UNIL | Université de Lausanne
Faculté des géosciences
et de l'environnement

Master of Science in Geography

The Tanzanian Beekeeping Zone model: when actors' environmentalities reconcile to turn traditional beekeepers into environmental subjects

Hélène Weber

Sous la direction du Prof. René Véron

Maîtrise universitaire ès sciences en géographie | Août - 2013

ACKNOWLEDGMENTS

First and foremost I would like to thank ADAP staff for their time and acceptance of my fieldwork concerning one of their programs. This thesis would not have been possible without your consent and assistance, and I hope that this thesis, as a contribution to the critical study of community-based natural resources management regimes, will be received favorably and will be useful for your activities. In particular I would like to thank Jean-Felix Savary, the former program officer of the Mlele Beekeeping Zone project in Geneva; Yves Hausser, the program coordinator in Geneva, Ezra Ricci, the treasurer in Geneva and Henry-Felix Ogejo, the former program officer in Mlele. Working for ADAP since the beginning of the association, they provided me with useful information regarding the Tanzanian context and the ADAP's program over time. In addition, I would like to thank Florian Reinhard, current program officer in Geneva, who provided me with the latest information concerning the Beekeeping Zone implementation process.

I would like to extend my thanks to my supervisor at the University of Lausanne, René Véron, for his constructive comments and editing throughout the writing process.
Finally I want to express my gratitude to Titus Haenni for his editing skills, English not being my mother tongue.

Special thanks are extended to the Social Fund of the University of Lausanne for economic support throughout my MSc studies, without which this degree would not have been possible.

ABSTRACT

Successes in community-based natural resources management remain few despite decades of experimentation. Goals are rarely met, but the interventions inevitably have an effect on the people involved in management.

Based on an analysis of power relations and *environmentalities*, this thesis investigates the outcomes of a community-based natural resources management project in Mlele district, Tanzania. Prior to the project, local communities, and especially beekeepers, used the surrounding Forest Reserves to establish apiaries and hunt for bush meat. Refusing to comply with the State's forest and wildlife regulations, considered therefore as poachers or encroachers, they were regularly involved in conflicts with anti-poaching operations.

However, the situation changed in the 2000s with the launching of a project by a Swiss non-governmental organization, aiming at creating a Beekeeping Zone and involving the local communities in natural resources management. This project led actors to change their environmental values and adopt a new behavior and commitment toward natural resources conservation. Today, part of the conflicts are eased, as some villagers espoused the discourse promoted by the forest and wildlife administration and the non-governmental organization regarding conservation and natural resources profitability. They now collaborate with local government officers to enforce regulation on natural resources uses, which indicates the development of an *intimate government*. Some local members of local communities become self-disciplined and now seek to protect natural resources and turn them into a source of financial income.

The case of Mlele district reveals how *subjectivation* causes long term effects on natural resources policies and use practices. It draws attention to the fact that management systems are characterized by distinct *environmentalities*, which reconcile to turn villagers into *eco-rational* subjects. However, this case also shows that this process does not eliminate the opportunity for resistance, as some villagers entered in some forms of passive resistance.

This thesis thus argues that to understand the long-term implications of projects and policies, it is necessary to examine transformations in people's practices, identities, and relationships with state institutions.

KEY WORDS

political ecology, environmentalities, epistemic communities, environmental subjects, intimate government, beekeeping, Tanzania

LIST OF ABBREVIATIONS

ADAP	Association for the Development of Protected Areas
CBNRM	Community-Based natural Resources Management
DNRO	District Natural Resources Office
GIZ	German International Agency for Cooperation
IBA	Inyonga Beekeeping Association
IEA	Inyonga Ecotourism Association
JFMA	Joint Forest Management Agreement
MNRT	Ministry of Natural Resources and Tourism
MNRT-FBD	Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division
MNRT-WD	Ministry of Natural Resources and Tourism - Wildlife Division
NGO	Non Governmental Organization
NORAD	Norwegian Agency for Development Cooperation
NTFP	Non-Timber Forest Product
TBGS	Tanzania Big Game Safaris
VGS	Village Game Scout

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS

PART I

1. INTRODUCTION

The purpose of this Master's thesis is to analyze the outcomes of a community-based natural resources management (CBNRM) project based in Tanzania, centered on a multiple-use zone and proposing beekeeping as an instrument of biodiversity conservation and local development. Based on Foucault, Fletcher and Agrawal's works on *governmentality* and natural resources governance, this thesis will expose conflicts of interest raised by this type of multiple-use zone, changes in power relations, and actors' perceptions regarding their reciprocal relationships and their relationships to nature.

In Africa, during the colonial period, natural resources conservation was characterized by authoritarianism, the exclusive control of natural resource management by the colonial authorities, and a spatial organization based on the segregation of practices, structured by spatial boundaries. The main strategy used to conserve natural environment was the creation of protected areas or national parks. This approach relied on the assumption that species extinction was due to the consequences of local people's actions, which has in turn "*generated a typical response based on attempts to reserve places for nature, and to separate humans and other species*" (Adams and Hulme, 2001, p. 5).

During the 1970's, researchers observed that decades of conservation based on the model of spatial and sectoral segregation (often referred as *fortress* conservation) did not bring significant ecological results at regional and global scales and it had disastrous impacts on human populations (Agarwal and Gibson, 1999). These results, combined with the emergence of social movements among indigenous people in response to their dissatisfaction with modernization as a means of improving living standards, raised the issues of inequalities as a constraint to development (Colchester, 2004). As Parnell (2008, p. 111) mentioned, inequalities are "*a by-product of an orthodox capitalist development process which places emphasis on rapid and efficient economic growth and privileges the industrial sector and urban areas*". The urban and industrial bias was to be replaced and development had to target rural areas. Development policies had to shift from the top-down and centralized approach toward strategies fostering decentralized, devolved and bottom-up initiatives as previous development programs did not respond to local needs and engendered a culture of dependence amongst rural communities, interfering with local innovation and self-reliance opportunities (Parnell, 2008). Development was to become "*centered on, and emerge from, the communities themselves*" (Parnell, 2008, p. 113).

This paradigm shift redirected rural development policies toward "*bottom-up planning, decentralization, process approaches, participation, community organization*" (Adams and Hulme, 1998) in natural resources management, and community conservation became an essential concept in development policies. This allowed conservation professionals to regain legitimacy after decades of criticisms related to initiatives undertaken without the consent of local populations and their exclusion from ancestral lands (Brosius, 2004). Local communities' political and economic participation became a tool and a new paradigm in conservation, and sustainable natural resource use was considered as potentially economically efficient in the rural areas of the South. However, as Adams and Hulme (1998) mentioned, the international development assistance *New Policy Agenda*, which emerged in the 1990s, promoted community conservation because of its ability to combine neo-liberal economic policy prescriptions and *good governance*. This approach, in accordance with its time, recognized the role of economic incentives and markets, and the need to downscale the role of the State in order to deepen the democratization process. As Jones and Murphree (2004) suggested,

this approach relies on economic instrumentalism, which suggests that the sustainable use of natural resources can achieve natural resources conservation: "*sustainable use is the use of resources that allows the continued derivation of benefits, tangible or intangible [...]. However, [...] it was economic benefit that was identified as the major driver for sustainable use*" (pp. 64-65). With this model, natural resources conservation and management are considered a social, economic and political issue. They can only be ensured if the policy context promotes enabling conditions, which confer high economic value to natural resources, and promotes natural resources management as an economically competitive form of land and natural resource use. The solutions to conservation problems would be achieved through providing the appropriate economic and institutional framework providing with the implementation of a process of negotiation over resources rights and access between actors and the introduction of a new system of ownership and territorial rights for the resident community.

This new approach encouraged a massive flow of funds into conservation work, which marked the start of new experiments related to participative mechanisms (Adams and Hutton, 2007). These experiments can be classified as "*conventional conservation projects 'retrofitted' with a participatory or community conservation approach*" (Adams and Hulme, 2001, p. 11); community-based conservation projects, where local communities are encouraged to participate actively in conservation to improve its economic well-being; integrated conservation and development projects, which promote rural development as a substitute for the loss of rural areas for conservation; and CBNRM projects, *"aiming specifically at the development of particular (often 'sustainable') uses of natural resources by local people who are given full tenure over those resources"* (Adams and Hulme, 2001, p. 11). It is this last model which is intended for the management of the Beekeeping Zones in Tanzania.

CBNRM is the most recent development of community-based conservation approaches, which emerged during the 1990s, and is the object of this research work. It reflects a management system which encompasses many different types of implementation, but all sharing a focus on localized approaches, the collective and sustainable use and management of natural resources, and *"strategies which emphasize the role of local residents in decision making about natural resources "* (Adams and Hulmes, 2001, p. 9). The CBNRM model is based on the assumption that

> *"Local populations have a greater interest in the sustainable use of resources than does the state or distant corporate managers; that local communities are more cognizant of the intricacies of local ecological processes and practices; and that they are more able to effectively manage those resources through local or 'traditional' forms of access"* (Brosius, Lowenhaupt Tsing and Zerner, 1998, p. 158).

The aim of CBNRM is to provide local communities with legal rights over natural resources, as well as power and authority to use and strengthen the local institutions ensuring their sustainable use and management and to implement distribution mechanisms of the benefits derived from resources management to reconcile socioeconomic development and resources conservation. These three dimensions (legal rights over land and resources, empowerment of local institutions and benefit distribution mechanisms) are the core of the CBNRM model. The natural resources considered are usually common pool resources, and the underlying assumptions of this approach is that local participation in decision-making makes people more likely to have a sense of *ownership* of decisions related to natural resources management, such as rules for resource use (Larson and Ribot, 2004). Thereby, securing land tenure with registration of titles for the local community would promote its investment in sustainable natural resource management and would therefore avoid the *Tragedy of the commons* (Hardin, 1968).

CBNRM approaches are promoted in Tanzania in various sectors, from wildlife and forest to tourism and fisheries. The country offers furthermore the particular feature of promoting beekeeping in

forest areas as a sustainable form of resource use, through the establishment of Beekeeping Zones that permit to local communities to practice beekeeping legally on Forest Reserves[1]. The process of creating this type of protected areas started in 1998 when the new beekeeping policy was passed (The National Beekeeping Policy, 1998).

This new type of protected areas is implemented along with the decentralization of the forest sector and it proposes a partnership in the management of forest resources on Forest Reserves between State departments in charge of the forest sector and community-based organizations, mainly beekeepers grouped in associations. The management modality foreseen for these areas is therefore collaborative management or co-management. The World Bank (1999, p. 11) defines co-management as

> *"the sharing of responsibilities, rights and duties between the primary stakeholders, in particular, local communities and the nation state; a decentralized approach to decision making that involves the local users in the decision making process as equals with the nation-state."*

Co-management thus refers to a governance system which is usually set up for the management of a specific area or a specific set of resources and contains mechanisms to provide the local communities with various levels of authority (Alden Wily, 2001). It is considered a logical approach to solving resource management problems by partnership, as local users alone can hardly manage most natural resources in the complex contemporary world. In addition, centralized systems need local communities to share their conservation objectives and they depend on them for knowledge and skills concerning specific resources (Carlsson and Berkes, 2005). Species and ecosystem-based knowledge is useful, but "*unless that knowledge is situated in the social reality of the development context, we can hardly hope for the long-term changes effected by development interventions to be sustainable*" (Campbell and Vainio-Mattila, 2003, p. 425). Moreover, it could ensure a fair distribution of the benefits accrued from the various activities practiced on it (beekeeping, tourism and trophy hunting), compensate the cost borne by the local community and facilitate a sustainable use and management of resources.

1.1. Purpose of the research

This thesis is an effort to explore how changes in the governance of natural resources stimulated by the implementation of a Beekeeping Zone affect local communities' behavior regarding natural resource management and uses and how the local communities' involvement in natural resources management changes in Mlele district. It will show which specific actors' objectives, interests and subjectivities constitute the driving forces behind the discourse on natural resources management and how the Beekeeping Zone model seeks to turn local communities into environmental subjects. Two hypotheses will be tested by this research work, to better understand the implications of the assumption above.

On the one hand, local communities try to form alliances with non-governmental organizations (NGOs) by joining an environmentalist discourse but ultimately with the objective to secure their entitlements to practice beekeeping on forest areas. However, by encouraging partnerships between local communities, private companies, non-governmental organizations and the State, this type of multiple-use-zone management creates and institutionalizes political imbalances (Dressler *et al*., 2010). It is therefore a source of potential conflict around access and control of natural resources, as local communities have to negotiate access rights with trophy hunting companies and the State to regain common property rights over Beekeeping Zones.

[1] A Forest Reserve is a "forest area, either for production of timber or other forest produce or protective for the protection of forests and important water catchments" (The National Forest Policy, 1998, p. ix). Restricted consumptive or non-consumptive use is permitted.

On the other hand, as this process requires specific capabilities such as natural resources monitoring and surveillance, financial resources and bureaucratic skills from the community-based organization, this protected-area model targets a specific type of beneficiaries, to the detriment of the whole community. The promise of a natural resource conservation project, which could benefit local communities, is not achievable because conventional CBNRM approaches do not call into question the dominant logics of conservation. CBNRM initiatives do not only aim at transferring the power to control access and use of resources to local communities to ensure their livelihoods. They also aim to give them new meanings of nature and nature products by integrating them in markets (Dressler *et al*., 2010). This approach intends to modify local communities' behavior, practices and subjectivities and use them and their new behaviors as a means for achieving conservation goals.

