by lowering its adaptiveness. A second major external threat

to local resilience is the unprecedented acceleration of the pace of change regarding global change (e.g. social, cultural and digital mutations, environmental change and climatic risks, economic dynamics), which also constraints the adaptation time of local communities and social-ecological systems, lowering their resilience exponentially and menacing them.

Finally, if we consider the potentialities or opportunities offered by both approaches to environmental governance in a near future, resilience could be easily enhanced through processes of co-learning and collaboration which could benefit from the evident potential complementarities of both governance systems. This, coupled with formal instruments and mechanisms, such as legal frameworks, simultaneously adequate to MAB provisions and local customary laws.

11. SENSE OF BELONGING

Sense of belonging refers to the individual and collective feeling of connection or attachment to a certain territory, place, community or group; also to the emotional need to fit or feeling of being accepted by a given group or community. It may involve the identification to a given group of people or community with whom you share values, customs and culture (i.e. identity); and it may also involve the willingness to positively contribute to the group through your actions. In the context of this research, the sense of belonging is also related to the sense of place and the sense of community and common good, particularly at the local communities' level.

At the local level, practice-based customary regimes tend to hold high popular sovereignty, legitimacy and mutual conservation values linked to economic and livelihood outcomes. This is also the case for the two local communities studied. The individual and family commitment to the community and the “common” rules, resources, lands, responsibilities and rights are a key factor of local governance. As noted in the study area chapter and corroborated during the ICCA resilience workshops in both local communities, identity and attachment to their territory is high in both cases; despite differences exist between them linked mainly to cultural and historical issues. However, it must be acknowledged the rise of individualistic values linked to dynamics of socio-economic change and globalisation that risk eroding the “commons” and sense of community, particularly evident in the second local community studied and a large share of local communities within the RBA nowadays.

At the RBA level, the influencing factor “sense of belonging” takes on a different nuance. Individual identity, attachment to their birthplaces and roots of many decision-makers now living in urban areas have an evident influence over some decision-making processes, allocation of scarce resources, inclusion/exclusion of certain areas or municipalities and implementation of initiatives and projects. It tends to be a source of bias linked to ethics, relationships of power and interests, support and inclusivity among other factors. Further analysis is needed in this respect to adequately assess an influencing factor that has rarely been considered in scientific literature on the field.

12. SHARED SPHERE

The factor “**shared sphere**” refers to the existence or not of a common arena of mutual recognition among the actors involved cross-level, which comprises (i) a shared understanding of the key terms mobilised (e.g. biosphere reserve, local community, *agdal*, participation or co-management, among others) and a certain degree of complementarity and compatibility between the different ideologies, mindsets and worldviews present through the different actors involved; (ii) a shared language; (iii) shared concerns and interests; and (iv) a shared vision and shared efforts towards it.

The **shared understanding** and differentiation of the **Biosphere Reserve concept** among the RBA decision-makers, stakeholders and local populations is lacking. In addition, there is lack of institutional sense of ownership of the BR concept and MAB provisions cross-level and multi-actor (sometimes because of the former lack of understanding, but others linked to lack of interest or even competing interests). Local understanding of the BR concept and MAB provisions is totally absent in the RBA.

For success, the biosphere reserve concept needs to be clearly understood, applied adequately (van Cuong et al., 2017). However, evidence from both (i) specialised scholarship and (ii) the RBA case study, demonstrates that the term “biosphere reserve” has been misleading to many people in several respects. Evidence from the RBA case study supports the statement by Stoll-Kleemann (2007) arguing that the fact that only biosphere reserves can accommodate semi-natural ecosystems and even agro-systems equally well, has been misinterpreted in all cases of common misunderstandings.

In addition to the “conscious” actual misunderstandings, there are other operating in the subconscious level or even fake intentional misunderstandings who may be driven by particular interests far from the conceptual objectives and provisions of UNESCO-MAB. In this regard, the RBA stakeholders claim for a shared common understanding or agreement over several key concepts related to the IEG in the Arganeraie, among them, the BR concept (see chapter 1 of the results section, subchapter 1.2.3. perceptions of governance in the RBA).

The **shared understanding** of the **Local Community and Agdal terms** are also essential. These two terms need to be clearly understood and shared cross-scale through the local, regional and national socio-economic and institutional panoramas. At present, there still exists a sound local understanding of the *agdal* concept, governance system and rules even for the younger generations. However, because of its high adaptability to the context, each *agdal* may be different and, thus, differently perceived by its rights-holders. In addition, *agdals* of the arganeraie are clearly different from other types of *agdals* (e.g. well-known pastoral *agdals* of the High Atlas mountains), particularly after the recent and deep changes in the socio-economic dynamics of the argan sector (in the international, national and regional levels). Since recent Argan sector developments go beyond the local and sub-regional levels, and they have a strong impact in the redefinition and relevance of the *agdal* system in the Arganeraie, the shared understanding of the *agdal* concept should not only be restricted to the local level. The issue here is the **risk of misunderstanding the *agdal* concept by stakeholders or decision-makers external to the communities themselves** (by, for instance, over-simplifying or making the historical concept rigid).

In parallel to the **shared definition** of *agdal*, is the need for a shared (or at least no contradictory) definition **of local community** within the Arganeraie. Different definitions of local community provided in the community conservation literature were presented in the conceptual chapter¹⁶² (Armitage et al., 2020; Borrini-Feyerabend and Hill, 2015) and analysed in detail in the results, so I will not enter into detail again. Yet, it is relevant to grasp the fact that, at present, most of local communities within the arganeraie are no longer restricted to the local scale (i.e. douar or municipality levels); therefore, the maxim “a local community can only be self-identified” (Borrini-Feyerabend and Hill, 2015:184), becomes crucial. There is an impressive lack of social research in this respect.

¹⁶² A community is “an inclusive construct for conservation science and practice that includes diverse communities (community of place, of practice, of interest, etc.), groups (producer groups, cooperatives), and/or networks (alliances among indigenous people [rights-holders] and external allies)”

It is a must a clear, precise and transparent agreement over which core terms, such as participation or co-management, mean and imply in the context of IEG and the global-local interface. **Agreement of decision-makers, key stakeholders and key local representatives over core terms shall avoid misunderstandings and manipulation in decision-making, dialogue and agreement processes.** This agreement is lacking nowadays cross-level within the RBA, and by a multiplicity of actors. As mentioned above, sometimes this lack of agreement over certain concepts and terms may be seized by some actors driven by particular interests far from the common goal of IEG.

Finally, as noted in the results chapter, the question of **language** (i.e. Tashelhit, Arabic, French) and “languages” (i.e. fair, transparent, inclusive, non-hierarchical, non-technical) is a baseline need at RBA and local levels. It is rather obvious but neglected on many occasions, that a fair, inclusive and effective dialogue process cannot take place in the absence of a **shared language** to communicate among the actors concerned. Co-production of knowledge cannot take place either in the absence of a shared common language that everyone understands. The RBA case study has shown how this factor may become a tool to exercise power, to manipulate debates and to give priority to certain types of knowledge and actors over others. Once again, issues of ethics and attitudes play a key role as underlying factors closely linked to the others.

Once achieved a shared understanding of the key concepts under discussion, there is the need for a **shared vision** (multi-level and multi-actor) regarding the territory of the Arganeraie (including the RBA and the *agdal* and local governance systems); or at least a territorial project supported by a large share of the population, flexible, sensitive and **inclusive to the main concerns, interests and needs of the stakeholders and most vulnerable groups**. To identify common shared concerns and interests that allow for shared collective and individual efforts towards a common vision is something potentially feasible but still lacking in the RBA study case. Yet, it is essential to build a strong interface and foster a truly IEG model.

13. SUPPORT & RESOURCES, RESEARCH

The “**support and resources**” factor includes both material and non-material support and resources required by the BR governing body or the local community to fulfil its governance responsibilities in the short, medium and long-term. That is, material support comprises mainly adequate funding, resources and staff or human resources guaranteed in the long-term and properly allocated. In turn, immaterial support and resources include legal and technical support and refer to knowledge and training or capacity building.

At the RBA level, adequate resource allocation guaranteed in the long-term is another of the critical variables for implementing successful conservation and sustainable development in BRs worldwide (van Cuong et al., 2017). In this respect, I argue that “adequate resource allocation” must include not only appropriate and sufficient funding for the BR, but also (i) adequate capacity and resources (multi-level and cross-functional) and (ii) suitable (qualified) and sufficient staff in the BR. In line with findings from the RBA case study, Stoll-Kleemann (2007) stated within the Gobi project: “The staff and land users in biosphere reserves must also be better qualified... This has hardly been the case so far”. The example of the RBA shows that there is a lack of social and multidisciplinary profiles capable of adequately addressing the challenges intrinsic to the concept of BR (i.e. balance between social, economic, and environmental issues), within the institutions in charge. In addition, it is not only a question of professional background and experience of decision-makers or an issue of having enough

professionals being part of the BR (which in the case of the RBA is clearly insufficient or even lacking). It is also a question of soft skills (e.g. negotiation, strategic planning and vision, leadership, facilitation), attitudes, personal profile, ethics, and values as mentioned above. Staff, land users and decision-makers in BRs must be better qualified, in accordance with the specificities and challenges of the BR concept implementation (balance between environment, society and development), cross-scale.

The RBA lacks sufficient funding, exclusive to the BR, guaranteed in the long-term and properly allocated according to (inclusively) agreed priorities. It also has insufficient capacity and resources (cross-functional and multi-level) and insufficient and/or unqualified staff in the biosphere reserve.

At the local level, the lack of legal, financial, and technical support may threaten local and customary governance regimes worldwide. Adequate funding and resources guaranteed in the long-term and properly allocated is a need for local development within the Arganeraie and abroad. **Adequate technical support** in the form of capacity building in fields like the legal arena, access to funding, writing projects and advocacy documents, etc. **may be a lever of change for local communities**. In both local communities there exists this kind of external support, but it is still insufficient, as shown in the ICCA resilience workshops' results. Community members insist that **the support received (of any kind) must be adapted to their needs**. In this respect, who is entitled to decide on what the local needs are and what kind of support a community needs is a question that is often overlooked or disregarded.

Research involves long-term research, monitoring and evaluation strategies and initiatives properly adapted to the BR's needs and the local communities' needs. It also related to the interactions between management and research bodies (i.e. RBA policy-research interface) and local communities and researchers (i.e. local-research interface).

At the RBA level, and since BRs worldwide are considered as "living-labs", long term research and monitoring is an additional influencing factor recognised internationally. However, most North African BRs encounter difficulties in the interaction between management and research (IUCN, 2015). Additionally, the RBA lacks (i) sufficient and appropriate social research and (ii) sufficient long-term research and monitoring strategies and initiatives **properly adapted to the BR's needs and those of its stakeholders and local populations**.

At present, the RBA policy-research interface is weak; difficulties persist in the interaction between management and research bodies. There is a need for an agreed, inclusive, and functional policy-research interface, which allows for a coordinated research agenda properly adapted to the BR real priorities. Monitoring and evaluation of BRs for an adaptive management, through appropriate tools well adapted to the BR concept, is also crucial and lacking in the RBA and in most North African BRs.

At the local level, the above-mentioned need for social research persists, not only regarding the RBA or conservation policies, but also the evolution and extent of change in social and cultural trends and dynamics in development and conservation, including those of customary systems and institutions. As above, the local-research interface is weak, difficulties persist to achieve a balanced (non-hierarchical) interaction between (i) locals and local knowledge and (ii) academics and scientific knowledge.

1.1. FINAL CONSIDERATIONS REGARDING COMPLEXITY, FRAMING CHOICES AND GOVERNANCE

First consideration. The importance of acknowledging complexity, uncertainty and intrinsic bias.

The fact that reality is complex on many levels and in many different ways is widely accepted today, especially at the scientific level. A second fact that is also evident to many today, despite being often overlooked, is that the human component is not separable from the rest of the non-human components of the global system. The entire scientific corpus that has been tackling the study and understanding of the so-called social-ecological systems for decades, including a large part of the environmental sciences in a broad sense, research into climate change and global change, biodiversity, political ecology, ecological economics, environmental ethics and a long etc., have already been warning for several generations of the unavoidable task of recognising the complex and indivisible nature of the planet and its socio-ecosystems.

However, on the one hand, this remains a marginal, undervalued, non-mainstream scientific field. And, on the other hand, we continue to overlook or avoid acknowledging the relevance of human psycho-cognitive limitations (including, of course, scientists, intellectuals, legislators and governors of all cultures and societies around the globe). I argue, in line with other scholars (Abson et al., 2017; Buijs and Lawrence, 2013; Cowling, 2014; Restall and Conrad, 2015), that ignoring this fact is already an entry barrier, a failure of grassroots focus with profound implications of knock-on effect on any further reflection, analysis or action.

Failure to recognise consciously and explicitly that we, as humans, have certain limitations only makes the challenge of understanding and relating as well as possible to our exterior even more difficult, at any imaginable scale (from the most local, to the global or planetary). Some of the facts most frequently ignored or hidden in the field of governance and research on governance are: (i) that we have limitations in dealing with complexity or uncertainty (Merry, 1995), among others; (ii) that the concept of objective science is just another (frequently western) mental construct; (iii) that by the mere fact of being humans and having a limited and multifactorial capacity to understand, perceive and relate to our surrounding, we are already exposed to bias and judgement; (iv) that on many occasions they are our own (individual and collective) fears, in the broadest and deepest sense of the term (e. g. fears of not being able to control, of not understanding, of external judgement, of external domination, of uncertainty, of not being capable, of not surviving) that make us reflect or act in certain ways based on that subjectivity and not others.

Just recognising that this is so, helps not to lose focus and perspective, to be more honest and to recognise (minimising judgement and bias and maximising empathy) that it is by accepting our limitations and subjectivities that we can best deal with some of the greatest challenges that our current uncertain and complex reality confronts us with, at whatever scale imaginable.

Second consideration. The importance of framing choices regarding inclusive environmental governance.

In this sense, Lakoff (2010:71-72) notes: "All thinking and talking involves 'framing.' And since frames come in systems, a single word typically activates not only its defining frame, but also much of the system its defining frame is in. Moreover, many frame-circuits have direct connections to the emotional regions of the brain. Emotions are an inescapable part of normal thought. Indeed, you cannot be rational without emotions" (Lakoff, 2010 as cited in Ison and Wallis, 2017).