First, I apply Foucault's analytical framework to discourse analysis through the *genealogy* to study the development of natural resources management in Tanzania with a focus on the shifts in policies and practices of natural resources management. This aims to show that there is a strategic relationship between the political and economic interests of specific actors, the values given to natural resources and the way they are expressed in national legislation and conservation practices. Second, based on empirical findings from a case study in Mlele Beekeeping Zone, I propose an actors' analysis using the *epistemic communities*' approach to explore actors' interests, knowledge and beliefs. Third, I apply Fletcher's concepts related to *environmentalities* to investigate the positions and values of each actor regarding the conservation and management of natural resources. Fourth, based on Foucauldian and Agrawal's concepts, I explore the relationships embedded in the Beekeeping Zone regime, the emergence of *intimate governement* and the *subjectivation*, as a technology of power that seeks to render the local communities into *environmental subjects*.

1.2. Topicality of the subject and originality

By glancing through the literature, three elements can be highlighted. First, although beekeeping is a widespread practice (spatially and historically) that contributes to strengthen local communities' livelihoods and the role of which is recognized in forest ecosystem management, few data have been collected and only a few national programs have evaluated this activity in ecological and socioeconomic terms (except Nel *et al*., 2000; Park and Yeo-Chang, 2012). This situation is particularly relevant in Tanzania, where beekeeping has been recognized as a means to reduce rural communities' vulnerability and where mechanisms have been put in place to develop this activity during the 1990s. Nevertheless, the role of beekeeping for local revenue-generation and in forest management and conservation has hardly been evaluated (except in Tanzania Wildlife Research Institute, 2004). This is mainly because mechanisms to monitor production and marketing are lacking, and because this activity, despite its relative importance, is still informal.

Second, although CBNRM initiatives are widely promoted in Tanzania in various sectors such as in tourism, forest and wildlife conservation, the latter is the only area where policies have been fully implemented (through the establishment of Wildlife Management Areas and evaluated (Tanzania Natural Resources Forum, 2006; Songorwa, Bürhs and Hughey, 2000; Igoe and Croutcher, 2007). In these evaluations, manifold barriers to implementing Wildlife Management Areas have been highlighted (mainly procedural constraints), and Beekeeping Zones have been presented as an alternative, as their implementation is thought to be simpler and yielding financial benefits more quickly. However, the case study presented in this thesis shows that the implementation of Beekeeping Zones faces many constraints too, such as conflicts arising between local communities, State services and other actors (the private sector, notably) during the decentralization process. These constraints need to be analyzed in order to propose recommendations to improve the Beekeeping Zones implementation process.

Third, Fletcher's work on *environmentalities* that proposes a useful analytical framework for actors' analyses in the context of CBNRM projects has not yet been applied widely. Applying this conceptual framework to beekeeping in the context of a CBNRM initiative is expected to provide novel insights.

This research will therefore provide actors in the conservation and development communities a better understanding of underlying constraints related to the development of Beekeeping Zones in Tanzania or more generally to the management of natural resources by non-timber forest products (NTFPs) users. Results will contribute to an understanding of the factors of success and failure of multiple-use zones, and they will provide elements of reflection about discourses and assumptions that underlie CBNRM projects.

2. THEORETICAL AND CONCEPTUAL FRAMEWORK

This chapter provides the theoretical and conceptual framework for this thesis. As this thesis is elaborated within the framework of post-structuralist political ecology, I will give a short overview of this approach, its ideological roots and the main scope of political ecology research. Then I will explore Foucauldian concepts related to power, power relations and knowledge, as they are pivotal for my research, as well as concepts related to the *governmentality* of biodiversity conservation, or to different *environmentalities*, mainly theorized by Fletcher (2010). Moreover, some conceptual inputs from political sciences and international relations will be explored as they are valuable to analyze the policy-making and decision-making process related to the Beekeeping Zone project in Mlele district.

2.1. Political ecology as a conceptual framework

Political ecology emerged in development discourse in the 1970s as an interdisciplinary field that which studies human-environment interactions with a focus on political factors underlying environmental change and natural resources degradation. On the one hand, natural scientists working in the environmental field started considering human actions as a factor having an impact on nature. On the other hand, social scientists became interested in the political role of nature in human societies. Cultural ecology, one of the predecessors of political ecology, concerned itself with adaptations to environment and social practices resulting from environmental circumstances (Schech and Haggis, 2008). This approach, although deterministic, integrated the idea of environmental security in development studies. Conflicts and scarcity of resources appeared in the 1980s. Neo-Marxist critics of cultural ecology tried to move beyond the apolitical approach of cultural ecology by integrating in their analysis the impact of international market, social inequities and political conflicts, with a historical perspective (Schubert, 2005).

Political ecology offers a framework to study how local conditions are influenced by global structures and processes (Benjaminsen and Svarstad, 2009). It questions dominant knowledge about the environmental issues by deconstructing it and offering counter-narratives based on investigations related to power relationships and power struggles in the field of natural resources management, by concentrating the analysis on the actors and their interests, as well as on the discourses which validate the mode of understanding of the issues raised by this management. Discourse analysis shows how the establishment of knowledge related to environment and development is determinant for political action (Benjaminsen and Svarstad, 2000).

Political ecology also has an ethical goal: it deals with environmental justice, by taking into account its two dimensions: the issues of distributive justice (allocation of benefits and costs) and procedural justice (the degree to which communities have the right to be involved in decision-making regarding natural resources on which they depend for their livelihoods) (Blaikie, 2012). In this sense, political ecology contains a normative scope.

Robbins (2004) defines and specifies two research fields relevant for this thesis:
First, the conservation and control over natural resources. These concepts are questioning the failure of conservation and the political or economic exclusion of particular social groups. Local producers lose control over resources as other actors allegedly try to preserve nature or guarantee sustainable resource use. In this process, local livelihoods and production systems are marginalized by states and global interests seeking to protect the environment. These concepts are relevant for this thesis as they raise *governmentality* issues, which depend on specific perceptions of nature and natural resources. Second, Robbins elaborates on conflicts over the management of common pool resources which give information regarding access to resource modalities. Resource scarcity being often the

result of an appropriation by the State, private companies or elites, increases the conflicts between the latter and the communities depending on these resources. They reveal underlying power relations and interests of different social groups, as well as the potential vulnerabilities of some groups (Turner, 2004). In the same way, environmental issues become social issues when local communities secure their control over common resources to the detriment of other groups. Struggle to gain access to natural resources appears, but also struggle resulting from the use of natural resources (Turner, 2004).When power relations change, tensions are likely to arise, and this questions the notion of social justice related to natural resources use and management.

Therefore, the theoretical perspective of this research work will be one of post-structuralist political ecology, as it includes "*a consideration of the discourses and practices through which nature is historically produced and known*" (Escobar, 1996, p. 325).
Discourse analysis will be used as a tool to investigate the CBNRM model. According to Dryzek (1997, p. 8),

> *"A discourse is a shared way of apprehending the world. Embedded in language, it enables those who subscribe to it to interpret bits of information and put them together into coherent studies and accounts. Each discourse rests on assumptions, judgments, and contentions that provide the basic terms for analysis, debates, agreements and disagreements, in the environmental area no less than elsewhere".*

Discourses are thereby conditioned by values, beliefs, knowledge and power, and they contribute to produce knowledge, presenting it as objective truths. A critical analysis of discourses gives the opportunity to deconstruct the production of knowledge, and to expose the underlying interests of individuals or groups who promoted specific truths. Moreover, this analysis gives indications on the power of the discourse in influencing changes affecting local communities' livelihoods and natural resources.

2.2. Foucault and his power-related concepts

In the second part of this thesis, I will use some of Michel Foucault's concepts related to discourse in the analysis of the CBNRM model based on beekeeping in Tanzania, as they provide some useful analytical aspects, particularly concerning power relations and the underlying rules which make possible the emergence of *truths* or knowledge shared by various actors (Gutting, 2005).

Power depends on the actors' authority in the decision-making process. According to Foucault, it is characterized by relationships between individuals or groups. These relationships are articulated on two essential aspects. First, the person over whom the power is exercised must be recognized and maintained as a subject of action, and power is considered legitimate when the agent subject to this power has confidence in it. As such, contestation can be avoided, and the authority can make a legitimate use of power. Legitimacy is related to the compliance with prevailing laws, rules and norms, but also to social norms defined as correct or appropriate (Hoffmann, 2009), such as moral principles and values aiming at social justice (Jentoft, 2000). In this sense, legitimacy must be defined by the participants themselves, and "*[legitimacy] is neither stable nor a fixed thing, rather it is something that changes over time*" (Jentoft, 2000, p. 142). Second, there must be various possible responses, reactions and effects, as power can only be exercised on free subjects, who have a range of behaviors and reactions available. A person is maintained in the position of subject with respect to someone else by control and dependence, or is attached to its own identity by awareness and self-awareness (Foucault, 1982). This phenomenon of attachment is the result of a process, whereby an individual actively produces himself as a subject.

Therefore, to understand power relations, they should be analyzed through forms of resistance to power, which "*asserts the right to be different*" and are characterized by an "*opposition to the effects of power which are linked with knowledge, competence, and qualification*" (Foucault, 1982, p. 781).

As a framework for the analysis of power relations, Foucault proposes to concentrate on various aspects (Foucault, 1982). First, on the system of differentiations that allows acting on others' actions: legal or customary differences related to status and privileges, economic differences in the appropriation of resources, differences of position in production processes, cultural differences, and differences in capabilities. Second, the objective pursued by those who act on others' actions such as retention of privileges or profit accumulation. Third, on the instrumental modalities, *i.e.* how is power exercised, by force, by persuasion or self-discipline, through economic inequalities, through control and surveillance, or based on explicit rules or not. Finally, on the institutional framework characterizing a given context: how traditional and legal structures are entangled and the rules and hierarchical structures prevailing.

These elements influence the strategy used by an actor to act on the actions of another one. According to Foucault, strategy is the choice of the means to an end, the way someone acts based on what he thinks to be the others' behavior, and all actions intended to deprive someone of his means of combat and force him to give up the struggle. These three elements are mobilized when the objective of an actor is to act on another one in a way which renders the struggle impossible for the latter (Foucault, 1982).

Communication is a means to act on an individual or a group. But the production and the introduction of signifying elements in the discourse can have as an objective or as consequences power effects. Thereby, one of the main tools of power is the ability to choose the information, to choose to inform, and therefore to create discourses on a specific subject (Nick, 1998). Actors construct knowledge and truths according to their specific social, political and economic objectives. Knowledge, which dominates at a specific period, is therefore a product of power, rather than the reflection of an objective reality. This association between power and the construction of truth is called power-knowledge by Foucault. Power therefore creates knowledge, which in turn sustains power (Nick, 1998).

The issue is that when some discursive knowledge becomes dominant, other knowledge, such as the local communities' knowledge or marginalized groups within the communities, cannot be heard, and as such, these groups are not able to defend their interests. This can be illustrated by the shift in the rhetoric regarding groups taking part in CBNRM or co-management project: the term *stakeholder* was introduced, which "*promotes the idea of equal partners participating in a round table discussion to identify solutions and "win–win" situations*" (Campbell and Vainio-Mattila, 2003, p. 428). This concept assumes similar power, equal capacity and opportunity to participate amongst participating individuals or organizations.

This issue can lead to a type of struggle, which fights what links the individual to its own identity, thereby ensuring its submission to others. Foucault argues that this type of struggle, against the submission to *subjectivation*, prevails today, as they are the consequence of the modern mode of power, which fosters self-discipline (Gutting, 2005).

Foucault's *genealogy* concept enriches the study of the role of actors, the knowledge of natural resources they produce, and how it consequently affects policies and natural resource management in a historical perspective. A genealogy is "*something, which tries to restore the conditions surrounding the appearance of a singularity from a multiplicity of determining elements*" (Foucault, 2004a, p. 50, author's translation). As resumed by Nick (1998, p. 422), "*genealogy is a strategy which*

seeks to account for the constitution of knowledge from within the flow of history, rather than by reference to some supposedly objective stand-point".

Genealogy deconstructs, by highlighting their real origin, actual official meanings and understandings that contribute to knowledge (Gutting, 2005). As such, genealogy provides elements to understand and evaluate the present, "*particularly with a view to discrediting unjustified claims of authority*" (Gutting, 2005, p. 35).

Applying a genealogical approach to natural resources conservation and management in Tanzania contributes to identify the changes in discourses and power relationships with regard to the changes in institutions in charge of natural resources management. It is therefore oriented to discontinuities (Fraser, 1981) that are illustrated by the shifts in natural resources conservation and management in Tanzania (see chapter 4).

2.3. *Epistemic communities*

As the implementation of a Beekeeping Zone implies complex institutional arrangements and negotiations involving various actors at different scales, as well as uncertainties and potential need for technical expertise, some inputs from international relations are useful to understand the related decision-making process.

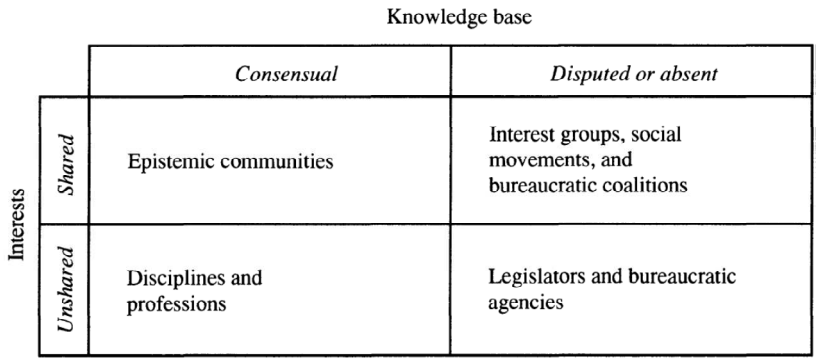
Drawing upon Foucault's *episteme*[2], various authors in the field of international relations developed the concept of *epistemic communities* (Haas, 1992; Davis Cross, 2013). An *epistemic community* is a network of actors, usually transnational, "*with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue area*" (Haas, 1992, p. 3). Interestingly, this authoritative knowledge is the product of a social context, it does not need to be proven, but rather be socially recognized (Davis Cross, 2013).

Actors of an *epistemic community* share a set of causal, analytic and normative (principled) beliefs, which is derived from the analysis of practices leading or contributing to a specific issue and which provides a logic based on values for their social action, and "*a consensual knowledge base and a common policy enterprise (common interests)*" (Haas, 1992, p. 18), "*which is a set of common practices associated with a set of problems*" (Haas, 1992, p. 3). These criteria are resumed in the table below and allow the comparison with other groups (table 1):

Table 1: Distinguishing *epistemic communities* from other groups
(source: Haas, 1992, p. 18)

		Causal beliefs: *Shared*	Causal beliefs: *Unshared*
Principled beliefs	*Shared*	Epistemic communities	Interest groups and social movements
	Unshared	Disciplines and professions	Legislators, bureaucratic agencies, and bureaucratic coalitions

[2] An episteme is "*the dominant way of looking at social reality, a set of shared symbols and references, mutual expectations and a mutual predictability of intention*" (Haas, 1992, p. 26).



As Adler and Haas (1992) note, the study of *epistemic communities'* ideas and their impact on policy-making highlights the dynamic between institutional structures and decision-making process. Authors (Peterson, 1992; Sebenius, 1992) thereby analyzed the role played by networks of actors in articulating the cause-and-effect relationships of complex problems, supporting states to identify their interests, shaping the terms of debate and proposing to states specific policies (Haas, 1992). The control over knowledge and information as well as the diffusion of new ideas and values exercised by *epistemic communities* is thus a dimension of power (Haas, 1992). Indeed, in the absence of existing policies or when decision-makers are unfamiliar with an issue, *epistemic communities* can influence the definition of self-interests of a state or part of it, the formulation of policies or the definition of alternatives (Adler and Haas, 1992; Haas, 1992). As noted by Schattschneider (1975) cited in Haas (1992, p. 16), "*the definition of alternatives is the supreme instrument of power*".

This influence has the following impacts (it is important to note, following Davis Cross (2013), that *epistemic communities* do not only influence governments but also non-state actors with decision-making power, such as NGOs, and internal organizations, and also that *epistemic communities* are often located within the government structures):

> *"The greater the extent to which epistemic communities are mobilized and are able to gain influence in their respective nation-states, the greater is the likelihood that these nation-states will in turn exert power on behalf of the values and practices promoted by the epistemic community and will thus help in their international institutionalization. In international coordination games concerning issues with a technical nature, cooperative outcomes may depend, then, on the extent to which nation-states, after taking everything into consideration, including the urge to defect, apply their power on behalf of a practice that epistemic communities may have helped create and perpetuate."* (Sebenius, 1992, p. 360)

Davis Cross (2012, p. 144) highlights the elements, which reinforce this influence. First, *epistemic communities'* influence is reinforced when "*there is uncertainty with the issue because it is complex or new*". Second, when "*the decision-makers are unhappy with past policies and present problems*". Third, "*when the epistemic communities seek to influence the terms of the initial debate, instead of the decision itself*".

These elements will provide a better understanding of the relationships between actors and analyzing the potential alliances in the implementation of the Beekeeping Zone model and the management of natural resources.

2.4. Fletcher's *environmentalities*

In order to better understand the changes in natural resource governance related to the Beekeeping Zone implementation, it is valuable to analyze the knowledge base and the interests of actors. Some authors provide useful concepts for that purpose.

Fletcher proposes to analyze the different positions within the biodiversity conservation's discourse from the perspective of distinctive *environmentalities,* based on Foucault's description of the neoliberal form of *governmentality* (Foucault, 2004a), and Agrawal's conceptualization of *environmentality* (Agrawal, 2005a).

Foucault distinguished different modes of *governmentality*[3] operating according to different principles. His initial formulation concerned the *disciplinary governmentality,* operating "*through the internalisation of social norms and ethical standards to which individuals conform due to fears of deviance and immorality, and which they thus exercise both over themselves and one another*" (Fletcher, 2010, p. 173).

Agrawal drew on and modified Foucault's concept of *disciplinary governmentality* and elaborates the concept of *environmentality*, which he defines as "*the knowledge, politics, institutions, and subjectivities that come to be linked together with the emergence of the environment as a domain that requires regulation and protection*" (2005a, p. 320). He specifically interested himself in the relationships between the government and local communities and how strategies aiming at involving local communities in natural resources management through regulatory practices transform them and turn them into *environmental subjects* (Agrawal, 2005b). This process changes "*their ways of looking at, thinking about, and acting in forested environments*" (Agrawal, 2005b, p. 162). The mechanism, which underlies the production of environmental subjects, is called *intimate government* by Agrawal (2005b). By scattering involvement in government related to natural resource management amongst different actors and especially local communities, it transforms local practices and institutional arrangements and "*involves the creation and deployment of links of political influence between a group of decision makers within the village and the ordinary villagers*" (Agrawal, 2005b, p. 179).

With the rise of neoliberalism, Foucault gets interested in the conditions required to establish and maintain a free market, and the role of government intervention and regulation. He highlighted two forms of State intervention required for that purpose: regulatory actions, to guarantee price stabilization through the control of inflation, and organizing actions, such as legal systems, technology and education to facilitate the market. These interventions, by creating proper structures, should enable the market to operate freely and efficiently (Fletcher, 2010). Foucault thereby elaborated the concept of *neoliberal governmentality,* which aims "*to create external incentive structures within which individuals, understood as self-interested rational actors, can be motivated to exhibit appropriate behaviors through manipulation of incentives*" (Fletcher, 2010, p. 173). A neoliberal perspective merely focuses on the internal structures that favor particular actions rather than on the internal states of the individuals (Fletcher, 2010).

Following these two authors, Fletcher details the initial concepts of *governmentality* and *environmentality*, and proposes four forms of *environmentalities*. First, the *neoliberal environmentality*, market-based, aims at commodifying natural resources. This phenomenon is called *neoliberalization of nature* by various authors (Heynen and Robbins, 2005; Igoe and Brockington, 2007; Brockington and Duffy, 2010). As a process, the *neoliberalization of nature* contributes to governance reforms, privatization of lands and natural resources, enclosure, i.e. the "*the capture of*

[3] governmentality is an art of government (Foucault, 2004b)

common resources and exclusion of the communities to which they are linked" and valuation, the process through which "*complex ecosystems are reduced to commodities through pricing*" (Heynen and Robbins, 2005, p. 6). This new model of natural resources governance and commodification implies a *deregulation*, *i.e.* a withdrawal of state interference in natural resources management, which means that a variety of actors become self-governing within centrally prescribed frameworks and rules, and a *reregulation*, *i.e.* the deployment of state policies to facilitate privatization and commodification of natural resources (Castree, 2008).

Second, the *disciplinary environmentality*, based on Foucault's concept of *subjectivation*, aims at creating environmental subjects through the diffusion of ethical norms and environmental values. This *environmentality* has been described by Igoe and Brockington (2007), who argue that local communities must become "eco-rational" subjects, which means having legally guaranteed property rights, authority and incentives to protect natural resources, the capital or collateral necessary to enter into conservation-oriented business venture, the skills, technology and ethics of accountability as prescribed by western ideas of conservation.

Third, the *sovereign environmentality* aims at natural resources' preservation through enclosure and repression (Fletcher, 2010). From a spatial point of view, this *environmentality* leads to new forms of territorialization, which allows the partitioning of resources and landscapes through protected areas, in a way that facilitates the control over local communities through coercive conservation (Rodary, 2001). These valuable areas are often governed according to the needs and agendas of external actors and institutions, rather than according to the development needs of local communities (Igoe and Brockington, 2007). This situation refers to the *privatization of sovereignty* (Igoe and Brockington, 2007, citing Ferguson, 2006), an emerging system "*where sovereignty has become highly decentralized and fragmented-controlled by different state actors, in different contexts and for different purposes*" (Igoe and Brockington, 2007, p. 439).

Fourth, the *truth environmentality,* bio or eco-centric, aims at natural resources preservation for the essential interconnections they have with humans (Fletcher, 2010). It is elaborated following Foucault's "*art of government according to truth*" (Fletcher, 2010, p. 177). This *environmentality* can be observed within deep ecologists' perceptions, but also in alternative resources' use regimes, such as those relying on traditional ecological knowledge, for example.

Besides, some inputs from political sciences are useful to understand how various interests and *environmentalities* reconcile to influence management decisions. Kingdon (2003) conceptualized pre-decision-making and decision-making dynamics to explain why some issues arrive on the political agenda and others no. First, agenda setting depends on the recognition of a problem. "*The chances of a given proposal or subject rising on an agenda are markedly enhanced if it is connected to an important problem*" (Kingdon, 2003, p. 207). Kingdon calls this factor the *problem stream*. Second, it depends on the political agenda, the electoral politics, and the changes in the government or administrations, which is called it the *political stream*. Thirds, it depends on the solutions brought by interests' groups, or alternatives, and it is called the *policy stream*. Within this stream, solutions can be proposed by interests' groups, without being attached to a problem. Solutions' advocates look for events, which will make them visible. Kingdon uses the concept of *policy window* which links the three different *streams.* The separate *streams* have lives of their own, therefore this *policy window* has a time factor: there is a need for a precise moment when the three *streams* reconcile, a *coupling*. Kingdon distinguishes two types of *policy window*: the *problem window* (an opportunity's window is opened thanks to a specific event) and the *political window* (the window is opened thanks to a major change in the political field, which implies that solutions already existed but are made possible due to major political changes).

I will therefore apply these concepts as a framework of analysis on natural resources conservation and management interventions in Tanzania over time using Foucault's genealogy, but also on Mlele Beekeeping Zone management, to investigate the power relations between actors and the role assigned to each one by the CBNRM model, based on the dominant discourse related to natural resources management.

3. RESEARCH METHODS AND STUDY AREA

3.1. Methodology, research design and fieldwork overview

The case study for this thesis is the Mlele Beekeeping Zone, a multiple-use zone co-managed by the State and an association of beekeepers situated in the Western part of the country for which fieldwork was conducted at the Association for the Development of Protected Areas' (ADAP) headquarters in Geneva during May 2013. This multiple-use zone implies a wide range of actors who defend diverging interests and mobilize different discourses related to the objectives and to their role in the conservation and management of natural resources.

I used the case study of Mlele Beekeeping Zone to test my hypotheses. Qualitative case studies are often used in social scientific research, and especially in political ecology research related to development studies (Brockington, 2008; Igoe and Croutcher, 2007). They facilitate the exploration of a phenomenon within its context and within a broader theoretical scope, as they integrate information related to a multiplicity of dimensions (Yin, 2003). As discourses are produced and conditioned by values and beliefs, therefore dependent on a specific perspective, and contribute to the social construction of reality, a case study approach has the advantage of building on participants' view of reality, which allows to better understand their actions (Baxter and Jack, 2008).

An explanatory case study is therefore used for this research, as it can explain the potential causal links in the field of given strategies (Yin, 2003). In the case of this research, I aim to explain the links between a model of natural resources conservation and management, the discourses related to it, and its effects on the local communities. In addition, as Mlele Beekeeping Zone is the only one existing in Tanzania, the case is of intrinsic interest (Baxter and Jack, 2008). Yin (2003) argues that case studies cannot provide a means for scientific generalization, but as the theoretical field of political ecology is not fixed, they can provide new assertions. Moreover, as Fletcher's theoretical framework based on *environmentalities* is recent, it is interesting to apply it on a case study to explore its analytical potential.

As I aimed to conduct an explanatory research, my research design aimed at gaining an understanding of the influence of various actors from Switzerland and Tanzania in the implementation and management of Mlele Beekeeping Zone (De Vaus, 2001). I originally planned the fieldwork in Tanzania, but I faced financial constraints, therefore I had to conduct my research in Switzerland. Research for this thesis was conducted from April to July 2013. As many informants in Tanzania do not have regular and quality access to internet-based communication tools, I had to adapt the methods of data collection to address my research question in a convincing way, and therefore used analysis of documents and questionnaires as research methods for informants located in Tanzania.

This implies that *flexibility* characterized my research design, according to the possibilities or constraints which occurred during the research process (Bryman, 2012). My approach to primary data collection being conditioned to the means of communication and availability of respondents, I kept its structure to a minimum.

Research can be divided into three phases. In the first phase I collected relevant theoretical and primary data, analyzed said data and elaborated a literature review. Then I prepared for my fieldwork by elaborating an interview guide and questionnaires. In the second phase I conducted my research concerning Mlele Beekeeping Zone by sending questionnaires to key informants at the local level in the Katavi and Rukwa regions. Furthermore, I interviewed ADAP staff in Geneva and collected program documents related to Mlele Beekeeping Zone project. The purpose of the questionnaires

was to get information related to other CBNRM projects in the region, and to get information from ADAP staff based in Inyonga concerning the Mlele Beekeeping Zone. The third period was dedicated to data analysis and also to put follow-up questions to informants I had already met or from whom I had already received responses.

3.2. Primary and secondary data collection and analysis

A large part of this research thesis relies on secondary data for the literature review. Data sampling was directed to books, articles and theses relevant to my theoretical framework. It was an ongoing process, as my objectives changed over time, being influenced by the readings and informants.

During my fieldwork I used two methods: document analysis and semi-structured interviews.
Primary data collection was directed to statistical data concerning socioeconomic aspects of the study area (however, as the Katavi region has been created recently, there are only few data available, therefore, the statistics presented below concern the situation of the entire Rukwa region before its division in March 2012), relevant legislation and guidelines and institutional documents (mainly ADAP's program documents). The aim of this document analysis was on the one hand to elaborate an actor's analysis. For this actor's analysis, I was inspired by a course entitled "Development project design and management" proposed by the University of Lausanne and by a guideline prepared by the German International Agency for Cooperation (GIZ) providing tools for the analysis of multi-stakeholders' processes. The theoretical framework forming the basis of this guidebook is not presented, but it clearly integrates the new *orthodoxy* of participatory development (one can find the objectives of *good governance*, making globalization inclusive and equitable, empowering civil society groups, and expanding interrelations linking governments, civil society and the private sector, *etc*.). Although this methodology contains substantial bias, I used some elements as it allowed me to think about all the actors involved and thereby to avoid confining myself to the actors presented by ADAP during the following interviews, as well as relying on the information provided by ADAP's members regarding other actors. On the other hand, this document analysis provided with necessary information regarding state actors' objectives and interests as I was unable to get this information directly.