Returning to the issue of environmental governance and governance as a contested concept, Fukuyama (2016) noted how discrepancies around the concept, uses and understandings around

governance have stimulated important debates, which still point to the need for further research. The author argued that the two apparently opposed meanings of governance¹⁶³ are in fact linked. In this sense, this thesis has contributed to advancing the understanding of this link. Not only by demonstrating that different conceptions of governance or a governance system may be linked in fact, but also by highlighting that first, most of the underlying common factors characterising the interface between them are, in fact, behavioural and/or emotional; and second, that it is relevant to not forget that institutions and communities are in the end made up of individuals and, thus, we should not undervalue the individual vs collective facet behind each situation, result or conception.

Lakoff's insights are key as they draw attention to the fact that it is not possible to avoid the circumstantial and embodied nature of our engagement with the world, for which each of us must take responsibility (Lakoff, 2010). "Failure to unpack framing assumptions when working collaboratively (either governors, researchers, decision-makers or practitioners) can undermine governance effectiveness", including how governance is framed (Ison and Wallis, 2017).

Rose (2018) invites to not forget that an 'extended peer community' of decision-makers (policy-makers, practitioners, stakeholders) are present in multi-layered governance structures. Rose warns about the risks of maintaining an academic scientific perception disconnected from reality and unable to address current socio-ecological challenges if researchers fail to develop a conservation narrative that considers worldviews, values, beliefs and interests as key parts of IEG systems.

What this thesis has contributed to is by no means exhaustive from a conceptual point of view. It is instead an additional approach, inclusive of different optics, frameworks and even disciplines. However, in the specific context of research and fieldwork, it has been effective, has made sense, has made it possible to explain, show and understand reality in a meaningful way; and therefore, it is an enriching approach and a relevant contribution to the field. The research has been focused on a very specific time scale, 2018-2019 (although necessarily referring to the past and the future); and, above all, on different spatial scales simultaneously, as a central point of the whole discourse, since these spatial scales are the ones effectively impacting the territory and its people in a dynamic and multidirectional way at every moment. To ignore this is to ignore a central part of reality and to simplify the discourse too much, at the risk of oversimplifying it. Authors like (Berkes, 2016) have highlighted the relevance and implications of considering the interrelationships, processes and phenomena occurring across and within multiple scales (e.g. regarding resilience, community conservation, governance or perceptions).

Third consideration. The importance of an inclusive, inductive methodological research approach (to locals and to data quality)

Considering first, the experience, results and lessons learned from large development programmes (with participatory approaches) such as the PCDA (GIZ and DREFLCD-SO, 2002) and the Arganier project (Kenny et al., 2009), which have left a deep imprint on the Arganeraie territory (positive in many senses); and second, the results, findings and lessons learned from this thesis (derived from the integrative methodological approach adopted), I come to the following considerations.

A) First, it is advisable to come to the study site with an open mind (even being naïve), to ask openly, with no rush, without judgement, being present and engaged to engage with people. This must be

¹⁶³ On the one hand, governing without government (governance as the regulation of social behaviour through networks and other non-hierarchical mechanisms). And on the other hand, traditional state-based public administration.

done bearing the underlying objectives in mind, and to share them in the most transparent and honest way possible with the participants; yet remaining very flexible and adaptable to whatever comes up. The positive outcomes of the initial prospective meetings in both communities and with RBA key informants are examples of this.

To acknowledge what different people think about a given topic, reality, project or concept, in addition to the enriching information obtained, generates spaces for collective reflection and individual reflection (in each of the participants, including the person asking the question). Individual and collective reflection that can later be informative and beneficial for the group and not only for the researcher (e.g. resilience index workshops' outcomes). It also generates trust. This trust ensures that subsequent information is of the highest quality and improves communication to sometimes surprising levels, overcoming barriers beyond languages, cultures and social hierarchies.

The ethnographical and participatory research approach adopted in this research became the trigger, the crystallising element from which spaces for reflection and debate were generated at the heart of the community around topics relevant to them.

B) Second, it is advisable to build on what already exists, on the elements, initiatives, ideas, dynamics and values that already exist on the field and which are positive and enriching (e.g. in this research, it was the initial collective reflection what allowed to generate the necessary spaces and trust to adequately detect these crystallising elements or potential triggers). Integrating scientific and local knowledge in this way, may lead to a process of co-construction between local people, for example, and external people (developers, researchers, managers, etc.) who propose a new idea or project highly enriching for all parties involved (e.g. endogenous dynamics fostered in Ameln, Argana, Tiskji or Tamejloucht).

In my experience, once each of the parties, each of the actors (with trust, transparency, honesty, ...) has verbalised: first, their own definition of the terms at stake, say in the case of a given project (e.g. *agdal*, governance, biosphere reserve, local development, local community, etc.); second, their individual and collective interests; and third, their vision or opinion of the issue, their proposals, etc. It is then that all the necessary elements are on the table to detect what already works well (in the "ways of doing" of each actor, LC, RBA, etc.), what does not, what could be improved without conflict (once considered all the elements from all the parties) and what can be learned from the other.

This said, **to answer the research question** three remarks must be considered in advance in the fields of politics, research and behavioural social sciences.

POLITICS

Politics are believed to be a crucial dimension of governance, as it is "basically in political arenas and public spheres where the 'destinies' of social fields ... are decided" (Kooiman 2016 as cited in Partelow et al., 2020:8). As environmental issues are also political, everything related to people and their individual and collective psychology (e.g. power games, relationships of (dis-)trust, interests, fears, alliances, worldviews) will affect the fields of environmental governance, environmental conservation, biodiversity or climate change¹⁶⁴. If all these fields have one characteristic in common, it is the human-nature dimension.

¹⁶⁴ Two major "global coupled crises" facing humanity today as pointed out in the introduction to this thesis: Biodiversity and Climate Change.

RESEARCH

Much progress has been made in each of the different disciplines and many of the conclusions have been a call for interdisciplinarity (understood, however, in very different ways). What I propose in this research (with the profile of an environmental scientist but with an inductive empirical approach) is, first, to listen. Starting from a specific but sufficiently open research question, then “go into the field” and ask. Ask our research question (1) with as open and empathetic a mentality as possible; (2) avoiding as far as possible the biases that we all have (e.g. personal, disciplinary, professional, cultural, etc.); (3) explaining ourselves; (4) making ourselves and our research known in a transparent and sincere way. And, from this starting point, engage in dialogue, reflection and exchanges that are enriching for all parties, obviously allowing us to contribute to the initial research question. Moreover, this should be done at different scales, considering that the more scales considered and the more profiles, sectors and opinions included, the better. I dare not to claim that this is the only way to detect and generate synergies, but I can claim that it is a good way to do it, a coherent way, and a way that in the context of this thesis has succeeded.

BEHAVIOURAL/COGNITIVE SOCIAL SCIENCES

When people get to know and empathically recognise each other (beyond political class, job, social status, etc.), they perceive each other's strengths and weaknesses, fears, etc., and necessarily much of the animosity, much of the rejection is mitigated. Because when two people connect on a personal, human level, entering into conflict becomes difficult and the hostility and fear diminishes. In the current context of frequent concurrence, conflict and "violence" (physical, verbal or domination), it is still important to understand that there is something in every human being that unites us all, and if we had more internalised this feeling of unity, many conflicts would naturally fade away. It is essential to further and better advance in the fields of behavioural, cognitive and environmental social psychology, affective neuroscience or emotional intelligence, among others, so that we can better understand and manage these hidden conditioning factors in many of the human and social behaviours that ultimately affect interpersonal relationships and human-nature links (Abson et al., 2017; Buijs and Lawrence, 2013; Cowling, 2014; Restall and Conrad, 2015), and that go beyond cultures, countries and disciplines or topics.

Ultimately, if the three former considerations are acknowledged and adequately faced, an inclusive environmental governance model (IEG) may be addressed for the Arganeraie Biosphere Reserve and for two of its local communities through processes of co-learning and co-management.

The key elements to IEG are there: the individuals willing to foster the necessary synergies, the tools, knowledges, opportunities to collaborate and succeed and the informal positive dynamics able to inspire and boost the whole process. However, inclusivity is still far from being achieved, not because it is not feasible, but because the tipping point has still not been reached. The variety of influencing factors analysed should be progressively addressed at the bottom-up and top-down scales. But most importantly, the underlying and common factors highlighted in this thesis and the three former remarks should be further acknowledged and integrated.

2. STRENGTHS AND LIMITATIONS

2.1. STRENGTHS

RESEARCH TOPIC and STUDY SITE

This thesis aims to provide the broadest and most integrative overview possible of a **research topic** that has **hardly ever been addressed to date**, from the perspective of the interface between two opposing but complementary governance systems: UNESCO Biosphere Reserves and Community Governance Systems or ICCAs.

The research has been conducted in the Maghreb, **one of the most underrepresented regions** in the scientific international panorama regarding the research topics addressed.

This research, which is just one more perspective, contributes to enrich the existing debates, particularly in the geographical context in which it has been carried out, i.e. a region in which the absence of socio-environmental research has been flagrant since historical times. Also in a global context where the absence of social-environmental research is also an issue (acknowledged by multiple disciplines from SES and BR to community-based governance).

RESEARCH DESIGN and DATA QUALITY

This thesis is characterised by the **inductive approach** and the marked (though not exclusive) **ethnographic and participatory nature of the fieldwork, from a multi-scale perspective**. Specifically, it has been the open, inductive, exploratory and participatory approach that has allowed to detect some of the articulations, interrelationships and underlying factors presented in the results and discussion, often underestimated in the mainstream conservation models and research (due to their extreme complexity, a narrow focus, or conscious and unconscious biases).

The intrinsic complexity of the research topic and the empiric multi-level approach and design have been simultaneously enriching and complex to deal with; thus, a strength and a challenge. It should not be underestimated the challenge of dealing simultaneously with the village-douar level and the national/regional/sub-regional levels in a biosphere reserve of such immense dimensions and heavily populated. Even less so when it is done on such a complex research topic as empirically exploring synergies between two hitherto unconnected governance models. However, it was a necessary and relevant contribution worth undertaking even though it was a single one.

The particular and rather unorthodox **combination of research methods**, may initially seem unusual but **has yielded excellent results** in the context of the present research. By "**context of the present research**" I mean aspects and challenges such as the following:

1. The challenge of dealing simultaneously with the village-douar level and the national/regional/sub-regional levels in a vast BR heavily populated and considering the spatial, socio-political and temporal scales.
2. The fact that this is an individual research project that straddles social and environmental sciences, between Anglo-Saxon and Franco-Moroccan scientific traditions and styles, between English and French languages in an Arab country and in a rural Amazigh world.
3. The above, considering my personal profile and as researcher. Namely, my Spanish mother tongue (none of the 4 languages involved in the research); my only relationship with Morocco

prior to my PhD had been a three-month research stay in an area other than the Arganeraie; and my academic profile is in environmental sciences and ecological economics.

Considering the above circumstances, the **design and the operationalisation of the research** has (i) allowed for a very fruitful adaptation of the central research question and the various specific objectives to the context and circumstances; and (ii) it has also made it possible to **easily detect and establish trust relationships at different levels and scales, and foster synergies between converging but previously unconnected actors and projects.**

The **relationships of trust** at both local and RBA levels and the design of some of the research methods have, in turn, **made it possible to detect inconsistencies and biases, to assess the quality of the information received** sometimes, and even to overcome the barriers imposed by the different languages and the difficulties of working locally with (non-professional) translators. I insist on the importance of trust with the groups and people involved in the research, because this raises one of the fundamental points of the discussion of results; that is, the quality of the background information, when compared to other different research approaches existing in the literature.

The **ethnographic approach at multiple levels** (not only local) has made it possible, for instance, to detect and assess the relevance of informal dynamics and relationships and their role in the resilience of the system.

It has also been the ethnographical approach **combined with CLIP analysis of actors in three stages** (Institutional-Local-Interface) that has allowed to show that there are certain patterns (e.g. inertias, dynamics or behaviours) that are reproduced in a given cultural context at all levels (like a Russian doll). This is something intuitively obvious but often overlooked in the conservation literature; perhaps because the focus is often on top-down or community-based approaches, but rarely on both simultaneously or on the interface between them. One example among many others would be the degree of inclusiveness of vulnerable or disempowered groups.

INCLUSIVENESS, ETHICS and VALIDATION OF RESULTS

The research ethics and a research design inclusive and open to **participants' feedback at several points of the research process** (including the RBA and the two local communities), have been effective in minimising the risk of oversimplification, in better and quicker adapt to the local context, in building trust and local support and in fostering mutual learning and synergies.

In addition, the **validation of preliminary results** with domestic researchers and key stakeholders have increased validity. But most importantly, the validation of some preliminary results with both local communities has not only led to detect and correct some minor mistakes in the digitalisation process of the participatory maps; it has allowed collecting valuable testimonies of local community members about this research and about research and researchers in general. It has also had a **positive impact over ethical issues** in the sense that communities have experienced a different way to conduct research, and they are now empowered somehow to choose the way that better suits them in the future.

Paying particular attention to ethics and values has not only helped to build trust, enhance data quality and grasp complexity; but was fair and therefore **consistent with the discourse on inclusiveness** to which I am contributing.

REWARDS FROM FIELDWORK

On top of those already mentioned, I have had quite a few rewards from the field worth mentioning to thank somehow people (once again) and wishing to be inspiring to someone else. Apart from those rewards more obvious and maybe personal (derived from most of ethnographic fieldwork experiences), I can give the example of the several times being in one or the other local communities and listening how local leaders or community members thank me for pushing them to collectively think about relevant issues to them, or for offering them the opportunity or the excuse to gather together, etc. (when it was absolutely me who should thank them for so many things).

A big reward that I have not expressed in the text, happened in my first local community. When I came back several months after my fieldwork there, to validate my results with them, I knew (almost by chance) that a group of scientists had visited the douar a short time before. My surprise was to hear that **the community leaders had kind of “set the rules” for the group of researchers to stay and to conduct their fieldwork there, in the sense of my previous research approach.** Which means they had somehow appreciated my research approach, and they felt empowered to set the rules and advise other researchers of how to conduct their work there, if they wanted the collaboration of local people.

I would also consider as a reward the confidence in the **high quality of the data.** As mentioned before, building trust is a major assurance to obtain quality data; at least in a context similar to mine, namely, working in a rural community being a foreigner (including those national researchers or students, consultants etc. who are not from the community). I have experienced how local people answer questionnaires (i) with the responses they think the researcher is going to like, (ii) with those locals think are going to be more beneficial to them or (iii) with the first ideas coming to their minds in order to finish quick and “with elegance” let’s say. It is probably a cultural issue that might deserve further study and reflection. Regarding this issue I acknowledge my weakness related to local language (Tashelhit) and translation, but I am confident about the quality data I have obtained and fully sure that community members have told me everything they wanted to share with me regarding my research questions and concerns. And I am aware that even if I had spoken their language, without trust, they would have been able to hide anything they did not want me to know. As an example of my confidence in the quality data obtained, I refer to a collective interview with women in one local community. There, at some point local women disliked or did not trust the quality of the work done by my translator, so they were not sure if I had properly understood their message. What they did then was to search for the village teacher and search me alone on a different day, so the teacher (who spoke French) could properly translate to me their response to my questions and the accurate info they wanted me to understand.

In a similar context, not having built trust in advance may result in false information over which the whole research analysis and discourse is based. For example, questionnaires about household income, which is something frequent and basic but sensitive information to most locals and hard to test if they lie or not.

2.2. LIMITATIONS AND CONSTRAINTS

Every single research is biased somehow, from statistical and modelling assumptions to simplistic disciplinary analysis or social-ethnographical personal bias. From that standpoint, what I consider relevant to foster transparency and rigour is to explicitly acknowledge it from the beginning of the research process and try to minimize it. In this sense, further detail on the different sources of bias detected in this thesis and constraints encountered is provided below.

FIELDWORK, RESEARCH CONTEXT and RESEARCHER PROFILE

My research was 100% exploratory, which pushed me to listen, to validate findings, and to create my own synergies (e.g. projects-collaborations). Neither me nor my supervisors had a previous direct link with the study area. Because I wanted to experience how it feels to become “scientist”, I took the risk and put myself “out of the box” in many senses. As a result, I ended up doing fieldwork in an area and a country I did not know before, learning and improving the French language (that had barely learned before), neither speaking the Arabic nor the Tashelhit, writing the thesis in English (with Spanish as mother tongue). Only with a few phone numbers I collected during a previous scientific Congress I had assisted to and a few emails I had gathered from the papers read during the literature review. Some of my co-supervisors tried to advise me at the beginning to make a “less complicated” research design or to choose an easier study area. **Considering my personal and professional research profile and limitations and my own research ethics**, I chose to start my fieldwork by validating my research design with local and national researchers highly experienced in my study area. That process was the **first step of a network of collaborations that ended up being a priceless reward**.

On top of the three challenges already mentioned in the “strengths” subsection, an obvious constraint arising from logistics is the always **limited time and resources**. A consequence of it, for example, was to **miss a third local case study** (in Taroudant province, interior of the Western High Atlas) which would have enriched the results and allowed for comparison between local communities.

Due to my long stay in the communities and the ethnographic research design, most respondents already knew me and my research in advance, and this could have shaped their responses somehow. There is also a **certain bias derived from the constraints regarding Amazigh-French translation** and the intrinsic complexity of the topic (e.g. the term biosphere reserve has no translation into the local language, nor does the term resilience). In these cases, the translators and I clarified the question or issue, many times with the invaluable help of the local leaders (who had already grasped the research goals properly in previous meetings).

I acknowledge that some issues could not be controlled and influence the research process, such as **my role in the research context** as well as **my cultural and personal background**. However, they are **at the same time limitations and strengths** (with a positive side acknowledged by diverse domestic participants). Thus, being a Spanish woman helped me to approach the potential respondents, particularly local women, and gave me a sort of aura of neutrality (harder to achieve by domestic researchers). In general, all interviewees at the community level were curious about my reasons and motivations for conducting the research in rural Morocco, which made them willing to engage in informal conversations with me that were enriching for the research process.

Another example of limitation of the research process is that related to the **actors’ identification and characterization** in such a vast area. As I have necessarily discussed only with some stakeholders (individuals from large institutions, but not all of them and not even all the institutions), I am aware that my results may reflect the interests of those I have discussed with and others who have similar interests, and just at the specific temporal moment of the inquiry. This is particularly relevant regarding the CLIP analysis (i.e. relationships of collaboration, conflict, competence, interests, power and legitimacy).

Finally, the obvious **limitation derived from language and translation had a cost on logistics, time and resources and an evident impact on data gathering**. Some methods were specifically selected and adapted to this circumstance. However, the integrative research approach and multiple validation steps have balanced this limitation and have allowed for others of the priceless rewards I got from fieldwork. That is, the opportunity to test by my own (i) how non-verbal communication works and (ii)

how relevant it is to be as empathetic as possible and build trust in advance with no hurry (I would say not expressing externally and behaviourally researcher's unavoidable and almost permanent hurry). Community leaders thanked me several times for not being in a hurry and not pressing them so much (meaning spending whole days sitting in a local café waiting for them to find the time to talk to me and being almost always open to change previous agreed plans).

RESEARCH TOPIC and MULTI-LEVEL APPROACH

A characteristic of the whole research, something I have done on purpose in both fieldwork and the theoretical approach, is the **consideration of several initiatives** (not connected in advance) in the case of empirical fieldwork, and of **several conceptual frameworks and approaches** in the conceptual chapter. I acknowledge that this approach may risk communicating a level of dispersion, an unclear central message, or an insufficient depth in the analysis to some readers.

However, as an exploratory research, **one of the pillars of this project was to try to connect disperse dots**, to explore the interface for me was from the beginning go to the field with no pre-established thesis in mind (just a well-defined research question) and search for different worldviews, different initiatives and projects potentially convergent, different theoretical frameworks relevant for my research topic or informative to my field data (i.e. explanatory of my data) not previously or frequently connected.

This exploratory approach has allowed to discover and argue that there are a series of advantages of exploratory studies aiming to connect disconnected dots. Although they are not frequent, conventional, and they may be easy to criticise from academia, empirical exploratory studies are enriching, and they may highly contribute to advance current research on complex SES or social-environmental issues at stake nowadays. In my experience, there were many projects on the field not connected and clearly convergent (e.g. regarding ICCAs, *agdals*, the biosphere reserve, governance and research).

PARTICIPATORY DATA ANALYSIS

Two additional limitations particularly relevant and meaningful and that have not been possible to accomplish due to pandemic travel restrictions, are: (i) the **participatory stakeholders' analysis and validation**, particularly the CLIP analysis; and (ii) the **participatory validation of influencing factors of IEG** at the different levels. However, I have planned to present in person this thesis findings, asking for feedback, in the RBA (Agadir) and the two local communities, as soon as possible.

More in-depth research should be conducted to properly set causal relations and further understanding of the individuals' willingness to dialogue or not within a small, restricted group or community. I already pointed this out in relation to apparent behavioural differences between community leaders and other more intransigent members of the same community, but my data do not allow to properly explain these differences.

In the same line and concerning differential individuals' willingness to share public information, further in-depth specific research should be conducted. As mentioned in the discussion, our findings point out towards strong implicit and explicit informal dynamics that seem to be embedded in Moroccan institutions, organisations, and a large share of society (and abroad) becoming a significant constraint to inclusive environmental governance.

3. FUTURE RESEARCH

The relevance of qualitative social research to understand certain aspects of governance is increasingly pointed out in the specialised literature. Overall, the exploratory character of this thesis may have contributed to inspire other investigations regarding inclusive environmental governance, particularly with regard to biosphere reserves and community governance systems.

The post-normal science framework emphasises the importance of inclusive research approaches, values, ethics and the recognition of one's own limitations. Literature on governance, SES and conservation also recognise the relevance of considering different knowledge systems and stakeholders or actors. The research design developed in this thesis may inspire and contribute to further develop open and integrative methodological approaches when researching on issues related to interface processes and inclusive environmental governance.

Findings from this thesis demonstrate the relevance of the informal dynamics, the psychological issues underlying behaviours and multiscale dynamics, the unspoken, etc. Future research would be crucial linking the fields of affective neuroscience and behavioural psychology with the field of environmental governance of social-ecological systems, to address the wicked side of today's major human-nature challenges.

This thesis has contributed to the international literature on UNESCO Biosphere Reserves with a case study from a Maghreb country. However, additional similar case studies in other North African countries would be a must. As it would also be similar research in the interface between BRs and local communities or ICCAs in other Mediterranean countries, including Europe, for its comparative added value and because effective governance and BRs which are effectively functional remain two of the major challenges of BRs globally. Also because in protected areas' literature, there is a lack of studies on the interface with local communities, especially those focused on governance.

Further research and deeper analysis are required to establish causal criteria behind top-down and bottom-up dynamics and perceptions about governance in the RBA. Further work to co-design "context-adapted" indicators of IEG, which are of feasible implementation in the RBA would contribute positively to the evaluation and monitoring of adaptive governance processes and the resilience of the system.

There is an imperative need to foster a common language and a shared vision in the science-policy interface, in the local-policy interface and in the science-local interface. This is particularly relevant and urgent in the RBA, as demonstrated by this thesis, not only on the interface between different governance systems (e.g. biosphere reserve and *agdal*), but also within each system itself.

In addition to the lines of research pointed out above, and because of the inherent limited scope of the thesis, there are five additional topics which would enrich the contributions presented here.

First, the gender lens should also be addressed in detail when analysing governance, particularly in the RBA which is an area internationally known by the women's know-how regarding the argan oil production, a key economic activity. Studies have been done regarding households and women-led cooperatives, but it is critical to look at the issue of gender in relation to governance, and the actual role of women in decision-making (top-down and bottom-up). Ideally also from a perspective of women's social class and ethnic origin.

Second, the youth lens are also needed regarding governance and still lacking in the RBA and abroad.

Third, further work and efforts are still needed in the RBA to reach certain high-level political and institutional actors and gain their trust to properly address in depth the issues researched. The same

applies for the main and more influential private actors (e.g. regional and local elites, main economic sectors, external investors).

Fourth, reproducing this research in the other RBA homogeneous zones not studied (like Guelmim, Essaouira, Taroudant and Agadir at least) would improve the local level findings and might allow for comparative analysis of local level governance models and dynamics. Thus, strengthening the results of the interface presented here.

Fifth, despite its high interest, Arganeraie's *agdals* have not been systematically documented to present¹⁶⁵ and it is out of the scope of this thesis to provide a comprehensive classification of *agdals* in the Arganeraie. However, this lack of knowledge plus the successful experience with participatory mapping of ICCAs and *agdals* by local communities in this research, show the interest of a long-term citizen-science research project in the RBA. Ideally, it would be collaboratively led by community leaders and national and local researchers from various disciplines. In addition to the participatory mapping of *agdals* in the RBA, the above-mentioned citizen-science project could also address the lack of knowledge and differences of current agro-silvo-pastoral *agdal* practices in the Arganeraie. A focus on the existent differences between argan *agdals* in the High Atlas mountains, the plain of Souss river, and the Anti-Atlas mountains would enrich the discussion around IEG within the RBA.

¹⁶⁵ At least in the scientific literature published either in English or French.

4. TAKE-HOME MESSAGES

This section aims to highlight some insights and contributions of the research process and research findings of the thesis. While some of the insights, steaming from this empirical exploratory research, corroborate concepts and claims already acknowledged in the literature; other are original contributions that nurture a more complete picture of processes of governance, research, management, policymaking or dialogue in social-ecological systems.

RESEARCH PROCESS AND FINDINGS

The first eight messages are considerations resulting from either the empirical research process and/or findings which support claims and concepts acknowledged by well-known authors on the field. Messages nine to eleven are original findings of the thesis non highlighted in the literature consulted. And messages twelve to fourteen are rather learnings from the research process and the original methodology adopted that deserve to be considered in future studies addressing IEG.

1. **Framing choices** are an essential element and a crucial starting point to address and analyse any social-environmental issue (Ison and Wallis, 2017; McEvoy et al., 2013; Travers et al., 2019). How an environmental problem is framed ultimately determines how to approach and implement the solution and the solution itself (Travers et al., 2019). Framing choices have a great influence over the multiple stakeholders involved in a situation and may be intimately linked to processes of stakeholder buy-in, trust, dialogue, conflict or understanding (Tompkins et al., 2008).
2. To consider, integrate and value on an equal basis and respectful ways the **multiple knowledges** involved in a certain situation, topic or context (including scientific, local and traditional knowledge but also learning from conservation managers, women or youth) is a prerequisite to successfully and ethically address it (Chilisa, 2017; Hockings et al., 2019; Lemke and Claeys, 2020; Reid et al., 2006; Tengö et al., 2017). To date, knowledge integration and co-production of knowledge remains a challenge (Cash et al., 2003; Crona and Parker, 2012; Tengö et al., 2014), however examples exist across the globe that it is feasible and may provide more accurate and coherent narratives of long-term social-ecological change (Abu et al., 2020; Kopenawa and Albert, 2013; Steelman et al., 2019), advancing the understanding and, in many cases, improving the management of SES. As Steelman et al. (2019) conclude, the failure to find respectful and safe spaces to communicate, understand each other and identify solutions to commonly defined problems, breeds frustration, undermines trust in academic and managerial institutions and those associated with them and leads to questions about credibility, legitimacy and effectiveness of well-intentioned transdisciplinary efforts (Cash et al., 2003; Steelman et al., 2019), which are key influencing factors of IEG as already demonstrated.
3. It is paramount to integrate **human-dimensions** that are frequently obviated (such as psychological drivers, emotions and behaviours, worldviews or contradictions) on human-related environmental issues (including identity, value and belief systems and fears among others). Only in doing so we will be able to advance our understanding of complex intertwined socio-political and behavioural issues related to environmental governance and conservation. Despite being still a marginal, there is increasing evidence in this direction (Fischer et al., 2012; Hedlund-de Witt et al., 2014; Wamsler et al., 2018; Whitburn et al., 2019). Particularly, Ives et al. (2018) argue that what they call “inner nature connections” (such as philosophical, emotional and cognitive connections) are deep leverage points necessary to achieve sustainability transformation.