Moreover, I conducted five key informant interviews. One interview, with the former ADAP-Mlele project coordinator, had to be made in writing as the internet connection did not allow us to use Skype. The four other interviews were with active members of ADAP-Geneva, and lasted between one and two hours. The method of data collection was semi-structured interviews according to categories defined in advance, recorded, which I later transcribed (annex 1: Interview's guide). The main aim of these interviews was to get the perceptions of these key informants of the Beekeeping Zone model and the CBNRM approach. It has to be noted also that I have regular contacts with all these persons, and that data were also collected during informal discussions.

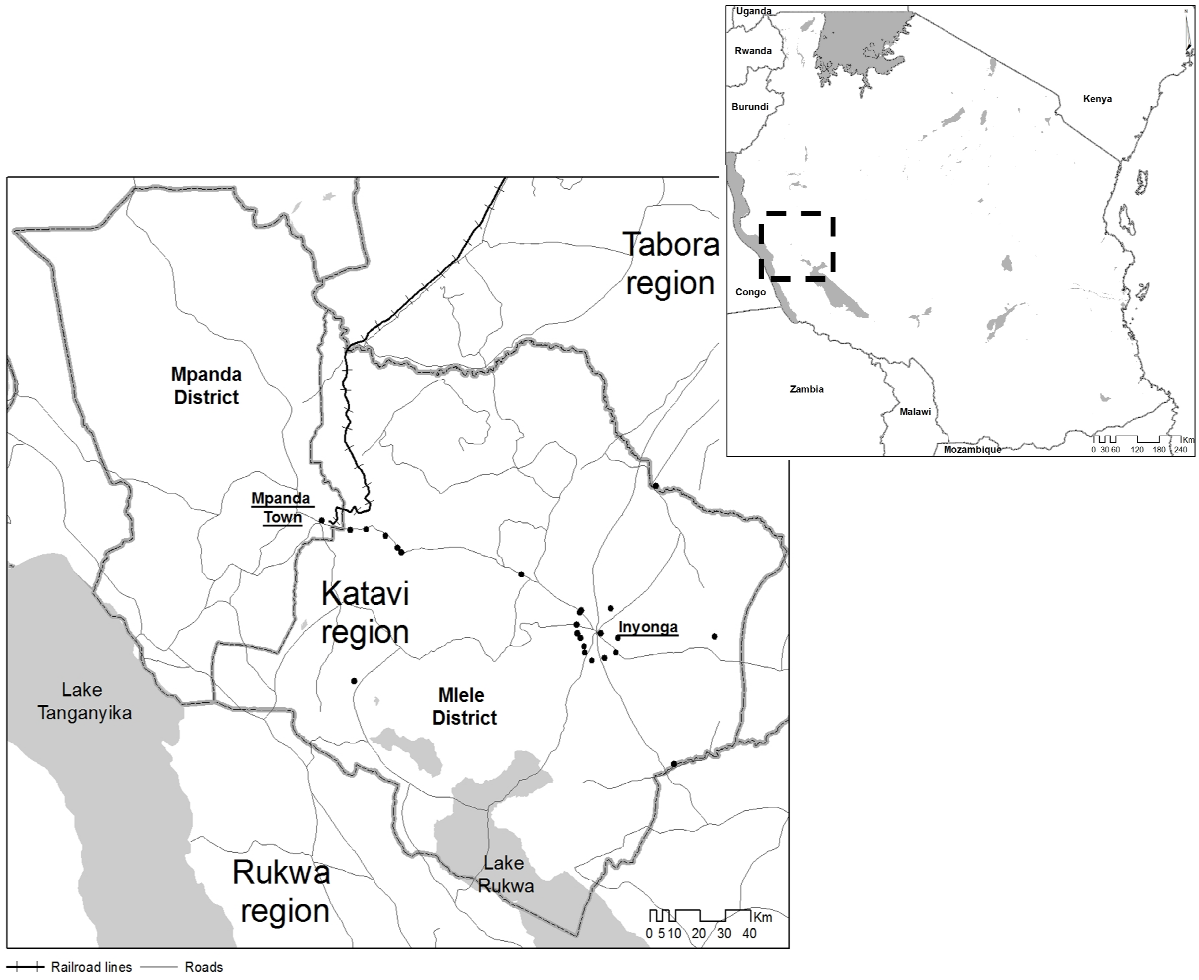
Two limitations concerning this research work can be raised. The first one, already mentioned above, is related to the difficulty of communicating with informants in Katavi region, especially with public officers in charge of natural resources management. Moreover, having worked for ADAP for four years as a program assistant between 2005 and 2009 and spent almost eight months in Mlele district, biased views can infiltrate data collection and findings. As a staff member and as a researcher, I contributed to the construction of knowledge. However, this *methodological self-consciousness* leads to be conscious of predefined assumptions regarding the case, and to integrate them in the analysis (Bryman, 2012). Moreover, this positionality allowed me to have a good knowledge of the region and of the ADAP's program in Mlele.

3.3. Study area

3.3.1. Katavi region

The study concerns Mlele district, part of the Katavi region, which occupies an area of 46'330 km2 in Western Tanzania, along the southwestern border of the country (Law, 2013). This region is the result of the administrative units' reform on March 2012 (the former Rukwa region was divided into two regions: Katavi region and Rukwa region). It is composed of two districts: Mlele and Mpanda (figure 1).

Figure 1: Katavi region
(source: TZA_Census02, Population and Housing Census, 2002, National Bureau of Statistics, Tanzania; ADAP)



Katavi region counted 564'604 inhabitants in 2012 (United Republic of Tanzania, 2012). Katavi population density is low (12 inhabitants per km2, the national average without Dar es Salaam being 46). This can be explained by the region's agro-ecological conditions: it is covered with miombo forests and infested with tsetse flies or is infertile due to soil salinity), which has historically presented a barrier to immigration (The Planning Commission and the Regional Commissioner's Office, 1998).

However, one can observe some demographic growth, both natural and due to migration. The population growth rate was 3.2% in 2012 (United Republic of Tanzania, 2012). Migration is characterized by immigration from Shinyanga and Tabora regions of internal displaced persons, belonging to Sukuma group, looking for farmland and pastures (The Planning Commission and the

regional Commissioner's Office, 1998). This immigration is accentuated today with the creation of Mlele district and the related call for internal migration emanating from the government (Hausser, 2013, personal communication). It attracts many immigrants, who can find in this new district some land availability at lower costs, with the hope that utilities would develop there (Reinhard, 2012, personal communication). Moreover, the population is increasing due to the effects of the conflicts in the Great Lakes region. Indeed, about 220,000 Burundian refugees have lived since 1972 in three camps, two of them being located in Mpanda district. Katumba camp is close to the study area and counts 63,635 residents (Siyame, 2012). President Kikwete decided to close this camp before 2010 (the process is not completed yet), and offered refugees, with the support of the United Nations High Commissioner for Refugees, an alternative between repatriation to Burundi or Tanzanian naturalization. 80% of the refugees chose naturalization, and despite the government's will to distribute them across the country, the majority of the Burundian population stays in the Katavi region (RFI, 2010).

To better understand the economic and agricultural context of the region, I will expose some historical elements. In the 1970s and 1980s, the government embarked on reforms based on the *green revolution* objectives, aiming on the one hand the establishment of a new administrative division, composed of regions and districts, and the implementation of local governments. On the other hand, reforms aimed to group people in villages (the *villagization policy*, set out in the Arusha Declaration of 1967 (Nyerere, 1967), led to the displacement of 77% of Rukwa population between 1970 and 1985) to facilitate administration and rationalize agriculture (regional specialization and implementation of agricultural cooperatives) (The Planning Commission and the Regional Commissioner's Office, 1998). With the support of the United State Agency for International Development and the World Bank (especially with the development of the *National Maize Project* in 1976, which was intended for the distribution of subsidized seeds, inputs and pesticides to farmers), together with the implementation in 1980 by the GIZ of a program supporting the export of agricultural products (transport and construction of storage facilities), Rukwa region gradually became the country's breadbasket (The Planning Commission and the Regional Commissioner's Office, 1998). Although these projects have had some success as they have resulted in the production of marketable maize surplus, farmers always received low prices for their products. Therefore they gave priority to subsistence farming and traditional farming practices (The World Bank, 2007).

Furthermore, the transfer of social and economic responsibilities to local governments was not accompanied by a transfer of human, material and financial resources. Rukwa region was thus faced with the constraints of labor, equipment and financial constraints, together with a lack of access to market due to the poor quality of roads (The Planning Commission and the Regional Commissioner's Office, 1998). In addition, these reforms have contributed to the sidelining of traditional authorities, and the deterioration of relations between the central government and local communities. International aid intervened to support rural development, and took over the development of many sectors, which led local communities to become dependent on this aid (the Norwegian Agency for Development Cooperation (NORAD) funded 75% of the development budget in the region between 1986 and 1996) (Chr Michelsen Institute, 2009).

Agriculture took off from the 2000s (the region produced three times more than in 1990), which can be explained by several factors (Chr Michelsen Institute, 2009):
- Immigrants settled in less favorable areas for the cultivation of maize and developed other crops, which encouraged a general diversification of production (for both food crops: potatoes, groundnuts and rice, and cash crops: rice, sunflower, tobacco and groundnuts).
- Market access was improved (export is now possible in neighboring countries, especially in the Democratic Republic of Congo by improved lake transport). In addition, Ogejo (2012, personal communication) draws attention to the increased investment in tobacco crops, as well as the establishment of the *Agricultural Sector Development Program*, which frames the initiative *Kilimo*

Kwanza (*Agriculture First*) established by the President Kikwete in 2009, which aims to foster public-private partnerships in order to develop commercial agriculture and ensure food security.
However, despite the growth of agricultural production, many data indicate that there is no evidence of significant poverty reduction in the region. The former Rukwa region still has a high poverty rate (12% of the population lives below the food poverty line, and 31% below the poverty line based on the basic needs) (National Bureau of Statistics, 2007), and is thereby considered as marginalized by most of its inhabitants compared to other regions (Ogejo, 2012, personal communication). In addition, local communities are largely dependent on cash crops and are therefore vulnerable to fluctuations of production or agricultural prices (Ogejo, 2012, personal communication).

Moreover, this region is located far from administrative and economical centers; it had until recently poor quality transport infrastructures (most roads, unsurfaced, are not usable during the rainy season, as well as railway lines, few funds being allocated for their maintenance) (The World Bank, 2007). The transport of goods from or to the former Rukwa region is then slow and costly. This region has long been considered unattractive by urban centers. Nevertheless, it is currently experiencing a strong development of its transport infrastructures, many roads are rehabilitated and some airports now have the capacity to accommodate commercial flights (Reinhard, 2012, personal communication). These encouraging results must always be mixed: as mentioned by Ogejo (2012, personal communication), these rehabilitations, if they improve access to market, also promote the arrival of investors with strong economic capital, who compete with local investors, less endowed with capital, who are then excluded from economic opportunities.

Credit systems are poorly developed, only 0.4% of households have access to institutionalized loan schemes (United Republic of Tanzania, 2007). A large number of households are forced to turn to moneylenders, which represents a constraint on the households' economic development (Ogejo, 2012, personal communication).

In terms of natural capital, we note that 63% of households have access to safe drinking water within less than one kilometer in the dry season (the national average is 55%) (National Bureau of Statistics, 2002). However, the situation is deteriorating. Between 1980 and 1996, NORAD conducted an extensive development program in the region, largely focused on the water sector. The agency has supported the region in the implementation of new approaches to improve water supply, based on the use of simple and low cost technologies, and the establishment of village committees in charge of water management. According to NORAD, in 1995, 72% of the population had access to a permanent source of drinking water (Chr Michelsen Institute, 2009). This current reduced access to water compared to the situation fifteen years before is explained by governance issues affecting the sector of drinking water supply. According to Reinhard (2012, personal communication), water management committees have been established with the task of collecting taxes from the local population to finance the construction or maintenance of the wells. These committees collect fees, but do not carry the necessary repairs. Local people have therefore lost confidence in the system and often do not pay taxes. The system is presently blocked in many villages (Reinhard, 2012, personal communication). Concerning energy supply, the region is not currently connected to the national electricity grid, the main source of energy remains firewood and charcoal (used by more than 96% of the population), which has significant environmental risks given the current demographic growth (United Republic of Tanzania, 2007).

In terms of education, data provided by the various surveys differ. According to NORAD (Chr Michelsen Institute, 2009), in 1995, over 90% of children went to school (this score is explained by the fact that the school fees were abolished for primary school). According to the World Bank, in 2002, 53% of the population could read and write (55% were men and 45% women) (The World Bank, 2007). We can therefore note that the educational policy inherited from the *Mwalimu*

crumbles and that access to school does not provide information regarding the quality of education provided.

Katavi region is therefore characterized by its remoteness, the low density of human population and poor infrastructures (Hausser *et al*., 2009). I will now briefly present Mlele district socioeconomic and ecological context.

3.3.2. Mlele district

Mlele district is located in the eastern part of the region (figure 1: Katavi region). It counts 12 villages: Inyonga, Nsenkwa, Kamisisi, Mtakuja, Kaulolo, Utende, Mgombe, Kanoge, Wachawaseme, Mapili, Ipwaga and Masigo (Weber, 2006). In 2009, Mlele District counted about 22,000 persons. The resident population was hunters-gatherers, belonging mainly to the Konongo group, who were forced to turn to agriculture during the colonial period. This population cohabits since about 30 years with a population of Sukuma migrant agro-pastoralists, permanently or temporary settled, searching for water and pasture availability (Hausser *et al*., 2009).