4. The human being, and thus every human-related issue, is **a set of complex realities that can be distinguished but cannot be separated**. Recent calls for transdisciplinarity go in this direction (Chilisa, 2017; IPBES and IPCC, 2021; Steelman et al., 2019) but are still far from being mainstream.
5. This research, focussed on the interface between top-down and bottom-up governance systems, adds empirical evidence (e.g. synergies and opportunities in Table 36) to more conceptual reasonings pointing out in the direction that apparently opposed **meanings of governance**¹⁶⁶ are in fact linked (Fukuyama, 2016). This thesis has contributed to advancing the understanding of this link. By first, demonstrating that different conceptions of governance or a governance system may be linked in fact. Second, by highlighting that most of the underlying common factors characterising the interface between different governance systems are, in fact, behavioural and/or emotional. And third, by claiming that it is relevant to not undervalue the individual vs collective facet behind each situation or outcome, as institutions and communities are in the end made up of individuals.
6. An intrinsic characteristic of **SES** is their complexity and high interconnectedness. In addition, current biggest socioenvironmental challenges have also demonstrated to be closely interlinked (i.e. two coupled global crisis of Climate Change and Biodiversity). In this scenario, it is mandatory to tackle simultaneously the **multiple scales and levels** of any issue considered (Berkes, 2016), either in research or in policy design and implementation. Different spatial scales impact simultaneously the territory and its people in a dynamic and multidirectional way at every moment; also temporal and socio-political scales have a decisive impact. Failure to acknowledge this imply to ignore a central part of reality and risks to over-simplify our understanding, analysis and discourse of reality.
7. This thesis has also provided empirical evidence on the importance of **adaptiveness and resilience** to deal with uncertainty. Thus, adding a **first Maghreb case study** to the scientific debate. Since more than four decades, it is well-acknowledged in the SES scholarship that management processes may improve through adaptability, flexibility and capacity to deal with uncertainty; although it requires overcoming disciplinary restrictions and boundaries (Berkes et al., 2003; Biggs et al., 2012; Dietz et al., 2003; Gunderson, 1999; Gunderson and Holling, 2002; Holling, 1978). The RBA case study corroborate the claim by Folke et al. (2005), referring that the roles and relevance of social capital, focusing on networks, leadership, and trust, are emphasized in a context of adaptive governance and management; being these, three influencing factors of IEG.
8. In line with the previous message, it is important to acknowledge **uncertainty** and actively plan to deal with it, interpret it in a proper way and help all stakeholders involved to not be scared about uncertainty (Berkes et al., 2003; Folke et al., 2005; Gunderson and Holling, 2002). Empirical evidence from this research shows how local and customary governance systems are better prepared to accept and deal with uncertainty than institutional ones. Furthermore, local people's mindsets seem to be better adapted than others to navigate uncertainty.

¹⁶⁶ On the one hand, governing without government (governance as the regulation of social behaviour through networks and other non-hierarchical mechanisms). And on the other hand, traditional state-based public administration.

PART 5. DISCUSSION

9. A crucial take-home message resulting from this thesis is the importance of a strong, transparent, honest and non-paternalist **inclusiveness** in any issue, project, process of dialogue, activity, policy or research concerning IEG which involves local people, rightsholders or citizens.
10. Linked to the previous, this thesis adds evidence on the relevance of being inspiring and supporting in processes of negotiation, dialogue, conflict-solving or agreement linked to the “Global-Local Interface”; rather than paternalist, hierarchical, dogmatic, autocratic, arrogant or condescending; attributes still far too frequent unfortunately. This applies upwards and downwards, particularly among those with higher levels of power and/or responsibilities, at institutional, RBA and local levels.
11. A point resulting from this research and applicable to any other research, policy or development project involving active interaction with people is the importance of **creating the necessary conditions** and remaining confident, open and flexible enough for opportunities and synergies to take place. This is somehow linked to the concepts of adaptability, inclusiveness and co-construction of knowledge. It is also easily obviated in situations of budgetary or time constraints; thus the relevance to emphasize it.
12. Being aware of the own **profile as researcher** and the **context of the research** is fundamental to best adapt the research design to the context and research question/s. This is rather obvious and not always sufficiently acknowledged, particularly in this field of research.
13. It cannot be over-stressed the importance of **ethics and values** in their deepest sense when it comes to research involving people, particularly vulnerable people, the multicultural component, complex political or religious contexts, etc.
14. To pay special attention to **primary data quality** first and then build up from this data to assess the strength and validity of **subsequent analysis and assumptions** is of high relevance. However, it is not always given the importance it has, particularly when implementing other more quantitative approaches to issues involving human perceptions and/or sensitive issues. This issue has been openly acknowledged by several community members of one of the two local communities studied. For example, in-depth interviews in a context of ethnographic research *versus* non-ethnographic qualitative surveys over the same subjects will probably lead to different answers because of the different degree of sincerity, self-reflection or trust of participants in each case.

PART 6. CONCLUSIONS

I have investigated what actually happens when two different environmental governance models in a BR territory try to converge. This area of convergence or interaction is called the global-local interface. To analyse this interface, I need to understand each of the two governance models separately first; second, I must study existing and potential challenges and synergies between these two models; and finally, examine the main factors and issues on which integration and complementarity between top-down and bottom-up models depend.

Indeed, what indicates a truly inclusive environmental governance model is the consideration that both models are hierarchically equally valid, each with its pros and cons, and that the actors involved have a voice and a vote in management. Thus, the idea of inclusive environmental governance (IEG) is much more in line with co-management than with mere social participation in a classic institutional protected area, or with state recognition and free management of a territory by its local populations.

Overall, the findings of this thesis highlight that: (i) the biosphere reserve and the customary agdal systems are considered by most actors as compatible approaches towards IEG, and the most appropriate opportunities to build a strong global-local interface; (ii) IEG is considered feasible but first the current low strategic priority and weak political will concerning the RBA and the agdal must be overcome; (iii) there is a strong link between the influencing factors of IEG identified and the individuals' mindsets, values, motivations and interests; and (iv) ethnographic and holistic approaches are apt to uncover many of the underlying hidden factors that have been overlooked to date.

After the joint analysis of results, I suggest that establishing and maintaining inclusive environmental governance across the diversity of actors, relationships, territorial dynamics, and responsibility arrangements is critical (i) for the future effectiveness and ownership of BRs by their stakeholders and communities, (ii) for enhancing the resilience of community governance systems negatively impacted by global change dynamics that escape from their scope; and (iii) in processes of co-management and co-construction of knowledge.

I conclude that in the Arganeraie, inclusivity is still far from being achieved due to unspoken and behavioural constraints. Thus, to advance towards this new model of governance in the Arganeraie, the variety of influencing factors analysed in the discussion should be progressively addressed from the bottom-up and from the top-down. But most importantly, the underlying and common factors highlighted in this thesis should be further acknowledged and integrated.

I invite first, academia to acknowledge that effectively addressing the former unspoken constraints and barriers comes out more easily with certain research methods than with others; and second, I encourage policy- and decision-makers to identify and enhance synergies that allow for a shared vision of their territory.

Finally, further multidisciplinary and interdisciplinary research is essential to better understand and manage these hidden conditioning factors that ultimately affect interpersonal and human-nature relationships, beyond cultures and disciplines.

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I. Complementary information: State of the art of the argan oil sector in the RBA

At present, two opposing narratives still coexist regarding the argan oil sector; not only in the field of (international customer-oriented) marketing, but also within the domestic and international economic, development and political discourses and in the scientific literature.

On the one hand, the successful “Argan story”. A frequent narrative which presents the region (either the argan forest, the argan oil sector and or the RBA) as a successful and exemplary case in which: (a) the ancestral women knowledge (i.e TLK) has allowed the economic development of a sector and a region; (b) local women (mainly from rural areas) have organised themselves into women-led cooperatives of argan oil and have become more economically autonomous and empowered, etc. This positive or successful vision is, in turn, transmitted through different lines of argument:

- **The gender approach:** women become empowered, more autonomous and their knowledge is preserved and recognised internationally.
- **The rural development approach:** local populations gain economic benefits from developing a sector of international importance within an UNESCO Biosphere Reserve.
- **The heritage approach:** the argan oil sector fosters the international promotion of the region's cultural and natural heritage.

Despite a rich corpus of scientific literature supporting this narrative stemming from the fields of chemistry, plant biology, etc. (including non-peer-reviewed literature); a good example of this narrative may be the official UNESCO webpage (UNESCO, 2017) under the title “Strengthening of the Argan Biosphere Reserve (SABR), Morocco”, which states:

“Most of this oil is harvested by the women’s “Argan oil cooperatives” which have been supported by NGOs, domestic and international development agencies. Together, these partners have made all efforts that the increase in export price actually trickles down to local people and that it preserves the health of the Argan forest, through a win-win-constellation. Detailed analyses of household data indeed suggest that at least the first goal is met, that the boom has enabled rural families to increase consumption and investment, in particular to increase their goat herds – yet with negative effects on the Argan forest. At the same time, families can send their girls to secondary school, so educational outcomes, especially for girls, have improved greatly. In addition, the increased return on female labour might improve women’s position in intra-household bargaining.” (UNESCO, 2017)

Another recent example supporting this narrative from international researchers not having direct interests regarding the argan oil sector, is the work published by (Torralba et al., 2019). Authors highlight the RBA as a Mediterranean example for “**Landscape stewardship**” while claiming that “people should play an active role in management and conservation of ecosystems”.

“The Arganeraie BR, located in southwest Morocco, is a clear example of landscape stewardship, where most of the argan oil manufactured is harvested and produced by the women’s “Argan oil cooperatives”. These cooperatives promote both the economic profit but also empower women in the rural communities (Guillaume and Charrouf, 2016). In addition, those cooperatives participate in the sustainable development of the argan forest.” (Torralba et al., 2019).

On the other hand, the cautionary or critical “Argan story”. An alternative narrative well represented in the related scientific literature (mostly from the social sciences and economics), clearly diverging from the previous one, presents the same region and the same reality from a less successful point of view. This “more critical” vision tends to focus on similar lines of argument, but analysed from very different perspectives:

The gender approach. Women are today used as cheap labour, with a promise of greater autonomy that has not become reality in most cases and is not adapted to the cultural and social environment in which these women live. Moreover, with the mechanisation of the sector, their ancestral knowledge is being eroded, and the new generations have difficulties in mastering (becoming proficient in) the whole process, as it has fundamentally/drastically changed over the last 3 decades. Of all the stages of the traditional process, only the argan nut crushing remains not mechanised and women are paid for kilos of argan nut crushed per day (instead of being paid a proportional part of the gains from the final product). This supports the arguments of women as “cheap labour” within the argan oil sector; and the one referred to the erosion of the traditional women know-how (TLK).

“Extraction is a labour-intensive activity traditionally carried out by women that involves cracking the hard shell of argan nuts, roasting the kernels, grinding to produce a thick paste, and kneading this paste to extract oil. This transformation takes two to three days’ work per litre of oil, not counting harvesting” (le Polain de Waroux and Lambin, 2012:590)

Moreover, in the argan case, the gendered approach of many development projects implemented in the 2000s underestimated the socio-cultural context of both women and the Arganeraie ecosystem itself. By focusing on traditional women's knowledge, first, all the ancient forest practices of managing the tree and the forest (men's knowledge) in a sustainable way were overlooked (with negative consequences from the household level to the ecosystem level). Second, the developers demanded the women-led cooperatives to contribute to the regeneration of the argan forest, not taking into account that the forest and tree management is a customary task and responsibility of men; which means that women do not have a voice (even worse after the women cooperatives dynamic having created certain “intra-household men-women concurrence”). Third, by encouraging women to work and make money outside their homes in a rural patriarchal society, in many cases, these women have been excluded from their communities, judged as dishonest and/or socially denigrated and rejected.

“Argan trees are managed under a complex tenure system in which the trees are usually state property but usufruct rights, including nut harvesting, are granted to resident communities and regulated by customary rules that vary greatly among places, from de facto private ownership to open access.” (le Polain de Waroux and Lambin, 2012:590)

The rural development approach. Most of the economic benefits (gains) of a sector of international relevance, not only do not reach the local populations (i.e. rights-holders) but in fact, do not even stay in the Arganeraie region. Instead, “Most of the gains appear[ed] to have been accrued [obtained] by non-locals able to overcome capital and infrastructural constraints to entry into the mechanized, high-end market” (Lybbert et al., 2002). Contextualizing argan oil production, le Polain de Waroux and Lambin (2012:603) showed that although it has provided a complementary source of cash, its impact on overall income and assets has been marginal in the study area in comparison to other income sources; which suggests that the market claims referred to at the outset are overdone.

The heritage approach. With the current developments in the sector, first, the natural heritage is severely affected (i.e. ecosystem long-term equilibrium, resilience and natural regeneration); but also the endemic argan goat race. And second, the cultural heritage is being eroded (e.g. women know-

how regarding the argan oil, community customary norms and traditions regarding the Arganeraie like the agdal or the behavioural changes of local argan oil use and consumption, not any more affordable to most families). The argan forest is no longer managed as it used to be, women do not make nor use the oil as they used to and, most seriously, the identity link with the argan tree has been affected and it has gone from being a sacred, forest of multi-purpose trees, to being a cultivable fruit tree whose single main value is the fruit (for its market-value).

Finally, le Polain de Waroux and Lambin (2012) warns that attention should be paid to the extent to which producers really can have sufficient control of the commodity chain to retain value. Arguing that “an important part of the BNC [biological resource-based niche commodities] value lies in the narrative attached to it, which is often produced by intermediaries (Goodman, 2004)”. The continued willingness of some development agencies to support market-based rural development (e.g. World Bank, 2007), whether through bioprospecting, non-timber forest products, BNCs, or improved crops, shows the power of win-win narratives (Oya, 2009). Win-win narratives imply that all actors (that is the most vulnerable, private companies, and the environment) benefit from certain reforms, such as agricultural trade liberalization. “The literature and our case study show that these benefits are usually not shared equally and that win-win narratives are often overstated” (le Polain de Waroux and Lambin, 2012:604).

II. Semi-structured interviews and focus group

NATIONAL, REGIONAL, SUBREGIONAL LEVEL (RBA)

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IDENTIFICATION (enquête-e):

Date et Lieu:

Nom et Prénom. Contact. Organisation et Position. Profile professionnel. Nombre d'années vécus dans la RBA. Âge : 20-35 / 35-50 / 50-65 / +65

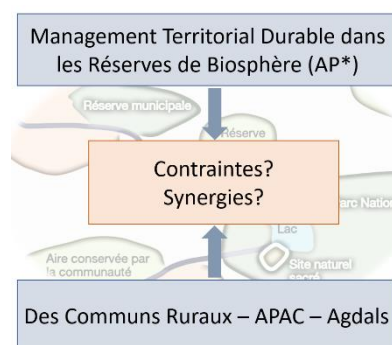
Observations:

TITRE DE L'ENTRETIEN / QUESTION(S) DE RECHERCHE

À l'interface entre les *agdals* agro-sylvo-pastoraux marocains et la Réserve de Biosphère de l'Arganeraie

Question de Recherche: Comment les APAC et les Réserves de Biosphère peuvent-ils se soutenir mutuellement dans la réalité? Cas des *agdals* marocains dans la Réserve de Biosphère de l'Arganeraie.

- Dans quelle mesure les Réserves de Biosphère peuvent-ils appuyer les *agdals*? (Soit le label RB de l'UNESCO ainsi que le Comité MaB marocain, soit spécifiquement l'RBA)
- Que peut les réserves de biosphère apprendre des *agdals*? (Soit dans un contexte méditerranéen/du Maghreb/marocain, soit spécifiquement dans l'RBA)
- Comment ceci peut être un projet collectif au profit des communautés locales?



Cadre de Recherche et Objectifs: (a) Gestion Territoriale Durable dans les Réserves de Biosphère ; (b) Gestion Territoriale Durable à travers des Communs Ruraux, APACs et/ou *agdals* ; (c) Contraintes ? / Synergies ?

I. QUESTIONS GENERALES

1. L'enquêté-e (son profile et relation par rapport au sujet/territoire)

- Quelles sont vos activités en relation avec la RBA? (Travail actuel ou passé, projet, etc.)
- Combien d'années d'expérience? Dans quel/s domaine/s?

2. Le territoire de l'Arganeraie

- Pour me permettre de mieux comprendre l'évolution du territoire de la RBA, Quels sont les aspects (dates- évènements- changements...) les plus importantes qui ont marqué ce territoire?
- Historiques, Politiques ou de gouvernance, Economiques ou de développement, Sociologiques ou culturels, D'autres.

- Aujourd'hui à votre connaissance y a-t-il des initiatives d'intérêt pour la RBA et qui sont en cours? (Argana, Tiznit, Inzerki, etc.)
- Pourquoi sont-elles intéressantes d'après vous?

II. QUESTIONS AU NIVEAU DE LA RESERVE DE BIOSPHERE DE L'ARGANERAIE - RBA

Déclarée en 1998, s'étend sur 2,5 millions d'ha (2.362.584 ha) la RBA concerne **7 provinces et préfectures**: Agadir Ida Outanane, Inezgane Aït Melloul, Chtouka Aït Baha, Taroudant, Tiznit, Sidi Ifni et Essaouira.

1. Définition de Réserve de Biosphère

- Qu'est-ce que vous connaissez des Réserves de Biosphère en général?
- Quel est son intérêt majeur? (Par rapport au territoire, au pays, au population...)
- Pour quoi sont-elles ou puissent-elles être utiles aux territoires ?
- Comment peuvent-elles le faire (être utiles aux territoires)?
- C'est quoi pour vous la Réserve de Biosphère de l'arganeraie? 3 mots clés.

2. Gestion de la RBA (Comment la RBA est en train d'être gérée?)

- Connaissez-vous l'acteur/s qui est/sont porteurs aujourd'hui de la RBA? Qui la promeut?
- A votre connaissance, quelles sont les instances de gouvernance de la RBA? (Acteurs: qui, où, leur rôle. Institution(s) mais aussi personnes)
- Existe-t-il un comité de gestion de l'RBA? Est-t-il actif?
- À votre avis, Est-ce que la RBA est bien gérée? ...Quoi faire pour améliorer la gestion si nécessaire?
- Connaissez-vous le zonage de la RBA?
- Les critères de gestion dans les différentes zones (transition, tampon, centrales)...
- Est que le zonage est respecté? Au niveau de quelle zone (A, B ou C) est-t-il respecté? Demander un/deux exemple(s)
- À votre avis, qui sont les acteurs les plus concernés par la RBA? et les acteurs bénéficiaires?
- Est-ce qu'il y a un ou des acteurs qui est absent dans la RBA et dont la présence est importante? (Impliqué ou considéré)? (Les Institution(s) mais aussi les personnes liées à la gestion de la RBA à travers les organes de gestion et participation)
- A votre avis, est-ce qu'il y a un (ou des acteurs) qui est présent mais ne remplis pas assez son rôle dans la RBA (Si oui quelle est sa responsabilité dans la RBA)
- Par rapport à la gestion de la RBA, Où êtes-vous positionné/e? (Niveau national-régional, niveau local, parmi les scientifiques, comité de gestion, organe de participation, ...);
- A votre connaissance est-ce qu'il y a des choses qui affectent ou impactent la RBA aujourd'hui et demain? Exemples... : Projets : Centre National de l'Arganier, Observatoire de la RBA, APAC,... ; Lois : Agdal, Associations, Coopératives, Forêt d'Argan,... ; Infrastructures : Autoroute Tiznit,...
- Avez-vous des recommandations concernant la gestion de la RBA?

3. Caractérisation de la RBA

- Pourriez-vous décrire brièvement quelques éléments importants du passé de la RBA? (Histoire, points clé, acteurs)

- Pourriez-vous décrire brièvement l'état actuel de la RBA? (Acteurs, réalités, défis, opportunités. Compétences, Responsabilités. Dynamiques, Réalités, Driving Forces)
- RBA SWOT matrix: Points forts, points faibles, opportunités, menaces
- Structure spatiale de la RBA:
 - Connaissez-vous les limites géographiques de la RBA? et le zonage?
 - Existe-t-il une carte de limite et du zonage? Vous la connaissez? Comment avoir accès à cette carte?
 - À votre avis, les limites ...sont-ils bien établis et précises?

4. Vision de la future Quelle est la vision de la future de l'RBA?

- Selon vous et selon votre diagnostic qu'est-ce que va devenir la RBA demain?
- Idéalement pour vous quelle image devrait illustrer RBA à l'avenir?
- Comment y arriver? / Comment réussir? Quelles sont les clés, les responsabilités, etc.?
- Quels objectifs? ; Défis? ; Projets/activités prioritaires?

5. Le lien entre la RBA et les communautés locales (APAC-AGDAL) Comment l'RBA gère le lien avec les communautés locales? et quelle est la vision de la future?

- Selon vous est ce que la communauté locale est impliqué dans la RBA en tant qu'acteurs?
- A votre avis y a-t-il des relations entre la RBA et les communautés locales, APAC ou *agdals*? Ce lien, ... il existe? (Question ouverte, il faut décrire un peu)
 - OUI: Lesquels?
 - NON: Quel est votre avis alors?
- Ça serait intéressant de les établir?
- Comment le faire?
- Qui doit le faire?
- À quel niveau? : Administratif (Province/Commune/Caïdat...); Politique (Plan Développement, ...); Civil/Social (ateliers participatifs, Associations, ...) ; D'autres?
- La RBA, a-t-elle des impacts (en tant que influences mesurable) sur les communautés locales? ...Positive ou Négative? Décrire un peu.
- Qu'est-ce que vous me recommandez pour mieux comprendre et apprécier (évaluer) le lien RBA-APAC (*agdals*, Communautés locales)?
- Quelles sont les principales barrières ou limitations qui empêchent ce lien? (Citez trois)
- Quel est le rôle de l'*agdal* parmi toute cette discussion?
- Pour vous quels sont les éléments clefs qui interviennent dans la création du lien RBA – Communauté?
- Quels sont d'après vous les facteurs qui conditionnent la relation RBA et Communautés locales?
- Quelles sont les conditions nécessaires qui doivent être présentes pour créer ou renforcer le lien entre la RBA et les Communautés locales?

III. NOTES FINALES

Recommandations et apports divers:

- Etiez-vous prêtre à prendre part d'un focus group régional?
- Qu'est-ce que peut apporter la science/ la recherche de positif? et de négatif?

- J'ai bcp appris, ...est-ce que vous êtes toujours active dans la RBA? (Participation aux réunions et des événements liés la RBA)
- Aviez-vous des personnes ressources ou experts à me recommander par rapport à mon sujet de recherche dans la RBA? Noms et contacts
- Pourquoi ces personnes? (Son travail, sa connaissance, son caractère, expérience, ses réseaux et influences, ...)
- Avec quelles autres personnes devrais-je parler ? (De votre institution, d'autres institutions)
- Quels 3 documents de référence vous me recommandez?

LOCAL LEVEL (TISSKJI, TAMEJLOUCHT)

GUIDE D'ENTRETIEN SEMI-STRUCTURÉ AU NIVEAU DE COMMUNAUTÉ LOCAL

Rappel: toujours, comment et pourquoi ? et quel rapport ? pour bien chercher les liens.

I. AXE D'ANALYSE THEMATIQUE 1: PAR RAPPORT A L'AGDAL

- Qu'est-ce que c'est l'*agdal* pour vous? ou Qu'est-ce que le terme *agdal* signifie à votre avis ?
Définition d'*agdal*
- Quel est son **objectif** actuel/présent?, C'est quoi ce qu'il protège ou règle-t-il?, De qu'est-ce que lui protège?
- L'*agdal*, est-il **important**...: pour vous?, pour votre Communauté?, Est-il important actuellement?, Est-ce que vous croyez que l'*agdal* sera-t-il important dans le futur?
- L'*agdal*, comment-il se trouve maintenant? (Actif, en processus de disparition, etc.) **Status** de conservation
- Quel rôle représente l'*agdal* sur l'**économie locale**?
- Est-ce que vous croyez que le futur de la vie dans le douar/région dépend-t-elle de l'*agdal*? : OUI (pourquoi?) ; NON (c'est de quoi de ce que dépend le futur alors?)
- Existents-ils des différents **types** de domaines (d'*agdals*) ici? Lesquels? Sont-ils tous également d'importants?
- Il y a-t-il des **conflits** liés à l'*agdal* actuellement? Quels sont les principaux ou les plus importantes? (liés aux gens)
- Il y a-t-il des **problèmes** liés à l'*agdal* actuellement? Quels sont les principaux ou les plus importantes? (pas liés aux gens, e.g. le climat...)
- Les problèmes et conflits précédents, de qui dépendent-ils? Comment seraient-ils **résolus**? Avec l'aide de qui ou de quoi seraient-ils résolus? Croyez-vous qu'il mérite la peine l'effort nécessaire pour les résoudre?
- Jusqu'à quel niveau les conflits/problèmes précédents peuvent-ils se résoudre?: la famille, la grande famille, la Jmaâ, la Commune,l'Etat, etc.

II. AXE D'ANALYSE THEMATIQUE2: PAR RAPPORT A LA COMMUNAUTE LOCAL

Attention! : Taqbilt (tribu) Ait, Ait, AIT. Pas la Jmaâ !. Les ID

- Quel rôle joue l'*agdal* dans la Communauté? **La communauté et l'*agdal***, sont-ils la même chose? OUI (pourquoi ?), NON (**quelle est la différence?**)
- Quelle est pour vous votre Communauté ? D'où vous vous sentez/provenez (sentiment d'identité et d'appartenance) ? (de votre douar, de la commune, de la région, de votre famille, grand famille ou tribu, etc.) **Définition/Délimitation**
- À votre égard, est-elle unie votre Communauté? Quel est le **lien d'union** le plus forte ?
- Comment décririez-vous votre Communauté?
- Quelles sont les **activités économiques principales** (%)? Il y a-t-il des revenus externes/qui viennent de dehors (%)?
- Quel est le % des gens jeunes et de personnes âgées?

- Et le % de **population** résidante/non-résident? (celui qui habite ici tout le temps et celui qui viens que les vacances ou les weekends)
- De quoi vous rêvez? ...rester sur place peut être ? (pourquoi?); quitter le lieu (pour quoi?)
- À votre égard, le futur de la vie ici au douar, dépend-t-elle de que la Communauté reste unie et forte?
- Quelles sont les **avantages** de votre Communauté ?
- Est-ce qu'il y a des **conflits** liés à la Communauté actuellement? Quels sont les principaux ou les plus importantes? (liés aux gens)
- Est-ce qu'il y a des **problèmes** liés à la Communauté actuellement ? Quels sont les principaux ou les plus importantes? (pas liés aux gens)
- Les problèmes et conflits précédents, de qui dépendent-ils? Comment seraient-ils **résolus**? Avec l'aide de qui ou de quoi seraient-ils résolus? Croyez-vous qu'il mérite la peine l'effort nécessaire pour les résoudre?
- Qui sont les **contacts-clés** dans la communauté pour l'APAC/AGDAL? Merci d'inclure toutes les informations sur les contacts.

III. AXE D'ANALYSE THEMATIQUE 3: PAR RAPPORT A LA RESERVE DE BIOSPHERE DE L'ARGANERAIE (RBA)

- **Connaissez-vous** la Réserve de Biosphère de l'Arganeraie (de la forêt d'Argan)? Avez-vous entendu parler d'elle? Qu'est-ce que vous avez entendu parler sur elle?
- C'est quoi une Réserve de la Biosphère? **Définition**
- **Qui** est derrière la Réserve de Biosphère de l'Arganeraie? (qui la promeut?, qui la gère?, qui sont les personnes les plus intéressées para l'RBA ? et les personnes bénéficiaires? ...)
- Par rapport au sujet précédent, quel est votre avis?
- L'RBA, est-elle **importante** pour vous?
- L'RBA, est-elle importante pour votre Communauté?
- Y a-t-il des **relations entre l'RBA et l'agdal**? OUI (laquelle?)
- Est-ce que vous croyez que l'RBA affecte ? ou peut affecter d'une certaine manière vosre travail? : NON (pourquoi?), SI (comment?) **Influence réelle**
- Est-ce que vous croyez que l'RBA affecte ou peut affecter d'une certaine manière votre Communauté? : NON (pourquoi?), SI (comment? : des occasions, des avantages, des problèmes, des risques, ...)
- Quel est l'intérêt qu'un scientifique, peut-il avoir de venir à étudier ce territoire et le faire connaître aux autres? **Intérêt externe**

FOCUS GROUPS. GENERAL INFORMATION (RBA)**FOCUS GROUP EXPERTS RBA****II. PROGRAMME FINAL (après midi 3h)****1. RÉSULTATS ENTRETIENS 30'**

Expliquer et exposer (Format PPT: Comment mettre en place la RBA.pptx)

- Principaux doutes et manque d'information
- Principales convergences/divergences
- RBA SWOT Matrix (Défis et Atouts)

2. VISIONS DE FUTUR ON THE INTERFACE RBA/APACs 2h

- Comment mettre en place la RBA, en tant que Projet de territoire et Concept, avec une fédération active d'acteurs...? ...prenant en compte des liens entre la politique régional et le profil de la communauté local
- Cogestion (état-population): Possible??
- Visions individuelles + Débatte

3. LE ROLE DE LA RECHERCHE ET LES CHERCHEURS 30'

- Quel est le rôle de la recherche scientifique et des chercheurs parmi tout ça?