The area is predominantly rural. The local economy relies on the cultivation of maize as a food crop and groundnuts and tobacco as cash crops. About 70% of villagers depend on the sale of these cash crops as their main source of income. Tobacco is heavily supported by buyers, who provide seeds, chemicals and transport to the farmers. Consequently, most households have specialized in tobacco cultivation and are forced to generate income through the sale of part of their production to buy other commodities (Reinhard, 2012; Ogejo, 2012, personal communication). Moreover, this support implies that farmers have little influence on tobacco prices, and have no other selling opportunities as they cannot ensure the transport of their harvest (Association for the Development of Protected Areas, 2002). Two other issues are related to tobacco cultivation. First, this crop depletes soils; it thus requires large surfaces of arable lands, which increase pressure for lands. Second, the drying of tobacco leaves requires large amounts of fuel wood, which contributes to deforestation. Moreover, as the region experiences long dry periods[4], this specialization endangers local communities' livelihoods. As a consequence, they have developed strategies to cope with this situation, and diversified their sources of income.

Natural resource use is a widespread practice, for both commercial and local consumption purposes. The table below (table 2) indicates the resources which are sold or enter in the household economy.

Table 2: Benefits from natural resource utilization in percentages[5]

Resource	Percentage of villagers benefitting from natural resources
Timber	16.3
Fuel wood	11.5
Poles	4.5
Meat	6.6
Fish	4.5
Honey	19.2
Bee wax	19.2
NTFPs (local medicines, wild fruits)	18.2

[4] The region experiences bimodal rainfall, occurring between November and April, the rest of the year being dry. Temperatures range between 22 and 33°C during the rainy season while they range between 19 and 28°C during dry season (Weber, 2006). The area receives 900–1,200 mm rainfall annually (Hausser *et al*., 2009).

[5] Source: Association for the Development of Protected Areas (2002), modified. These percentages give us information on the local communities' dependency on natural resources but do not allow a proper assessment of this dependency, which could have been assessed by the share of income derived from natural resources extraction, for example. This type of data is lacking for the study area.

As indicated by the table 2, a large proportion of villagers rely strongly on the direct use of natural resources for their livelihoods. Firstly, natural resources can fulfill household needs in term of nutrition, energy, medicines and construction materials. Secondly, they become particularly important during crises such as hunger gap or income shortages from other income-generating activities, therefore acting as a safety net (Hausser *et al.*, 2009). Thirdly, some natural resources provide cash income, such as timber, fuel wood, bee products and bush meat. Securing access and use's rights to forest areas is thus crucial to ensure the diversity of income sources and reduce the vulnerability of households.

Beekeeping seems to be a leading activity in the field of natural resource utilization. It is practiced by about 20% of the population. However, these data do not reveal whether honey and beeswax are consumed by the household or sold. Moreover, data regarding the economic importance of beekeeping in the study area are lacking. The table 3 indicates the honey bought in Mlele district by a private company, Goldapis, in 2003[6].

Table 3: Honey bought by Goldapis, 2003

Month	Quantity (kg)	Total (US$)
Jan	4'312	1'447
Feb	168	56
Mar	_	_
Apr	_	_
May	1'204	404
Jun	8'792	3'293
Jul	9'884	3'880
Aug	16'380	6'151
Sep	_	_
Oct	6'552	3'724
Nov	10'192	6'121
Dec	4'032	2'569
Total	**61'516**	**27'649**

Extraction of NTFPs is work-intensive and generates low return to labor, but it requires few skills and technology, and is generally practiced in open or semi-open access (Heubach *et al*., 2011). Indeed, villagers underlined during a village survey conducted by ADAP in 2002 that permits were easy to obtain for NTPFs extraction in Forest Reserves within Mlele district. It is therefore an attractive activity for the rural poor (Association for the Development of Protected Areas, 2002).

Subsistence or commercial hunting is also important for the local economy, but as this activity is authorized only on Open Areas[7], rather rare in the study area, it remains informal and hidden (the percentages presented in the table 2 may consequently differ from reality). Nevertheless, this activity is largely practiced as it contributes to improve the social status of the hunter, being considered a high risk activity for both natural and anti-poaching reasons (Association for the Development of Protected Areas, 2002).

[6] The price for a tin of 28 kg was about 10'000 Tsc in 2003 (9 US$), it currently ranges from 80'000 to 100'000 Tsh '(48 - 60 US$). At that time, Goldapis was the only company operating in this area (Savary, 2013, personal communication).

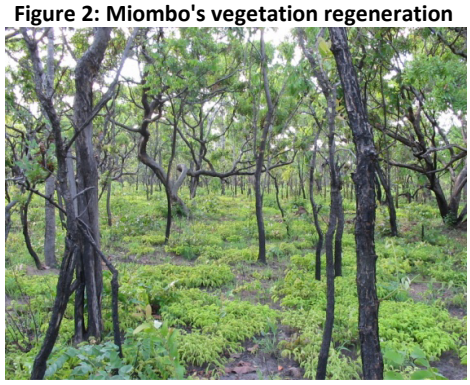
[7] An area of land without any form of conservation status and no restrictions on human habitation or other forms of land use (International Council for Game and Wildlife Conservation, 2004).

The area is covered by the dry Zambezian miombo woodland ecosystem, dominated by species of the *Caesalpinioideae* family adapted to dry periods. This ecosystem is an area of endemism for various species of the genera *Brachystegia*. The miombo ecosystem, due to its extent, presents an important potential to support wildlife, but shelters only a limited density of large mammals. This is due to the long dry season and the low fertility of soils, which produce a vegetation of low nutritional value. However, Elephants (*Loxodonta africana*), Black rhinoceros (*Diceros bicornis*) and Buffalo (*Syncerus caffer*), which are able to feed themselves with poor quality fodder if available in large quantities, are present. Herbivores are common, such as the Sable Antelope (*Hippotragus niger*), the Roan Antelope (*Hippotragus equinnus*), the Greater Kudu (*Tragelaphus stepsiceros*), the Hartebeest (*Alcelaphus buselaphus*) and the Common Eland (*Tauotragus oryx*). Big carnivores are also present, such as the Lion (*Panthera leo*), the Leopard (*Panthera pardus*), the Spotted Hyena (*Crocuta crocuta*), the Striped Hyena (*Hyaena hyaena*) and the Wild Dog (*Lycaon pictus*) (Weber, 2006).

All these species are appreciated by trophy hunters. Reptiles and amphibians present a high level of endemism (Weber, 2006). According to Hausser (2013, personal communication), who is presently conducting wildlife surveys in this area, sixty different mammal species have been surveyed, which places this region among the most abundant of the continent, if not the most abundant.
Miombo woodlands are subject to various threats, briefly resumed below:

- miombo woodland's dynamic is strongly influenced by bushfires. Vegetation stays dry during long periods, and the thunder and lightning storms of the beginning of the rainy season frequently cause fires, which regenerate vegetation (figure 2). However, although bushfires are part of the miombo ecology, anthropogenic firings increase the frequency of bushfires beyond natural thresholds, which threatens the vegetation cover (Weber, 2006).

Figure 2: Miombo's vegetation regeneration



(© Hélène Weber, 2006)

- timber harvesting is unsustainable (especially *Pterocarpus angolensis*, heavily harvested and becoming extinct) (Association for the Development of Protected Areas, 2004a),

- ring debarking for making hives and cutting live trees containing colonies of bees is still a widespread practice and contributes to deforestation (figure 3), as well as land conversion for agriculture (especially tobacco cultivation) or pasture (Association for the Development of Protected Areas, 2004a), and

Figure 3: Recently fresh debark of Brachystegia spiciformis

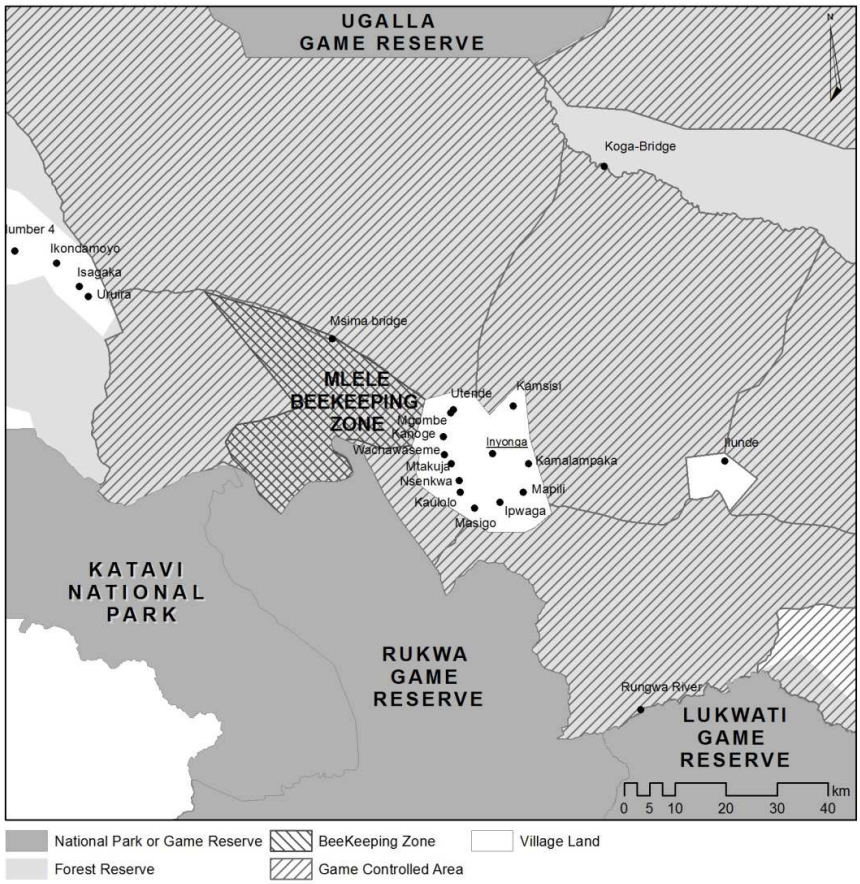
(© Association for the Development of Protected Areas, 2004)

- illegal off-take of wildlife (self-consumption and commercial trade) is increasing (Hausser *et al*., 2009).

3.3.4. Historical features regarding conservation in the study area

This ecological context has historically contributed to the creation of protected areas of various types. Mlele district contains or borders protected areas created since the 1950s (World Database on Protected Areas, 2013), falling under various forms of legal protection, as illustrated on the figure 4.

Figure 4: Mlele district protected areas
(source: IUCN - WDPA; ADAP; GIZ; USAID-Africare)



In the South-West lies Katavi National Park. National Parks are protected areas declared by the President. Consumptive uses are totally prohibited (such as hunting, capturing or killing animals or cutting, damaging or removal of any vegetation whether alive or dead (The National Park Act, 1959). Non-consumptive uses are allowed, i.e. "*the use of scenery, cultural and natural resources that does not involve taking any specimen from the scene, cultural site or the wild and includes game viewing, bird watching, walking safaris, hiking, canoeing, boating, scuba diving, mountaineering and any other similar or related activity*" (The Wildlife Conservation Act, 2009). In the lies South Rukwa-Lukwati Game Reserve, in the North Ugalla Game Reserve. Game Reserves are also protected areas declared by the President. They are dedicated to wildlife hunting. In addition, the district is covered by several Forest Reserves/Game Controlled Areas. A Forest Reserve is a "*forest area, either for production of timber or other forest produce or protective for the protection of forests and important water catchments*" (The National Forest Policy, 1998, p. ix). Restricted consumptive or non-consumptive use is permitted (except for wildlife resources), with permits delivered by the district authority. A Game Controlled Area is declared by the Minister of Natural resources and Tourism (Nshala, 1999). It is an area of land marked out in reserved or village lands, where the Wildlife Division of the Ministry of Natural Resources and Tourism leases hunting blocks to a hunting tour operator (Hakikazi Catalyst, 2004). These protected areas are submitted to different management regimes involving different actors (table 4).

Table 4: Management institutions in charge of the various types of protected areas and in Tanzania
(source: Hausser *et al*., 2009, modified)

	The Wildlife Division of the Ministry of Natural Resources and Tourism (MNRT-WD)	The Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism (MNRT-FBD)	Tanzania National Parks *	District councils	Village councils
National Park			x		
Game Reserve	x				
Forest Reserve		x		x	*
Game Controlled Area	x			x	

* Tanzania National Parks is a parastatal organization empowered to manage and regulate the use of areas designated as National Parks)

For decades, the local communities have no legal access to most of these areas, and natural resource use by local communities is considered illegal through the law. As an example, wildlife hunting by local communities is totally prohibited and thus repressed, and other natural resources uses such as timber harvesting and beekeeping are subject to a permit system. Therefore, "*the available land for legal village based natural resource management activities is very limited. In Inyonga division [now Mlele district] approximately 22'000 villagers have access to 640 km2 of village land, while there are 13,050 km2 of protected areas*" (Hausser *et al*., 2009, p. 2684). This situation led to conflicts between the local communities and protected areas management or law enforcement by Tanzania National Parks, the parastatal organization in charge of national parks' management (in the region concerned, Katavi National Park), the Wildlife Division of the Ministry of Natural Resources and Tourism (MNRT-WD), in charge of the surveillance of Game Reserves and Game Controlled Areas (the MNRT-WD regularly conduct anti-poaching activities in the district) and the trophy hunting companies operating on the surrounding Game Reserves and Game Controlled Areas.