4. LISTE DE PARTICIPANT(E)S REÉLS:

Nombre de Participants: 11

Profil des participants:

1. DREFLCD-SO
2. RBA – DREFLCD-SO
3. FIFARGANE
4. Projet REFAM
5. RDTR
6. RARBA
7. ICCA Consortium – Centre des Études Amazighes et Environnementales
8. Recherche CNA - ANDZOA
9. GIZ - Projet ProGec
10. DREF-SEP
11. ENSA-UIZ

Observateur: Centre International UNESCO RRBBMed - Projet EduBioMED

Animatrice: M Carmen ROMERA (PhD Student ICTA-UAB)

Lieu: Au siège de la DREFLCD-SO Agadir. Quartier Administratif (près de la Wilaya)

Date: Mercredi 10 Avril 2019

Duration: 15:30h – 18:30h

III. CLIP analysis templates

STAKEHOLDER PROFILE CARDS

Stakeholder:		Ref. No.:		Date:			
Why are you engaging this stakeholder?							
Collaboration and Conflict (list stakeholders where a relationship of collaboration or conflict exists)	Stakeholders where collaboration exists:						
	Stakeholders where conflict is evident:						
Power (rate the control or resources this stakeholder can use to promote or oppose the project objectives)		High	Medium	Low or none	OVERALL SCORE (tick one)		
	Economic assets				High/Med	Low/No	
	Authority						
	Ability to coerce/force						
	Prestige/status						
	Social ties/connections						
	Info/communication control						
	Knowledge and skills						
Human capital							
Interests (rate the net gains or losses for the stakeholder arising from the project)	Potential gains for stakeholder:						
	Potential losses for stakeholder						
	High Net Gains or Losses	Medium Net Gains or Losses	Low or Neutral		OVERALL SCORE (tick one)		
	++ or --	+ or -	0		High/Med	Low/No	
Legitimacy (rate the degree to which other parties recognise the three Rs of the stakeholder)		High	Medium	Low or none	OVERALL SCORE (tick one)		
	Rights (legal/social)				High/Med	Low/No	
	Responsibilities (legal)						
	Resolve Determination Will						
CLIP Descriptor (circle CLIP code for the stakeholder, based on the overall score for each category (e.g. PL))	PIL	PI	PL	P	L	IL	I
	Dominant	Forceful	Influential	Dormant	Concerned	Vulnerable	Marginal

STAKEHOLDER COLLABORATION AND CONFLICT MATRIX

Ref No.	Stakeholder	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020
001																					
002																					
003																					
004																					
005																					
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009																					
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011																					
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015																					
016																					
017																					
018																					
019																					
020																					

Key: (+) = collaborating (-) x = (conflicting) competing m = mixed n = neutral u = unknown

IV. Resilience Index workshops' sheets

TISSKJI

Resilience Index Workshops in Tisskji. Comparative scores for women and men regarding the main internal and external factors related to the local community (LC), *agdal*, governance and resilience.

The "ICCA Resilience and Security Tool": TISSKJI - Imouzzer (Haut Atlas Occidental)			Women 31	Men 15
Internal factors				
1. Connection between the local community and the ICCA				
1.1	<p>ICCA's cultural, spiritual and other non-material values appreciated by the community as evidenced by the ICCA being part of their worldview and identity and/or being culturally or religiously important.</p> <p>(strong if ICCA-related values are virtually universally known and appreciated; medium if held by about half of the people in the community; weak if basically lost)</p>	<p>(5) Values are virtually universally known and appreciated in the local context.</p> <p>(4) Values held and appreciated by most people in the community.</p> <p>(3) Values held by about half of the people in the community.</p> <p>(2) Values held by only a small part of the population and degenerating.</p> <p>(1) Values basically lost.</p>	4	4
1.2	<p>ICCA's values for the conservation of biological diversity appreciated by the community, as evidenced by endemic species & ecosystem functions being well known & appreciated/protected.</p> <p>(strong if most people in the community are knowledgeable and active in conservation; medium if about half of the people are concerned and active; weak if most local people appear insensitive to current or potential ecological change)</p>	<p>(5) Nearly everyone in the community is knowledgeable and active in conservation.</p> <p>(4) Most people in the community are knowledgeable and active in conservation.</p> <p>(3) About half of the people are concerned and active.</p> <p>(2) Only a part of the population is aware and concerned, and it is declining.</p> <p>(1) Most local people appear insensitive to current or potential ecological change.</p>	5	4
1.3	<p>ICCA's subsistence & economic values appreciated by the local community (and measures to protect key ecosystem services) e.g. being a well-known and utilised source of food, water, income or providing protection from environmental disasters.</p> <p>(strong if basically everyone knows about essential services of the ICCA; medium if by about half of people are aware of the services and benefits; weak if most members of the community are not aware of the services and benefits from it)</p>	<p>(5) Basically, everyone knows about essential services and is taking the right steps to safeguard them.</p> <p>(4) The majority of people are aware, and some measures are taken to protect essential services.</p> <p>(3) By about half of people are aware of the services and benefits and wish to safeguard them.</p> <p>(2) A small part of people are aware of this and want to safeguard them.</p> <p>(1) People are not aware of the services and benefits and there are no safeguards to protect them.</p>	5	5
1.4	<p>Age of relationship between the ICCA and the community.</p> <p>(strong if over 100 years old; medium if less than 50 years old; weak if is less than 10 years old)</p>	<p>(5) Over 100 years old.</p> <p>(4) About 51 to 100 years old.</p> <p>(3) About 26 to 50 years old.</p> <p>(2) About 11 to 25 years old.</p> <p>(1) Less than 10 years old.</p>	5	5

1.5	<p>Strength of relationship between the ICCA and the community (i.e. intensity and continuity of attachment to their ICCA) (strong is both elders, youth, men and women are engaged in caring for the ICCA; medium if there is a strong involvement of community elders and adults or the youth; weak if only very few individuals seem to care about the ICCA)</p>	<p>(5) Everyone, both elders, youth; men and women are engaged in caring for the ICCA.</p> <p>(4) The majority of the community, including women and young people, are engaged in.</p> <p>(3) There is a strong involvement of community elders, adults and certain young people of the community.</p> <p>(2) Only the elders and adults.</p> <p>(1) Only very few individuals seem to care about the ICCA.</p>	5	5
2. Governance of the ICCA				
2.1	<p>ICCA decision-making valued & respected by the community members, as evidenced by strong ICCA-related institutions, champions and leaders. (strong if respected by virtually everyone; medium if well respected but not by all; weak if management decisions about ICCAs go very often disrespected)</p>	<p>(5) Institutions are in place and respected by virtually everyone.</p> <p>(4) Some institutions in place and respected by virtually everyone.</p> <p>(3) Some institutions are in place and well respected, but not by all and need to be strengthened.</p> <p>(2) Some institutions exist, but their respect and influence are diminishing.</p> <p>(1) Institutions and appropriate management decisions regarding the ICCA go very often disrespected.</p>	5	5
2.2	<p>Community engagement in decision-making, as evidenced by the participation of different sections of the population (strong if major issues are only decided by consensus by a general assembly or equivalent body; medium if local decisions are usually debated and taken by majority votes; weak if the community never has general assemblies and meetings)</p>	<p>(5) Major issues are only decided by consensus by a general assembly or equivalent body.</p> <p>(4) Major issues are only decided by consensus, and the consultation / engagement of different sections of the population.</p> <p>(3) Major issues are debated, and local decisions are usually taken by majority vote.</p> <p>(2) Decisions made by a group of local elders.</p> <p>(1) Decisions made by a small and influential part of the population.</p>	4	5
2.3	<p>Community cohesion and solidarity, as evidenced by a sense of common identity, mutual help and respect. (strong if the community is proud of its identity and demonstrates in practice its own internal solidarity and aliveness; medium if there are sporadic cases of local destitution and abandonment (lack of solidarity) but people still participate in common festivities and initiatives; weak if local destitution and abandonment are frequent and common festivities and initiatives virtually non-existent)</p>	<p>(5) The community is proud of its identity and demonstrates in practice its own internal solidarity and aliveness.</p> <p>(4) The majority of the local community is proud of its identity and demonstrates in practice mutual help and respect.</p> <p>(3) Exist sporadically and initiatives need to be safeguarded/improved.</p> <p>(2) Exist sporadically and they weaken.</p> <p>(1) Local destitution and abandonment are frequent and common festivities and initiatives virtually non-existent.</p>	4	3
2.4	<p>Effective enforcement of rules, as evidenced by local rules concerning a variety of aspects of community life (not only the ICCA) being well-known and respected. (strong if rules are well known and infractions by members of the community virtually absent; medium if</p>	<p>(5) Rules are well known by everyone and infractions by members of the community virtually absent.</p> <p>(4) The majority of people are aware and infractions committed by community members are rare.</p> <p>(3) They are generally known (by about half the people) & infractions infrequent.</p>	3	3

	they are generally known & infractions infrequent; weak if rules are largely unknown / disrespected)	(2) Usually known by a small group, and there are significant cases of infractions. (1) Rules are largely unknown / disrespected.		
2.5	Transparency and accountability, as evidenced by: 1. information on local decision-making readily and widely available; 2. sound technical and financial management, technical archives and financial accounting procedures in place and readily available; 3. evaluations regularly performed; etc. (strong if there is excellent respect of agreed procedures and satisfaction of criteria such as the four just mentioned; medium if only some criteria are respected; weak if all these aspects of decision-making are unheard of)	(5) There is excellent respect of agreed procedures and satisfaction of criteria such as the four just mentioned. (4) Proper procedures in place, and decisions and information easily accessible. (3) Only a few groups / sections of the population know and have access to information. (2) People are unclear and information irregularly made accessible. (1) All these aspects of decision-making are unheard of.	4	5
3. Conservation of nature and sustainable livelihoods				
3.1	Status of ecosystems in the ICCA, as evidenced by indicators such as integrity of forest areas; status of soil; quality and quantity of freshwater in and from the ICCA; abundance and vigour of endemic biodiversity. (strong if the ecosystems are thriving; medium if the ecological balance is uncertain; weak if the area is severely degraded and prone to disasters)	(5) The ecosystems are thriving. (4) Good condition / intact and stable. (3) The ecological balance is uncertain. (2) Ecosystems are affected by different pressures. (1) The area is severely degraded and prone to disasters.	4	3
3.2	Status of ecosystems in the surroundings of the ICCA, as evidenced by indicators such as the ones noted above in areas bordering with the ICCA. (strong if thriving; medium if the ecological balance is uncertain; weak if the areas are severely degraded and prone to disasters)	(5) The ecosystems are thriving. (4) Good condition / intact and stable. (3) The ecological balance is uncertain. (2) Ecosystems are affected by different pressures. (1) The area is severely degraded and prone to disasters.	4	2
3.3	Quality of livelihoods for the community governing the ICCA, as evidenced by material indicators, e.g. food sovereignty, wealth per capita and public health.	(5) The population has a satisfactory standard of living, access to quality health and education, good income and no poverty. (4) The population has a fairly good standard of living, access to basic health and education, and no poverty. (3) There are some uncertainties and limited access to health and education facilities. (2) A significant part of the population has a low standard of living, with limited access to health and education facilities. (1) High poverty rate and limited or non-existent access to health and education infrastructure.	2	3
4. Resilience and security versus internal threats				
4.1	Extent of community members migrating outside the areas negatively affecting the ICCA. (strong if there is hardly any permanent outside migration; medium if many leave and some do come back; weak if basically all the youth leaves the area to work or study and none comes back (depopulation))	(5) There is no external migration that negatively affects the ICCA. There is hardly any permanent outside migration. (4) Only a few migrate for temporary jobs and return. (3) Many leave, and some do come back.; young people generally leave to study and return.	4	3

		(2) More and more people are migrating, and the trend is upward. (1) People are migrating out of the area; basically, all the youth leaves the area to work or study and none comes back (depopulation).		
4.2	Evidence of rapid cultural change as evidenced by the loss of important traditional values, traditional knowledge and the degeneration of local festivals and language (related to national assimilation policies, influences of globalization, education curricula disrespectful of customary values and institutions, changing ethnic composition because of extensive migration, etc.) (strong if local mores stay strong and able to interpret and incorporate all novelties and change; medium if some elements of local culture are lost but others remain alive; weak if even local languages and concepts are being weakened and abandoned)	(5) Important local values, festivals, languages are intact and fundamentally unchanged. Local mores stay strong and able to interpret and incorporate all novelties and change. (4) No significant influence on important traditional values, customs and traditions, traditional knowledge, festivals and languages. (3) Changes occur but are easily incorporated into the local cultural framework. Some elements of local culture are lost, but others remain alive. (2) Weakening or loss of important local values, festivals and language. (1) Loss of important traditional values, even local festivals, traditional knowledge and languages.	4	4
4.3	Evidence of rapid changes in economic lifestyles and aspirations. (strong if no change appears apparent and/or desired; medium if new aspirations and lifestyles appear to blend with customary ones; weak if change is widespread and disruptive of culture and customary values)	(5) No apparent and/or desired change in economic lifestyles and local aspirations. (4) No significant changes or changes in local lifestyles and aspirations. (3) New aspirations and lifestyles appear to blend with customary ones. (2) Growing trend of negative change in economic lifestyles and aspirations. (1) Change is widespread and disruptive of culture and customary values.	4	3
4.4	Evidence of political/ social fragmentation, as revealed by political and social differences well apparent within the community. (strong if the community is very united behind some common social and political objectives; medium if sharp socio-political differences exist but most of them are respectfully dealt with; weak if disrespectful behaviour and violence among community members are common)	(5) The community is very united behind some common social and political objectives. (4) No strong unity, but at the same time no visible difference. (3) Sharp socio-political differences exist, but most of them are respectfully dealt with. (2) Leading to disrespectful behaviour. (1) Disrespectful behaviour and violence among community members are common.	5	3
4.5	Evidence of internal inequities, conflicts and crimes, including gender-related and age-related. (strong if internal inequities and conflicts are unheard of; medium if they exist but are uncommon; weak if they are widespread, and conflicts and crimes are frequent)	(5) Internal conflicts and crimes are unheard of. (4) Internal conflicts and/or negligible crimes. (3) Few cases of internal conflicts and/or crimes exist, but are uncommon and easily solved. (2) Growing trend in internal conflicts and/or crimes. (1) Internal inequities are widespread, and conflicts and crimes are frequent.	3	3
External factors				
5. Tenure and recognition				
5.1	ICCA recognised and respected by neighbouring communities.	5) Recognised and respected by all neighbouring communities.	4	4