These conflicts have been identified by Hausser *et al*. (2009). They refer to boundaries of protected areas that are contested by the local communities who claim land and resource access rights based on (customary rights). The local communities have a sense of ownership over these areas, and consider the past conversion of land as a grabbing. Conflicts also refer to use rights. The rights of the local communities to practice beekeeping or fishing are contested by the other actors. These conflicts arise from the double status of Forest Reserve – Game Controlled Area, as Game Controlled Areas overlap in Western Tanzania with Forest Reserves and Village Lands. Consequently, local communities have few opportunities to generate benefits apart from land conversion to agriculture.

3.4. Community-Based Natural Resources Management and Beekeeping Support as an opportunity for conflict resolution and poverty alleviation

To mitigate these conflicts and provide the local communities with economic alternatives to tobacco cultivation, a CBNRM initiative emerged in 2001, following a local demand. Some beekeepers from Mlele district, organized in a cooperative, were working with an exporting company based in Mpanda since 1996, Goldapis. This company identified an international market for Tanzanian bee products, and a capacity for fair production in Mlele district (Association for the Development of Protected

Areas, 2001). Goldapis started to provide beekeepers with some training related to honey quality and modern beekeeping techniques, which encountered much interest. As this company could not respond to the growing demand for trainings and material support, Goldapis entered in contact with ADAP, a Swiss NGO active in the field of rural development in Africa (this NGO will be presented in detail later). ADAP offered its support for beekeeping development, and entered in contact with the Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism (MNRT-FBD), which suggested to create a multiple-uses zone, namely a Bee Reserve[8] in one of the area's most productive forests, managed under the regime of co-management.

It is important to note that following the Earth Summit in 1992, NORAD closely engaged with the development of environmental policies in Tanzania, and strongly promoted the development of beekeeping policies (Savary, 2013, personal communication). A Beekeeping Policy was approved in 1992 by the Tanzanian Government (The National Beekeeping Policy, 1998). The National Beekeeping Policy's goal is to enhance the contribution of the beekeeping sector to the sustainable development of Tanzania and the conservation and management of its natural resources for the benefit of present and future generations (The National Beekeeping Policy, 1998). It emphasizes the promotion of beekeeping-based industries and products, taking into account changes in the macro-economic policies towards market economy, and the participation of various actors, including the private sector and local communities. Based on these policies, in 2001 the MNRT-FBD developed a National Beekeeping Program 2001-2010 to ensure the objectives of the Beekeeping Policy. In 2002, the Parliament enacted Beekeeping Act No. 15 as another instrument to implement the policy, and in 2005 it enacted Beekeeping regulations as a guideline to operationalize the Beekeeping Act (The Ministry of Natural Resources and Tourism, 2008).

To ensure the proper development of beekeeping activities, the Government of Tanzania planned to implement beekeeping areas on the national territory, especially in western Tanzania, where weather and ecological conditions are particularly favorable. These areas are supported by the Village Land Act of 1999. It empowers the communities at local level (mainly village), recognizing them as the appropriate representative structure to implement natural resources management and providing them with legal rights over the natural resources (The Village Land Act, 1999). These beekeeping areas can be:

- National Bee Reserves established by the government and managed by the State, in collaboration with other actors, which are part of the national protected areas' network, and
- Beekeeping Zones, initiated and co-managed by the State and the communities (beekeepers organized in associations), mainly on General Land[9] or Village Land[10]. However, as this activity is based on forest resources, the most suitable zones are found within the protected areas network (Hausser and Mpuya, 2004). This has been recognized by the government, which incorporated:

> *"A beekeeping component in the management plans of Forest Reserves in the context of joint forest management. The component may include setting aside suitable habitats for beekeeping activities in forest reserves. Beekeeping activities will be promoted for local communities and other stakeholders through joint management agreement"* (The Ministry of Natural Resources and Tourism, 2001, p.10).

[8] An area where various activities can be practiced (beekeeping, ecotourism and trophy hunting, amongst others), managed either by the central State, the local authority, a group, an individual, an NGO or a private company (The Beekeeping Act, 2002)

[9] General Land is land which is neither reserved land nor village land. It is managed by the Commissioner of lands (The National Land Policy, 1997).

[10] Village Land includes all land inside the boundaries of registered villages. It is managed by the Village Councils and Village Assemblies (The National Land Policy, 1997).

Thereby, the process plans to create registered beekeeping areas on Forest Reserves, with a status of Beekeeping Zone managed by beekeepers and the MNRT-FBD.

Therefore in 2002, ADAP facilitated a workshop bringing together the actors involved in natural resources use and management within Mlele district (beekeepers, other villagers, local government representatives, central government representatives – officers from the MNRT-FBD, as well as officers from the Ministry of Regional Administration and Local Governments, Tanzania National Parks representatives, trophy-hunting companies, and companies selling bee products). The aim of this workshop was to find a way to reduce conflicts between actors and to create a basis for co-management on the multiple-use zone. Following the 2002 workshop and the beginning of ADAP's program, the number of beekeepers increased from 100 in May 2002 to 300 in December 2003 (Hausser and Mpuya, 2004). Consequently, ADAP's program focused mainly on beekeeping development (agreements were concluded with the Tanzania Wildlife Resources Institute-Beekeeping Training Institute to provide the beekeepers with appropriate training related to modern hive making, utilization of protective clothing and smokers, bee product' harvesting, storage, packaging, transport and marketing). ADAP also supported the development of an organization representative of beekeepers, Inyonga Beekeeping Association (IBA), composed of beekeepers from the former cooperative, all trained in modern beekeeping techniques. The role of this association was to modernize beekeeping techniques (harvesting and packaging) and to act as the main contact regarding natural resources management in the district. ADAP also developed projects related to capacity-building for natural resources management, land use demarcation, management and titling of village lands, and development of economic alternatives such as agroforestry, utilization of forest fruits and ecotourism. The NGO promoted the creation of an association in charge of ecotourism activities, the Inyonga Ecotourism Association (IEA), for which the villagers showed enthusiasm (Association for the Development of Protected Areas, 2003b).

The process of creating a Bee Reserve is long and tedious: to turn any reserved land into a Bee Reserve, relevant actors must be first consulted concerning the changes induced by the gazettement; a proposition of degazettement must be submitted to the Director of the MNRT-FBD and accepted by the Parliament; and the new status must then be proposed to the Director and accepted again by the parliament. This process had little chance of success as the environmental questions are not a priority on the Parliament's agenda (Hausser, 2013, personal communication). In addition, there appeared to be some confusion regarding the status of the proposed area (Association for the Development of Protected Areas, 2004b, p. 3):

> *"Classified as a Forest Reserve, and therefore falling under the authority of the Forest Division in Dar, it has been unilaterally gazetted as Game Controlled Area by the Wildlife Division. The Director of Forestry, Mr Iddi was indeed very surprised to hear about this, and told us that they were not aware of the situation".*

Although the status of Forest Reserve must take precedence over the status of Game Controlled Area, it appeared to be impossible to find a common ground between the MNRT-FBD, the MNRT-WD, IBA, ADAP and the trophy hunting company, due to practical problems of communication, low presence in the area of the trophy hunting company and lack of personal contact. To circumvent this issue, the MNRT-FBD suggested in 2004 to implement a Beekeeping Zone, which would be part of the Forest Reserve, but managed mainly by IBA. In Tanzania, this type of community conserved area falls under a *Joint Forest Management Agreement* (JFMA), signed by a community-based organization and the State (The Beekeeping Act, 2002).

A second workshop was organized by ADAP with the same participants in 2004 to identify the issues this Beekeeping Zone could raise and make proposals for its management plan. In 2005, IBA received an agreement in principle from the MNRT-FBD, allowing the association to manage the Beekeeping Zone. This agreement was conditioned to the elaboration and acceptance by all actors of the

management plan and bylaws. A draft was jointly elaborated by IBA and ADAP in 2005, and submitted to the MNRT-FBD (Weber, 2006; Varet, 2006). Following a demand emanating from the MNRT-FBD, ADAP started to train 30 Village Game Scouts (VGSs) (an anti-poaching patrol composed of villagers from Mlele district) to ensure the surveillance of the Beekeeping Zone (Hausser, 2013, personal communication). Negotiations concerning the management plan and the bylaws continued the following years and resulted in 2011 in the signing of a Memorandum of Understanding approved by the MNRT-FBD and IBA, which formally outlines the roles and responsibilities of both actors in the co-management of the Beekeeping Zone (annex 2: Memorandum of Understanding between the Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism and Inyonga Beekeepers Association). This Memorandum of Understanding was signed without the management plan and the bylaws being approved. Nevertheless, the Beekeeping Zone's management rights were formally transferred to IBA, recognized as the local organizational structure most able to represent the local communities and manage natural resources.

Critiques of community-based natural resources management

As this process stresses it, local communities have become the central actor in the discourses related to natural resources management. The assumption is that co-management would guarantee a sustainable rural development, as it would modify power structures in natural resources management policies toward a local reappropriation, being therefore a component of integration.

However, the *local community* is a broad term whose meanings are variable and contested. Usually, it is considered the most suitable unit to foster collective action, because it refers to a specific social group whose members share similar characteristics. These characteristics can be the social structure which characterizes the group (a family, a clan, a chieftainship). However, this sense of belonging increase the risk of having decisions based "*on origins of authority or social membership ("communautarisme") which can lead to either exclusion or elite capture*" (Torquebiau and Taylor, 2009, p. 2539). Characteristics can also be the place where the group lives (the particular natural resources or environment close to the group, a village or a settlement). Authors suggest the term *resident population* or *rural citizens* (Ribot, 2006; Torquebiau and Taylor, 2009 respectively), which better illustrates this modern, residency-based sense of belonging, in opposition to traditional or identity-based structure, which presents the risks mentioned above. "*Residency is a strong basis of citizenship. Citizenship is an inclusive form of belonging*" (Ribot, 2006, p. 117). As Torquebiau and Taylor (2009) recognize it, although the notion of citizenship is inclusive, this term implies the idea of individual entrepreneurs, which presents risks in natural resource management if specific groups or elites capture resources. This term overshadows collective action. The characteristics most commonly used in rural development programs, and which have been used in the Beekeeping Zone project, are the interests and norms the members share, and would then be illustrated by private corporations, NGOs, user groups, associations, etc. As Ribot (2006, p. 117) highlights it, "*These too can be divisive or integrative, depending on circumstance*". Nevertheless, as Watts (2000, p. 36) raises it,

> *"The community is important because it is typically seen as the locus of knowledge; a site of regulation and management; a source of identity and a repository of "tradition"; the embodiment of various institutions (say, property rights) [...]; an object of state control; and a theatre of resistance and struggle."*

These elements are supposed to encourage interactions within the group, which facilitate collective decisions regarding natural resources uses and management (Agrawal and Gibson, 1999). However, as these authors draw attention to it, they are inadequate to explain how these collective actions are connected with natural resource management activities. Territorial affiliation is inapplicable in an era of globalization and increasing mobility, homogeneity is rarely met as all human groups are internally differentiated in social, political and economic ways, and neither share norms as they are supposed

to grow out of common location and composition (Agrawal and Gibson, 1999). A community approach to natural resources management may therefore fail to explain the construction of local ecological discourses. As Watts (2000, p. 37) highlights it: *"not everyone participates equally in the construction and reproduction of communities, or benefits equally from the claims made in the name of community interest."* Local community's participation could be constitutive of new segregated forms of natural resources management policies, where participation can be a component of discrimination of economic and political positions. Different actors can thereby use the idea of community as a way of claiming various forms of access, control and ownership. It is also important to understand who constructed the *local community* image, its purpose and the impacts it causes (Agrawal and Gibson, 1999).

Besides, co-management is considered as a process of learning and problem solving between actors, and as such, it should contribute to the empowerment of participating local institutions. The sharing of decision-making power is the result of this process, not the starting point, as this governance reform faces many complexities. First, the State is not a monolithic entity; different services of the State can have different agreements with a given local community or different interests, knowledge and beliefs. Thereby, co-management has to ensure a harmonization of management objectives, policies and practices. Second, the local communities are not homogenous and different groups within a given community may have different interests. Co-management favors the emergence of claims, which have to be recognized and integrated by each participant. Third, this type of governance system is dynamic, the influence, position and activities of each participant are continually re-adjusted. The sharing of decision-making power is thereby a dynamic process and must be considered in a long term perspective.

Participation lies at the core of the co-management model. However, it can take various forms and can occur at different stages of the decentralization process. It is interesting to analyze some definitions of participation, and highlight what is implied in terms of democratization and devolution of decision-making power. According to Rodary (2001, p. 126, author's translation):

> *"Participation is the act of participating in an institution, the latter being understood as all forms and social structures established by law or custom."*

This definition implies that people participate in something existing. In this sense, this approach of participation is managerial, as it can be a technical tool to increase the effectiveness of a political system, by reinforcing the legitimacy of decisions, without questioning it (Rodary, 2001). It acts as a complement to representative democracy, and can thereby lead to the instrumental use of the local community and disenchantment, as the conditions of power remain the same. Other authors give alternative definitions: according to Lawrence (2003, p. 332, author's translation):

> *"Participation can be considered in a broad sense, as a dialogue between the institutions, which develop regulations and social groups in order to formulate objectives, projects and identify their potential funding to achieve the desired result."*

By this definition, participation is an element of social and political transformation, as it can modify power relationships toward a more equitable distribution between the various social groups of the society, opening the political arena to persons usually excluded from economic or political power (Rodary, 2001). As a result, it can act as a tool of social justice as it acts as a criticism of the failure of central state action schemes as conceived by modern States ("expert decision" and technocratic approach to decision-making, which gives no space to local knowledge) and challenges colonial and developmentalist intervention logics and the imposition of a western system. In this case, participation, as a key component of democracy, should therefore be a democratization tool for the States themselves, but also for all the actors involved in natural resources management. As such, participation highlights the integration of a western view of politics (Rodary, 2001). These definitions

illustrate the various forms of participation. Several authors have thus developed a typology of participation, which is provided in the figure 5.

Figure 5: Typology of participation

(source: The United Nations Research Institute for Social Development, 1995, modified)

Component		Typology
Information		Passive participation
Information giving		
Consultation		
Material incentives		Functional participation
Co-management		
Concertation		Self-mobilization
Self-management		

As one can observe, most types of participation (from passive participation to functional participation) correspond to a managerial approach. Participation is thus exogenous, generally imposed by state institutions or NGOs. These approaches, even presented as bottom-up decision-making processes, retain top-down aspects as the general interest or the development objectives are already designed. This involvement of local communities is made possible by their subjectivation, the integration of Western ecological values and practices. However, as it will be shown in the case study, participation contains the risk to be selective, as it can be purposely granted to certain groups of people, or to target only groups having the capacities to claim their needs or rights. Besides, by emphasizing social inclusion, participation integrates marginalized groups into structures and relations of power, in which they are not able to defend their interests.

This typology contains a normative understanding of participation, which relies on the foundations of Western participatory democracy, which appeared in many African countries along with the decentralization processes started a few decades ago. Decentralized approaches are a governance strategy, which only is effective when there are mechanisms to represent local needs in decision-making: authorities or institutions which are empowered to act on behalf of the communities and are downwardly accountable (Ribot, 2006). Ribot *et al.* (2006, p. 1865), defines decentralization as:

> *"Any political act in which a central government formally cedes powers to actors and institutions at lower levels in a political-administrative and territorial hierarchy. Devolving powers to lower levels involves the creation of a realm of decision-making in which a variety of lower-level actors can exercise a certain level of autonomy and the transfer of power to actors or institutions that are accountable to the population in their jurisdiction."*

This devolution of power to lower-level actors or institutions contributes to the depoliticization of local spheres of authority, as discretionary powers are transferred to these institutions to make them able to respond flexibly to local demands and needs. However, revenue, such as tax and fee, to ensure the autonomy of local authorities or institutions must accompany these powers. This devolution of power has an impact on local governance, as the State, through its decentralized administrative or technical services, becomes one of the multiple actors (Olivier de Sardan, 2009).

However, in most African countries the democratic decentralization process of natural resources' management rights is partial or biased. Natural resources, as opposed to health, education or infrastructure sector, generate revenues. Powers over natural resources can therefore strengthen the group to whom these powers are devolved (Ribot, 2006). It is therefore extremely crucial to choose who will be empowered. According to Ribot (2006, p. 116),

"The choice influences the degree to which local people will be represented in meaningful decision making, the degree to which they will identify as citizens, the kinds of public democratic spaces that will emerge, and the institutional sustainability of natural resource interventions".

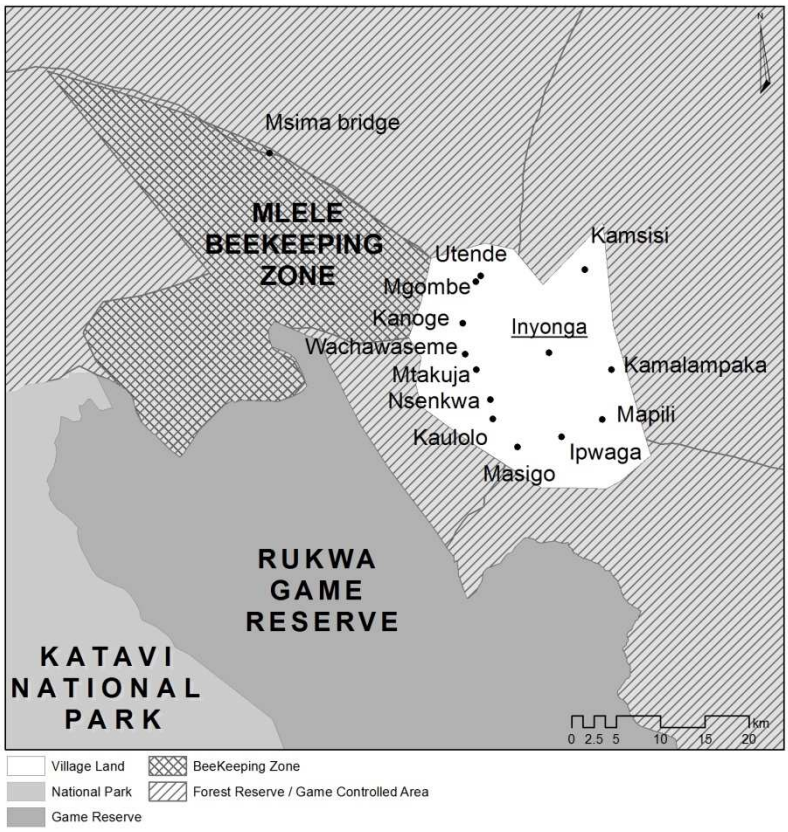
Central governments use participation to secure the cooperation with the local community by providing access and use rights on some products, a distribution of some benefits derived from natural resources and some management responsibilities, in order to maintain *top-down* management regimes. Local communities are therefore considered as natural resources users and beneficiaries, they are consulted but have no decision-making power over the resources and put up with by-lays more than they elaborate them, the State being the dominant actor, which prevents self-mobilization (Alden Wily, 2004). Participation is thereby functional. Central governments also intentionally implement strategies aiming at conserving control over resources: by limiting the type of decision-making power transferred to local communities or by choosing local institutions, which could serve their interests. These local institutions pass through a process of subjectivation, fostered by the State and supporting NGOs, in order to turn them into ecological subjects willing to spontaneously implement central state conservation objectives. In practice, fundamental aspects of the decentralization such as discretionary powers or representative authorities are often lacking, which leads to resistance from part of the local communities. These constraints reflect the lack of trust central governments demonstrate in the local community's abilities, even though they are supposed to be empowered by these reforms (Ribot *et al.*, 2006).

Development aid organizations participate in this selective process of decentralization, by often empowering and subjecting alternative local institutions, NGOs, customary institutions, associations, etc. Moreover, Cooke and Kothari (2001) analyzed rural development aid programs and highlighted this bias, which appears in the early stage of participatory development projects and can explain the further constraints. These two authors gave a severe criticism of the planning of participatory development projects, considering participation as *the new tyranny*. In fact, participatory planning techniques, such as Participatory Rural Appraisals, base their project goals on *local knowledge* (such as community needs, interests and priorities), which is a construct of the planning context. Local knowledge is shaped by relations of power, as in this type of planning process the definition of community needs, program activities and groups of beneficiaries is to be made by the local community. Controlling this definition becomes therefore an important issue for the actors (Cooke and Kothari, 2001). As raised by the two authors (p. 19): "*Participation projects become tools for various actors (even the poor themselves) in the political arena*". Project actors shape and direct local knowledge production and planning, which constrains the emergence of alternative visions of development and serves to legitimize a discourse influenced by donors' and central State's objectives. Local knowledge is thereby strongly influenced by dominant interests and groups which show agency capacities and are able to simplify and rationalize local livelihood needs to correspond to project-defined models. This knowledge becomes articulated and structured by these models and does not reflect the reality of local needs anymore (Cooke and Kothari, 2001).

3.5. The Beekeeping Zone, a new type of multiple-use zone

The Beekeeping Zone is located about 20 km to the west of Inyonga village: it covers an area of 850 km2 integrated in Mlele Hills Forest Reserve / Game Controlled Area (5'211 km2), which is owned and managed by central government (Mpanda District Council, 2008). It is bordered to the east by Utende ward villages (Utende, Mgombe, Kanoge, Wachawaseme), to the south by Rukwa-Lukwati Game Reserve and to the west and north by Mpanda North East Forest Reserve / Game Controlled Area (figure 6).

Figure 6: Mlele Beekeeping Zone location
(source: IUCN - WDPA; ADAP; GIZ)



The area has been chosen by IBA, the Village Councils and Mpanda District Council (as Mpanda was the capital of the district before the reforms of 2012), according to the beekeeping camps located in the Forest Reserve and the honey production. Various activities are practiced in the Beekeeping Zone; they will be briefly described below.

Beekeeping

The Beekeeping Zone is mainly used by IBA members. In 2006, they were 451 to practice beekeeping in this area. Most of the beekeepers are men; women are only marginally involved in beekeeping[11]. Beekeepers generally own between 5 and 200 hives. They are present in the Beekeeping Zone from February to April, to make hives and capture colonies, then from June to July and October to November for honey harvesting.

Beekeeping is still practiced in a traditional way, modern beekeeping techniques (such as the use of protective clothing, smokers and modern apiaries) have difficulty integrating within traditional beekeeping (figure 7).

Figure 7: Reasonable use of protective clothing

(© Hélène Weber, 2006)

Below is a table of the perceived advantages and disadvantages of traditional and modern types of hives among beekeepers (table 5):

Table 5: Perceived advantages and disadvantages of traditional and modern types of hives among beekeepers (source: Haesler, 2012, modified)

Traditional beekeeping		Modern beekeeping	
Advantages	Disadvantages	Advantages	Disadvantages
Availability of building materials for the building of hives	Bees killing	Utilization of dead trees for the building of hives	Expensive
Cheap	Short useful life	Long useful life	Need of specific knowledge
High production	Trees killing	Utilization of protective clothing and smokers	Hives's transport from the village to the forest
No transport of the hives		High quality of bee products	Time consuming
Eased building of hives		Eased harvesting	
		High production because harvesting season is extended with modern beekeeping	

The bark hive is the most commonly used (85% of the hives present in the study area are bark hives) (Haesler, 2012), it is the traditional Tanzanian hive, made from the barks of melliferous tree species (species from the genus *Julbernardia* or *Brachystegia)* (Kihwele *et al*., 2001). These hives have a

[11] Many reasons explain this situation: they are either not allowed to participate in the harvest because it is a time-consuming activity, which does not leave them enough time to take care of household tasks, or they are afraid of climbing trees or going into the forest by night (as the harvest is mostly practiced by night to benefit from the calm in the hives), or they are afraid to get stung (it is important to note that the majority of women practicing beekeeping wear protective clothing) (Haesler, 2012).

productive life of about 5 years (Association for the Development of Protected Areas, 2004a). Problem related to the use of this type of hives is that removing the bark from a tree increases the risk of infection by pathogens, threatening its survival. Moreover, the harvest of this type of hive implies to smoke them importantly, which results in the burning of the colony. For these reasons, their manufacture has been forbidden since 2007 and their use since 2010 (The Beekeeping Act, 2002). This type of hive produces about 20 kg of honey (Haesler, 2012).

The other hive type largely used is the log hive, made from pieces of tree stems. Generally, dead trees are used; four to five hives can be made out of one tree. This hive has a useful life of about 15 years. However, the log hive produces less honey than the bark hive. 12% of the hives present in the study area are bark hives (Haesler, 2012). These traditional hives (figure 8) do not separate the various bee products such as wax or royal jelly, as the queen is not separated from worker bees; therefore wax and propolis are mixed with honey, which lessens its quality. Another problem is that these high-value products are lost (Haesler, 2012).

Figure 8: Bark and log hives

(© beesfordevelopment.org, 2013)

(© Hélène Weber, 2006)

The box hive (figure 9), which is the modern hive, appeared in Tanganyika during the German colonial period. It is environmentally compatible, as it does not necessitate as much timber as the previous types. It has a productive life of about 15 years (Varet, 2006) and produces about 30 kg of honey per year. Despite these benefits and the support provided by ADAP for the development of modern beekeeping, they are not widespread (only 3%), as they are heavy to transport from the village to the forest, their construction is expensive and most beekeepers do not have the knowledge required to build this type of hive (Haesler, 2012).

Figure 9: Box hive

(© Hélène Weber, 2006)

The hives' location is chosen according to the presence of melliferous trees and water availability, security distance between hives and settlements, and the distance to the villages, mostly by feet or bicycle (Haesler, 2012). Hives allocation is decided according to the villages' locations; therefore, the beekeepers most concerned by the Beekeeping Zone are the beekeepers from Mgombe, Kanoge,

Wachwaseme and Inyonga villages. Most of the beekeepers use beekeeping camps to collect and store honey during the harvesting season. These are temporary constructions, in the form of huts made of poles and boards. In 2006, there were 23 camps in the Beekeeping Zone. Beekeepers generally inherit their camp's location from their grandfather (Haesler, 2012), who lived in these places before the resettlement following the spread of sleeping-sickness[12] and the *villagization* program. These locations contribute to maintain a sense of identity amongst beekeepers and have a strong cultural value.
Before the implementation of the Beekeeping Zone, permits to practice beekeeping could be obtained from the Beekeeping Officer in Inyonga village. The revenue from this permit system accrued to the district level.

Trophy hunting

The hunting block located in the Beekeeping Zone, *Mlele North*, is about 2'200 km2 and is integrated in a network of six hunting blocks, gazetted as Game Controlled Areas. This block is leased for the 2013-2018 period to Wild Footprints Ltd. (annex 3: Hunting block allocation). This outfitter is new in the region, thereby no data exists concerning its practices, but it seems that the company sub-leases its block to the company to which the block was allocated before, Tanzania Big Game Safaris (TBGS).

Hunting season ranges from July to December, but as climate conditions are not favorable from October to December (rainy season) TBGS receives clients in August only, which represents 3 to 4 clients per year in this block (Weber, 2006). Each safari requires 15 to 20 persons (professional hunting guides, drivers, and weapon carrier, mostly recruited in urban centers, skinners, trackers, waiters, cooks and camp guards recruited locally). Off-season, two game scout units, in collaboration with district officers, regularly patrol the hunting blocks in trucks for anti-poaching activities. However, as most roads are not passable during the rainy season, they only patrol from May to July (Weber, 2006).

Trophy hunting is a very lucrative activity for both the trophy hunting companies and the State.
Trophy hunting companies have to pay the necessary permits and taxes (leasing of hunting blocks, slaughter tax and a conservation tax) to the MNRT-WD, which redistributes 25% of the revenue to the districts. Part of these benefits is then supposed to be allocated to villages, which is rarely the case (Weber, 2006).
As an illustration one can see on the table 6 the revenues collected by the Mpanda district for the years 1995-2003.