	(strong if by all neighbouring communities; medium if only by about a half; weak if by none)	(4) By most neighbouring communities. (3) By about half of the neighbouring communities. (2) By some neighbouring communities. (1) Recognised and respected by none.		
5.2	Collective territorial, land, water and natural resource rights (ownership and/or use) recognised by civil society in general and national/ international NGOs, e.g. through provision of support and public acknowledgement and respect. (strong if specific campaigns and support action have been taken; medium if there are uncertainties and relatively small disputes; weak if no recognition is apparent)	(5) Strong recognition and support from a wide range of society and NGOs, and specific campaigns and support action have been taken. (4) The majority of NGOs and civil society recognise and support the rights. (3) Equitable level of recognition and support from NGOs and civil society. (2) Limited or sporadic recognition and support. (1) No recognition is apparent.	4	4
5.3	Collective territorial, land, water and natural resource rights (ownership and/or use) <i>de facto</i>/ informally recognised by state agencies (e.g. through coordination of management activities, public acknowledgement and respect by government officials, etc.) (strong if collaboration is positive, respectful, has been happening for a long time and/or is also being recognised <i>de jure</i> ; medium if there are uncertainties and relatively small disputes; weak if collaboration instances are absent)	(5) Collaboration is positive, respectful, has been happening for a long time and/or is also being recognised <i>de jure</i> . (4) Collaboration is positive, very respectful, has been going on for a long time and/or is recognised <i>de jure</i> . (3) There are uncertainties and relatively small disputes. (2) Fairly weak / weakening. (1) Collaboration instances are absent.	4	4
5.4	ICCA status formally recognised in state law and policy and government support. (strong if the government formally recognises the ICCA under the common property of the relevant community; medium if legislation is unclear but support can be argued for; weak if government does not recognise customary and/or local institutions, does not help to enforce customary laws and locally-agreed rules and actually does or try to impose government-managed conservation schemes)	(5) A legal status reflected and recognised by law and state policy, and good government support. The government formally recognises the ICCA under the common property of the relevant community. (4) Official support and recognition by government is not explicitly reflected in law and policy. (3) Legislation is unclear, but support can be argued for. (2) Government does not recognise customary and/or local institutions, nor does it assist in the implementation of customary laws and locally agreed rules. (1) Government does not recognise customary and/or local institutions, does not help to enforce customary laws and locally agreed rules and actually does or tries to impose government-managed conservation schemes.	4	4
6. Appropriate level of support from third parties/groups (i.e. balance between demanded and received support)				
6.1	Political support from outsiders, e.g., advocacy by outside actors for the rights of the community. The assessment here is delicate, as it needs to examine whether the local community concerned want and desire "political" support or prefers autonomy and no outside interference; your score may thus be assigned depending on a balance between desired and obtained support. i.e., the assessment is strong (score=5) if no support is desired and no support is received or much support is	(5) No support is desired, and no support is received, or much support is needed and much is received. (4) Fairly good support is received, as desired. (3) Only part of what is desired / needed is received. (2) Uncertain and intermittent. (1) The community receives much <i>undesired</i> political attention or no attention despite a strong felt need for it.	3	3

	needed and much is received; the assessment is medium (score=3) if only part of what is needed is received; the assessment is weak (score=1), if the community receives much <i>undesired</i> political attention or no attention despite a strong felt need for it.			
6.2	Economic support from outsiders , e.g., in terms of financial resources and/or in-kind support provided to the community for a variety of initiatives. (again, the assessment from strong to weak depends on a balance between desired and obtained support , as for the previous factor)	(5) No support is desired, and no support is received, or much support is needed and much is received. (4) Fairly good support is received, as desired. (3) Only part of what is desired/needed is received. (2) Uncertain and intermittent. (1) The community receives much <i>undesired</i> political attention or no attention despite a strong felt need for it.	3	3
6.3	Technical support from outsiders , e.g. for biodiversity inventories, legal advice, etc. (again, the assessment from strong to weak depends on a balance between desired and obtained support , as for the previous factor)	(5) Strong support as desired. (4) Support strong enough as desired. (3) Average support as desired. (2) Relatively weak support. (1) Little or no support.	3	2
6.4	Cultural recognition , e.g., understanding and respect of the cultural and identity values motivating the community. (strong if local language & other cultural expressions are openly valued & included in school curricula, are used in government meetings, and are well recognised by society in general; medium if they are unevenly respected by governmental agencies and others; weak if they are mostly ignored)	(5) Culture and identity, local language & other cultural expressions are openly valued & included in school curricula, are used in government meetings, and are well recognised by society in general. (4) Culture and identity are valued and people are proud to use and promote them. (3) Culture and identity are enough valued but unevenly respected by governmental agencies and others. (2) No government support and no objection to their use on official and public occasions. (1) Local language and other cultural expressions are mostly ignored.	4	2
7. Resilience and security versus external threats				
7.1	Major economic forces coveting the ICCA , including for extractive industries, the development of major infrastructure, mass tourism, industrial fishing and agriculture, biofuels, conservation initiatives, etc. (strong if none exists at the moment; medium if such forces are there, but the government does not support them; weak if they exist in the area and operate in alliance with the national government)	(5) None exists at the moment. (4) Imminent in the future. (3) Such forces are there, but the government does not support them. (2) Few exist but no support or alliance with the national government. (1) They exist in the area and operate in alliance with the national government.	3	2
7.2	Settlers, migrants and refugees have a negative impact on the ICCA , coveting the ICCA's land and resources. (strong if they are absent; medium if few and operating alone; weak if they are many and with government support)	(5) Totally absent. (4) Imminent in the future. (3) Few and operating alone. (2) Some with government support. (1) They are many and with government support.	5	5
7.3	Major environmental threats to the ICCA, such as pollution, widespread invasive species or current/expected severe effects of climate change.	(5) No such threats are apparent or expected to take place. (4) Uncertain, unclear and unspecific.	3	3

	(strong if no such threats are apparent or expected to take place; medium if uncertain, unclear and unspecific; weak if clearly apparent and severe)	(3) Such threats emerge (appear). (2) Some visible environmental threats. (1) Clearly apparent and severe.		
7.4	Threats to the ICCA related to war, violent conflicts and crime, such as because of guerrilla and counterinsurgency operations in the area (strong if no such threats are apparent or expected; medium if uncertain, unclear and unspecific; weak if they are clearly apparent and severe)	(5) No such threats are apparent or expected to take place. (4) Uncertain, unclear and unspecific. (3) Such threats emerge (appear). (2) Some visible environmental threats. (1) Clearly apparent and severe.	5	5
ICCA Resilience/Security Index = Total Score (Average Score 1 + 2 + 3 + 4 + 5 + 6 + 7)/35 x 100			68%	63%

TAMEJLOUCHT

Resilience Index Workshops in Tamejloucht. Men's self-assessment regarding the main internal and external factors related to the local community (LC), *agdal*, governance and resilience.

<i>The "ICCA Resilience and Security Tool": TAMEJLOUCHT - Sidi Abdallah Bouchouari (Anti-Atlas)</i>			<i>Men</i>
			<i>09</i>
Internal factors			
1. Connection between the local community and the ICCA			
1.1	ICCA's cultural, spiritual and other non-material values appreciated by the community as evidenced by the ICCA being part of their worldview and identity and/or being culturally or religiously important. (strong if ICCA-related values are virtually universally known and appreciated; medium if held by about half of the people in the community; weak if basically lost)	(5) Values are virtually universally known and appreciated in the local context. (4) Values held and appreciated by most people in the community. (3) Values held by about half of the people in the community. (2) Values held by only a small part of the population and degenerating. (1) Values basically lost.	4
1.2	ICCA's values for the conservation of biological diversity appreciated by the community , as evidenced by endemic species & ecosystem functions being well known & appreciated/protected. (strong if most people in the community are knowledgeable and active in conservation; medium if about half of the people are concerned and active; weak if most local people appear insensitive to current or potential ecological change)	(5) Nearly everyone in the community are knowledgeable and active in conservation. (4) Most people in the community are knowledgeable and active in conservation. (3) About half of the people are concerned and active. (2) Only a part of the population is aware and concerned, and it is declining. (1) Most local people appear insensitive to current or potential ecological change.	4
1.3	ICCA's subsistence & economic values appreciated by the local community (and measures to protect key ecosystem services) e.g. being a well-known and utilised source of food, water, income or providing protection from environmental disasters.	(5) Basically, everyone knows about essential services and is taking the right steps to safeguard them. (4) The majority of people are aware, and some measures are taken to protect essential services. (3) By about half of people are aware of the services and benefits and wish to safeguard them.	3

	(strong if basically everyone knows about essential services of the ICCA; medium if by about half of people are aware of the services and benefits; weak if most members of the community are not aware of the services and benefits from it)	(2) A small part of people are aware of this and want to safeguard them. (1) People are not aware of the services and benefits and there are no safeguards to protect them.	
1.4	Age of relationship between the ICCA and the community. (strong if over 100 years old; medium if less than 50 years old; weak if is less than 10 years old)	(5) Over 100 years old. (4) About 51 to 100 years old. (3) About 26 to 50 years old. (2) About 11 to 25 years old. (1) Less than 10 years old.	5
1.5	Strength of relationship between the ICCA and the community (i.e. intensity and continuity of attachment to their ICCA) (strong is both elders, youth, men and women are engaged in caring for the ICCA; medium if there is a strong involvement of community elders and adults or the youth; weak if only very few individuals seem to care about the ICCA)	(5) Everyone, both elders, youth; men and women are engaged in caring for the ICCA. (4) The majority of the community, including women and young people, are engaged in. (3) There is a strong involvement of community elders, adults and certain young people of the community. (2) Only the elders and adults. (1) Only very few individuals seem to care about the ICCA.	5
2. Governance of the ICCA			
2.1	ICCA decision-making valued & respected by the community members, as evidenced by strong ICCA-related institutions, champions and leaders. (strong if respected by virtually everyone; medium if well respected but not by all; weak if management decisions about ICCAs go very often disrespected)	(5) Institutions are in place and respected by virtually everyone. (4) Some institutions in place and respected by virtually everyone. (3) Some institutions are in place and well respected, but not by all and need to be strengthened. (2) Some institutions exist, but their respect and influence are diminishing. (1) Institutions and appropriate management decisions regarding the ICCA go very often disrespected.	1
2.2	Community engagement in decision-making, as evidenced by the participation of different sections of the population (strong if major issues are only decided by consensus by a general assembly or equivalent body; medium if local decisions are usually debated and taken by majority votes; weak if the community never has general assemblies and meetings)	(5) Major issues are only decided by consensus by a general assembly or equivalent body. (4) Major issues are only decided by consensus, and the consultation / engagement of different sections of the population. (3) Major issues are debated, and local decisions are usually taken by majority vote. (2) Decisions made by a group of local elders. (1) Decisions made by a small and influential part of the population.	3
2.3	Community cohesion and solidarity, as evidenced by a sense of common identity, mutual help and respect. (strong if the community is proud of its identity and demonstrates in practice its own internal solidarity and aliveness; medium if there are sporadic cases of local destitution and abandonment (lack of solidarity) but people still participate in common festivities and initiatives; weak if local destitution and abandonment are frequent and common festivities and initiatives virtually non-existent)	(5) The community is proud of its identity and demonstrates in practice its own internal solidarity and aliveness. (4) The majority of the local community is proud of its identity and demonstrates in practice mutual help and respect. (3) Exist sporadically and initiatives need to be safeguarded/improved. (2) Exist sporadically and they are weakened.	2

		(1) Local destitution and abandonment are frequent and common festivities and initiatives virtually non-existent.	
2.4	Effective enforcement of rules, as evidenced by local rules concerning a variety of aspects of community life (not only the ICCA) being well-known and respected. (strong if rules are well known and infractions by members of the community virtually absent; medium if they are generally known & infractions infrequent; weak if rules are largely unknown / disrespected)	(5) Rules are well known by everyone and infractions by members of the community virtually absent. (4) The majority of people are aware and infractions committed by community members are rare. (3) They are generally known (by about half the people) & infractions infrequent. (2) Usually known by a small group, and there are significant cases of infractions. (1) Rules are largely unknown / disrespected.	4
2.5	Transparency and accountability, as evidenced by: 1. information on local decision-making readily and widely available; 2. sound technical and financial management, technical archives and financial accounting procedures in place and readily available; 3. evaluations regularly performed; etc. (strong if there is excellent respect of agreed procedures and satisfaction of criteria such as the four just mentioned; medium if only some criteria are respected; weak if all these aspects of decision-making are unheard of)	(5) There is excellent respect of agreed procedures and satisfaction of criteria such as the four just mentioned. (4) Proper procedures in place, and decisions and information easily accessible. (3) Only a few groups / sections of the population know and have access to information. (2) People are unclear and information irregularly made accessible. (1) All these aspects of decision-making are unheard of.	5
3. Conservation of nature and sustainable livelihoods			
3.1	Status of ecosystems in the ICCA, as evidenced by indicators such as integrity of forest areas; status of soil; quality and quantity of freshwater in and from the ICCA; abundance and vigour of endemic biodiversity. (strong if the ecosystems are thriving; medium if the ecological balance is uncertain; weak if the area is severely degraded and prone to disasters)	(5) The ecosystems are thriving. (4) Good condition/intact and stable. (3) The ecological balance is uncertain. (2) Ecosystems are affected by different pressures. (1) The area is severely degraded and prone to disasters.	2
3.2	Status of ecosystems in the surroundings of the ICCA, as evidenced by indicators such as the ones noted above in areas bordering with the ICCA. (strong if thriving; medium if the ecological balance is uncertain; weak if the areas are severely degraded and prone to disasters)	(5) The ecosystems are thriving. (4) Good condition / intact and stable. (3) The ecological balance is uncertain. (2) Ecosystems are affected by different pressures. (1) The area is severely degraded and prone to disasters.	2
3.3	Quality of livelihoods for the community governing the ICCA, as evidenced by material indicators, e.g. food sovereignty, wealth per capita and public health.	(5) The population has a satisfactory standard of living, access to quality health and education, good income and no poverty. (4) The population has a fairly good standard of living, access to basic health and education, and no poverty. (3) There are some uncertainties and limited access to health and education facilities. (2) A significant part of the population has a low standard of living, with limited access to health and education facilities. (1) High poverty rate and limited or non-existent access to health and education infrastructure.	2
4. Resilience and security versus internal threats			

4.1	<p>Extent of community members migrating outside the areas negatively affecting the ICCA.</p> <p>(strong if there is hardly any permanent outside migration; medium if many leave and some do come back; weak if basically all the youth leaves the area to work or study and none comes back (depopulation))</p>	<p>(5) There is no external migration that negatively affects the ICCA. There is hardly any permanent outside migration.</p> <p>(4) Only a few migrate for temporary jobs and return.</p> <p>(3) Many leave, and some do come back.; young people generally leave to study and return.</p> <p>(2) More and more people are migrating, and the trend is upward.</p> <p>(1) People are migrating out of the area; basically, all the youth leave the area to work or study and none come back (depopulation).</p>	1
4.2	<p>Evidence of rapid cultural change as evidenced by the loss of important traditional values, traditional knowledge and the degeneration of local festivals and language (related to national assimilation policies, influences of globalization, education curricula disrespectful of customary values and institutions, changing ethnic composition because of extensive migration, etc.)</p> <p>(strong if local mores stay strong and able to interpret and incorporate all novelties and change; medium if some elements of local culture are lost but others remain alive; weak if even local languages and concepts are being weakened and abandoned)</p>	<p>(5) Important local values, festivals, languages are intact and fundamentally unchanged. Local mores stay strong and able to interpret and incorporate all novelties and change.</p> <p>(4) No significant influence on important traditional values, customs and traditions, traditional knowledge, festivals and languages.</p> <p>(3) Changes occur but are easily incorporated into the local cultural framework. Some elements of local culture are lost, but others remain alive.</p> <p>(2) Weakening or loss of important local values, festivals and language.</p> <p>(1) Loss of important traditional values, even local festivals, traditional knowledge and languages.</p>	3
4.3	<p>Evidence of rapid changes in economic lifestyles and aspirations.</p> <p>(strong if no change appears apparent and/or desired; medium if new aspirations and lifestyles appear to blend with customary ones; weak if change is widespread and disruptive of culture and customary values)</p>	<p>(5) No apparent and/or desired change in economic lifestyles and local aspirations.</p> <p>(4) No significant changes or changes in local lifestyles and aspirations.</p> <p>(3) New aspirations and lifestyles appear to blend with customary ones.</p> <p>(2) Growing trend of negative change in economic lifestyles and aspirations.</p> <p>(1) Change is widespread and disruptive of culture and customary values.</p>	2
4.4	<p>Evidence of political/ social fragmentation, as revealed by political and social differences well apparent within the community.</p> <p>(strong if the community is very united behind some common social and political objectives; medium if sharp socio-political differences exist but most of them are respectfully dealt with; weak if disrespectful behaviour and violence among community members are common)</p>	<p>(5) The community is very united behind some common social and political objectives.</p> <p>(4) No strong unity, but at the same time no visible difference.</p> <p>(3) Sharp socio-political differences exist, but most of them are respectfully dealt with.</p> <p>(2) Leading to disrespectful behaviour.</p> <p>(1) Disrespectful behaviour and violence among community members are common.</p>	3
4.5	<p>Evidence of internal inequities, conflicts and crimes, including gender-related and age-related.</p> <p>(strong if internal inequities and conflicts are unheard of; medium if they exist but are uncommon; weak if they are widespread, and conflicts and crimes are frequent)</p>	<p>(5) Internal conflicts and crimes are unheard of.</p> <p>(4) Internal conflicts and/or negligible crimes.</p> <p>(3) Few cases of internal conflicts and/or crimes exist, but are uncommon and easily solved.</p> <p>(2) Growing trend in internal conflicts and/or crimes.</p> <p>(1) Internal inequities are widespread, and conflicts and crimes are frequent.</p>	4

External factors			
5. Tenure and recognition			
5.1	ICCA recognised and respected by neighbouring communities. (strong if by all neighbouring communities; medium if only by about a half; weak if by none)	5) Recognised and respected by all neighbouring communities. (4) By most neighbouring communities. (3) By about half of the neighbouring communities. (2) By some neighbouring communities. (1) Recognised and respected by none.	4
5.2	Collective territorial, land, water and natural resource rights (ownership and/or use) recognised by civil society in general and national/ international NGOs, e.g. through provision of support and public acknowledgement and respect. (strong if specific campaigns and support action have been taken; medium if there are uncertainties and relatively small disputes; weak if no recognition is apparent)	(5) Strong recognition and support from a wide range of society and NGOs, and specific campaigns and support action have been taken. (4) The majority of NGOs and civil society recognise and support the rights. (3) Equitable level of recognition and support from NGOs and civil society. (2) Limited or sporadic recognition and support. (1) No recognition is apparent.	2
5.3	Collective territorial, land, water and natural resource rights (ownership and/or use) <i>de facto</i>/ informally recognised by state agencies (e.g. through coordination of management activities, public acknowledgement and respect by government officials, etc.) (strong if collaboration is positive, respectful, has been happening for a long time and/or is also being recognised <i>de jure</i> ; medium if there are uncertainties and relatively small disputes; weak if collaboration instances are absent)	(5) Collaboration is positive, respectful, has been happening for a long time and/or is also being recognised <i>de jure</i> . (4) Collaboration is positive, very respectful, has been going on for a long time and/or is recognised <i>de jure</i> . (3) There are uncertainties and relatively small disputes. (2) Fairly weak / weakening. (1) Collaboration instances are absent.	5
5.4	ICCA status formally recognised in state law and policy and government support. (strong if the government formally recognises the ICCA under the common property of the relevant community; medium if legislation is unclear but support can be argued for; weak if government does not recognise customary and/or local institutions, does not help to enforce customary laws and locally-agreed rules and actually does or try to impose government-managed conservation schemes)	(5) A legal status reflected and recognised by law and state policy, and good government support. The government formally recognises the ICCA under the common property of the relevant community. (4) Official support and recognition by government is not explicitly reflected in law and policy. (3) Legislation is unclear, but support can be argued for. (2) Government does not recognise customary and/or local institutions, nor does it assist in the implementation of customary laws and locally agreed rules. (1) Government does not recognise customary and/or local institutions, does not help to enforce customary laws and locally agreed rules and actually does or try to impose government-managed conservation schemes.	3
6. Appropriate level of support from third parties/groups (i.e. balance between demanded and received support)			
6.1	Political support from outsiders, e.g., advocacy by outside actors for the rights of the community. The assessment here is delicate, as it needs to examine whether the local community	(5) No support is desired, and no support is received, or much support is needed and much is received. (4) Fairly good support is received, as desired.	3

	concerned want and desire "political" support or prefers autonomy and no outside interference; your score may thus be assigned depending on a balance between desired and obtained support . i.e., the assessment is strong (score=5) if no support is desired and no support is received or much support is needed and much is received; the assessment is medium (score=3) if only part of what is needed is received; the assessment is weak (score=1), if the community receives much <i>undesired</i> political attention or no attention despite a strong felt need for it.	(3) Only part of what is desired / needed is received. (2) Uncertain and intermittent. (1) The community receives much <i>undesired</i> political attention or no attention despite a strong felt need for it.	
6.2	Economic support from outsiders , e.g., in terms of financial resources and/or in-kind support provided to the community for a variety of initiatives. (again, the assessment from strong to weak depends on a balance between desired and obtained support , as for the previous factor)	(5) No support is desired, and no support is received, or much support is needed and much is received. (4) Fairly good support is received, as desired. (3) Only part of what is desired / needed is received. (2) Uncertain and intermittent. (1) The community receives much <i>undesired</i> political attention or no attention despite a strong felt need for it.	1
6.3	Technical support from outsiders , e.g. for biodiversity inventories, legal advice, etc. (again, the assessment from strong to weak depends on a balance between desired and obtained support , as for the previous factor)	(5) Strong support as desired. (4) Support strong enough as desired. (3) Average support as desired. (2) Relatively weak support. (1) Little or no support.	3
6.4	Cultural recognition , e.g., understanding and respect of the cultural and identity values motivating the community. (strong if local language & other cultural expressions are openly valued & included in school curricula, are used in government meetings, and are well recognised by society in general; medium if they are unevenly respected by governmental agencies and others; weak if they are mostly ignored)	(5) Culture and identity, local language & other cultural expressions are openly valued & included in school curricula, are used in government meetings, and are well recognised by society in general. (4) Culture and identity are valued and people are proud to use and promote them. (3) Culture and identity are enough valued but unevenly respected by governmental agencies and others. (2) No government support and no objection to their use on official and public occasions. (1) Local language and other cultural expressions are mostly ignored.	3
7. Resilience and security versus external threats			
7.1	Major economic forces coveting the ICCA , including for extractive industries, the development of major infrastructure, mass tourism, industrial fishing and agriculture, biofuels, conservation initiatives, etc. (strong if none exists at the moment; medium if such forces are there, but the government does not support them; weak if they exist in the area and operate in alliance with the national government)	(5) None exists at the moment. (4) Imminent in the future. (3) Such forces are there, but the government does not support them. (2) Few exist but no support or alliance with the national government. (1) They exist in the area and operate in alliance with the national government.	1
7.2	Settlers, migrants and refugees have a negative impact on the ICCA , coveting the ICCA's land and resources. (strong if they are absent; medium if few and operating alone; weak if they are many and with government support)	(5) Totally absent. (4) Imminent in the future. (3) Few and operating alone. (2) Some with government support.	5

		(1) They are many and with government support.	
7.3	Major environmental threats to the ICCA, such as pollution, widespread invasive species or current/expected severe effects of climate change. (strong if no such threats are apparent or expected to take place; medium if uncertain, unclear and unspecific; weak if clearly apparent and severe)	(5) No such threats are apparent or expected to take place. (4) Uncertain, unclear and unspecific. (3) Such threats emerge (appear). (2) Some visible environmental threats. (1) Clearly apparent and severe.	2
7.4	Threats to the ICCA related to war, violent conflicts and crime, such as because of guerrilla and counterinsurgency operations in the area (strong if no such threats are apparent or expected; medium if uncertain, unclear and unspecific; weak if they are clearly apparent and severe)	(5) No such threats are apparent or expected to take place. (4) Uncertain, unclear and unspecific. (3) Such threats emerge (appear). (2) Some visible environmental threats. (1) Clearly apparent and severe.	5
	ICCA Resilience/Security Index = Total Score (Average Score 1 + 2 + 3 + 4 + 5 + 6 + 7)/35 x 100		53%

V. Glossary of terms in Tashelhit

I include a glossary of terms in Tashelhit used in the text for clarity, and due to the multiplicity of frequent translations and synonyms from local languages (i.e. Tashelhit and sometimes Arabic) into French or English.

GENERAL:

Imazighen	(sing. m. Amazigh; sing. f. Tamazight)
Ishelhin	(sing. m. Ashelhi; sing. f. Tashelhit)
	Tashelhit/Berber linguistic group. Tashelhit is also spelled as Tashelhiyt in English.
Berber	Is a common synonym of Amazigh, frequently perceived as pejorative by local populations of the study area.
Chleuh	Is a common French synonym for Imazighen people.
Caïd	Qaïd; Caïdat.
	A Muslim civil servant with the functions of judge, administrator and chief of police at the Caïdat (district) level. The word caïd means leader, guide or warlord.
Douar	Village.
Taqbilt	Sub-tribe or small tribe.
Ameqqun	Confederation of tribes consisting of sedentary Imazighen.
Iboudraren	(sing. m. Aboudrar; sing. f. Taboudrart) ibudrarn.
	Mountain people.
Moussem	Regional term for the festivities to open and close the <i>agdal</i> season. It literally means meeting or gathering.

RELATED TO TISSKJI CASE STUDY:

Ida Outanane is an ancient confederation of three tribes which is spelled in different ways and which gives name to the geographical region where it was historically located. They are neighbours to the Haha tribe (in the NW).

Ihahan	Haha , confederation of tribes of Essaouira plain/region.
Id aw Tanan	Ida Outanane , Ida Ou Tanane, Ida Outanan, Idawtanane or Id-aw-Tanan.
	The confederation of tribes of Ida Outanane, in the Imouzzer Ida Outanane region, includes three tribes: Ait Tankirt, Ait Ouazoun and Ifss Fassn.
	Tankirt , Ait Tankirt, Tinkert, Tinkirt, Tankert

Ait Ouazoun, Waâzoun, Ouaazoun, Ouzzoun

Ifss Fassn, Ifesfassen, Ifsfasen, Ifesfaten. Ifesfassen is the name of the local forest too.

Surrounding villages to Tiskji:

Tiskji, Tiskji

Tidili

Timkti

Togro, Toukrou

Targoa injaf, Targa Injâaf

Tagmit, **Tagnit**, Tagounit

Ait Oanlla, Ait Oualla, Ait Oualah, **Ait Waâlla**

Lmjddid, Lmjdidc, Lmjdid, Mjdid

Rural communes of the Caïdat Imouzzer:

Imouzzer

Tiqqi, Tiki

Tadrart, Taddart

Aziar, Azyar

RELATED TO TAMEJLOUCHT CASE STUDY:

Achtouken Confederation of tribes of Chtouka plain.

Ait Quadrim tribe Big tribe belonging to the Chtouka confederation of tribes.

Ait Ouaghzen tribe Ait Ouaghzen, Ait Ouarzen.

Small tribe or Taqbilt to which Tamejloucht belongs (through the Ait Diwan fraction tribe). Within the Taqbilt Ait Ouaghzen are: Mektar, Ait Zaouit, Agdal, Ouzzin, Tigrart, plus other 11 Taqbilt nearby.

Surrounding villages to Tamejloucht:

Tamejloucht, Tamjloucht, Tamjloujt, Tamjlajte

Mektar, Maktar, Moktar

Ait Zaouit

Agdal

Ouzzin, **Ouzdijen**, Ouzdiyen

Tigrart, **Tigourar**, Tiguourar

Tin Abdelah Outalb

Local agropastoral terms:

Tafgourt	Local term for agdal. Also, very often people use the word “Argan” as a synonym of agdal. For example, they usually talk about “argan closing” and “argan opening”.
Almougar	Also “almuggar” or “almuqqar” Local term for the festivities to open and close the agdal season (regionally called Mousseem)
Aâzib, Azib	Also Tiglay Sheepfold
Tagloyt, Taglouyt	Also Tagrourt or Takrit. They are all common infrastructures for animals in or around private houses in Tamejloucht. In Spanish corral, corraliza.
Iferd	Wells or reservoirs with drinking troughs.
Tiferwin	Drinking troughs.
Tanutfi	Traditional reservoirs that collect rainwater after a process of water filtering (i.e. assaght) inside houses.