Table 6: Revenue from wildlife hunting taxes (1995-2003) in Mpanda district
(source: Mpanda District Council, 2008, modified)

Year	Tourist hunting revenue (US$, at current price)
1995	304'006
1996	334'464
1997	445'473
1998	227'753
1999	130'505
2000	111'673
2001	111'370
2002	105'838
2003	152'360

Timber exploitation

Wood exploitation is mostly practiced by companies based in Tanzanian urban centers (Mpanda District Council, 2008). One can assume that this activity is practiced during dry season, *i.e*. between May and October, for transport reasons. This activity also requires a permit, which is available at the District Natural Resources Office, in respect of the quotas attributed by the MNRT-FBD. Permits are expensive (about 1'800 US$ for 20 m3 of timber), thereby most of the logging is done illegally (ADAP,

[12] This will be explained later in Part II

2013, personal communication). Revenue is collected by the district, as well as the fines in the case of illegal logging (Weber, 2006).

Ecotourism

ADAP and IEA offer ecotourism trips since 2002. From 2002 to 2013, ADAP organized five trips of six tourists each (Association for the Development of Protected Areas, 2003b). Most of the time, these trips are organized during dry season. Facilities have been set up to accommodate the tourists in the Beekeeping Zone, such as a camp, and five persons have been hired and trained to provide tourist services (a guide, a cook, two camp employees and a District Game Officer responsible for security and for tracking animals). Activities practiced in the Beekeeping Zone are assisting local beekeepers in collecting honey according to traditional methods, and wildlife viewing. Tourists generally stay 3 to 4 days within the Beekeeping Zone. Direct financial returns at the local level were estimated at 1'770 US$ per trip in 2003, which are allocated to salaries, payment for services, housing, taxes and permits to enter the Beekeeping Zone, and donation to health centers. Indirect profits were estimated at 1'080 US$ per trip from food and gas expenses (Association for the Development of Protected Areas, 2003b). Nevertheless, at present, the trips are sporadic and do not allow ADAP to pay any annual salary (Hausser, 2013, personal communication).

Noncommercial activities

Fruit (but also roots, mushrooms, and insects) harvesting is largely practiced, mainly by beekeepers for their personal consumption when they are working in their temporary camps. This harvest occurs between November and January. Moreover, many tree species present an interest in traditional medicine. The harvesting of roots, barks, leaves and flowers is largely practiced, also at the end of the year. This activity has no commercial objective for the moment (Weber, 2006). Mlele Beekeeping Zone shelters a large number of worship places, mainly used by elders and traditional chiefs from Mlele district (in 2006, they were about 15 traditional chiefs). As Mlele district inhabitants are descendants of hunter-gatherer tribes living in this area, superstitions and beliefs related to their place of origin remain. These persons go to the Beekeeping Zone punctually throughout the year (Weber, 2006).

Below is a schedule of activities taking place in the Beekeeping Zone (table 7). It shows that on a temporal scale, most activities are compatible, as they occur or can take place at different periods of the year (particularly during the hunting season, it is possible to find agreements for a spatial allocation of activities given the extent of the Beekeeping Zone, and thereby avoiding issues of security).

Table 7: Beekeeping Zone's schedule of activities
(source: Weber, 2006, modified)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Beekeeping												
Trophy hunting												
Timber harvesting												
Ecotourism												
NTFPs harvesting												
Traditional worship												

PART II

4. A GENEALOGY OF NATURAL RESOURCES CONSERVATION AND MANAGEMENT IN TANZANIA

This chapter aims at conducting a historical analysis of discourses (a *genealogy*) on natural resources conservation and management in Tanzania from the colonial period until the present, focusing on the actors, practices and concepts related to natural resources conservation and management, and the results of these in terms of changes in legislation and conservation models. This chapter will therefore highlight the shifts in discourse and practices, which contributed to shape the conservation and development field – from authoritarian conservation based on spatial and sectoral strategies of exclusion, to community-based natural resources management, influenced by specific national and international actors. The chapter is divided into two main periods: the first one characterized by a sovereign environmentality, from the late 19th century ending with Nyerere's leaving in 1985, the second one from this year until the present, characterized by neoliberal policies and the participation of local communities in natural resources management. This separation highlights the political agendas of these periods shaped by international discourse on development and conservation. Finally, this chapter places the Beekeeping Zone's model in this historical perspective, and investigates trends and policies which made the Beekeeping Zone model possible, by questioning the participatory approach supported by these policies.

4.1. *Sovereign environmentality*: enclosure, conservation and profit-making

The country's opening on to the Indian Ocean has historically contributed to attract various outsiders. Since the eighth century, the coastal area welcomed traders and immigrants from Arabia, Persia, India, Portugal and France. During the nineteenth century, Arab traders began to penetrate farther into the interior, in the search for slaves and ivory, and developed several inland settlements as important trading centers. Europeans started then to show a scientific interest in Tanganyika[13] by sending geographic explorations (Sunseri, 2007). German colonists entered the area in the 1880s and the German government declared Tanganyika a protectorate in 1891. The German East Africa administration soon tried to make the territory economically self-sustaining by the exploration and exploitation of its resources (sisal, coffee, rubber, cotton, but also beeswax and honey) by immigrant farmers from Europe, and to create an enabling environment by developing the railway lines and schools, and initiating a formal land tenure system (Neumann, 2001).

Legislation on land matters were thus elaborated, such as the *Kronlandverordnung* (imperial crown land ordinance) of 1895. This ordinance granted the colonial authority the exclusive right of occupation of *ownerless land*. Impressed by the variety of wildlife and game of its new territory, the colonial authority completed this ordinance by legislation to protect wildlife, which authorized the colonial administration to create hunting reserves. By 1914, fifteen Game Reserves were created and covered an area of 30'000 square kilometers, which represented 3% of the whole area of the territory (Wanitzek and Sippel, 1998). The objective of the hunting reserves was to preserve endangered wildlife for scientific purpose and to give recreation opportunities to future generations (Wanitzek and Sippel, 1998). Without a permit, hunting was prohibited to all users, including local hunters.

Forest resources also became protected, at first motivated by the need to generate revenue for the colonial state. Therefore, the German administration rapidly sent foresters to collect samples and information on woodland trees, and their suitability for European and African construction and

[13] Tanganyika is the former name of mainland Tanzania until 1964, when it merged with the island of Zanzibar to form the nation of Tanzania

furniture. Nevertheless, forestry in German Tanganyika faced many management problems and appeared to fail to become cost-effective mainly due to the bad conditions of roads and labor shortages (Schabel, 1990). The German colonial authority therefore redirected its policy toward environmental management. It implemented a policy of forest reservations aiming at preventing forest loss from fire and grazing and at protecting forests for the preservation of water catchments (Lovett, 2002). This change was motivated by observations made by scientists and officials arrived from Germany who deplored the scarcity of high forests of the protectorate (in comparison with what could be seen in Germany). Consequently, they considered the secondary forests of Tanganyika as severely damaged and destroyed, in particular by *uncontrolled "forest exploitation"* by European settler farmers and by the "*detrimental habits"* of the local people (Schabel, 1990, p. 132). Throughout the German occupation, the administration attempted to restrict, prohibit or impose fees on the use of forest resources in order to limit the perceived damage caused to forests. In 1904, the government enacted the first Forest Conservation Ordinance, which converted 7'500 square kilometers of woodlands in Forest Reserve (which represented 0.8% of the territory), where settlements, farming, grazing or other unauthorized uses were prohibited. However, where Forest Reserves were not also Game Reserves, hunting remained allowed (Wanitzek and Sippel, 1998).

The enforcement of German overlordship and methods of administration were strongly resisted throughout the country (the Maji Maji rebellion in 1905 was the most severe and widespread resistance movement to German occupation) (Schabel, 1990). The colonial administration had to replace its authoritarian system of natural resources management with a more liberal form of administration, and a system of compensation was implemented. Local communities living in scattered settlements within a planned reserve were relocated and received compensation for the loss of their traditional rights as forest users. Moreover, reservations were set up to secure the livelihoods of communities living in permanent villages in the form of licenses or concessions that could be granted to individuals or private companies for the commercial exploitation of wood, agricultural and pastoral uses (Schabel, 1990). Thereby, these reserves removed large areas of land from traditional activities such as beekeeping, NTFPs gathering and hunting.

However, at that time, as the reserves were scattered across the territory and very limited in terms of geographical area, an efficient control was therefore impossible. Indeed, no reliable information exists whether these reserves seriously affected local populations (Wanitzek and Sippel, 1998). German interventions regarding natural resources were therefore directed toward the production of raw materials, and conservation aimed at preserving potentially exportable goods. The German authorities thus implemented a coercive conservation model based on enclosures, indicating a perception of natural resources *governmentality* based on a *sovereign environmentality*.

World War I had a disastrous effect on the country. The German colonial administration and the economy collapsed, resource exploitation stopped and people reverted to their pre-colonial livelihood strategies. As a result of the Treaty of Versailles (1919), Britain received a League of Nations mandate to administer the territory (then renamed Tanganyika Territory).

British colonial authority had a critical influence on the natural resource management sector in the country as it contributed to constitute and institutionalize conservation strategies by providing specific policies and by structuring the territory according to its cultural values and scientific objectives. Historians link the origin of modern environmentalism and conservation to the emotional importance of African environment for the European colonists. The British conservation model is the result of culturally constructed western ideas of nature, such as the concept of *wilderness*, that explain the fascination for African wildlife and the fear of its disappearance (Neumann, 2002). However, apart from European cultural values regarding nature and wildlife, a series of political and economic elements contribute to an explanation of the increase in conservation initiatives during the British colonial occupation.

The British administration started its development plans by trying to resolve land tenure issues that emerged after the withdrawal of European farmers settled by German authority when local communities started to reclaim their rights on these areas. The British colonial administration enacted the Land Ordinance of 1923, which declared all land in Tanzania, whether occupied or unoccupied, to be public land. The State, represented by the Governor, had the right to hold, administer and control the land for the use and the common benefit of the *"natives"* of Tanganyika, with respect "*to the native laws and customs existing in the district in which such land is situated*" (The Land Ordinance, 1923, Sections 3 and 4). This Ordinance thus recognized the deemed right of occupancy that existed under customary law (The Land Ordinance, 1923, Section 2):

> *"Provided that nothing in this Ordinance shall be deemed to affect the validity of any title to land or any interest therein lawfully acquired before the date of the commencement thereof and that all such titles shall have the same effect and validity in all respects as they had before that date."*

Under this Ordinance, the local population was granted customary rights of occupancy on public lands, which would remain under local control through customary tenure systems. Moreover, the British administration reorganized the system of native administration to build up local government based on traditional authority (United Republic of Tanzania, 2013). But, as Neumann (1997, p. 48) points out *"Although the Land Ordinance affirmed the importance of indigenous claims, it nevertheless contradicted the Mandate and did not provide the legal procedures to protect the rights of Africans it upheld in principal"*, as public land could always be reclaimed by the state for public purpose or interest. The other type of tenure right recognized by this ordinance was the granted right of occupancy provided by the statutory law: "*a title to the use and occupation of land shall be termed a right of occupancy*" (The Land Ordinance, 1923, Section 5).

Concerning natural resources management, German colonial policies and spatial reservations were kept in place without major amendments during the first decade of the British mandate. Nevertheless, the British colonial authority soon began to reform and amend the former policies and to direct its efforts toward a stricter protection of nature. In 1933, Britain signed the London International Convention Relating to the Preservation of Fauna and Flora in their Natural State. The convention contained recommendations "*to outlaw most customary African hunting practices, which conservationists deemed cruel and wasteful*" (Neumann, 2002, p. 24). This convention formed the basis of the elaboration of the concept of a National Park free of human interests and disturbance, and prompted the authorities to integrate such a concept in the subsequent colonial policies.

Along with the elaboration of the convention, a major memorandum on the spread of the tsetse fly in Tanganyika was issued. It expressed the fear that the country could return to wild nature (Neumann, 2002), and gave the start of a vast plan of rural population displacement and evacuation. As Neumann points out *"Unlike their Belgian and French counterparts, who medicalised the problem, the British emphasized a spatial strategy of evacuating the population of affected areas and concentrating settlements elsewhere"* (Neumann, 2001, p. 648). These areas affected by the *sleeping-sickness* formed the core of Tanzanian protected areas, and contributed to reinforce the image of a sparsely populated, remote and tsetse fly-infested landscape (Neumann, 2001).

Concerning forest resources, the British administration closely followed the Germans' forest regulations. The German legal framework was amended and British administration, through the newly created Forest Department, enacted a Forest Ordinance in 1921, incorporating the Forest Reserves gazetted by the German administration (Neumann, 1997). This Ordinance instituted various prohibitions in Forest Reserves such as cutting or removing trees or forest products, firing, squatting, grazing and cultivating. However, the British authority recognized the rights for the local population to access and use forest products, and these *free use* rights were granted through state mechanisms of control. Conflicts appeared as British foresters considered these *free use* rights as government-granted privileges, and because an ambiguous system of access was instituted, based on whether a

forest product had exchange value (and was then monopolized by the State) or use value (and was then left for local consumption) (Neumann, 1997). Foresters highlighted that since the government was incurring management costs, it was normal that local population should pay the State for the resulting benefits accrued from forest products collected in the framework of the *free use* policy. The timber trade was considered handicapped by *free use*, and these practices had to either stop or provide revenues. Therefore, they claimed the abolition of any rights to *free use* of existing Forest Reserves, and requested the collection of royalties on any forest product (Neumann, 1997).

To counterbalance these issues and avoid an uprising of rural populations, the colonial administration proposed in the beginning of 1930s, as an extension of the principle of the indirect rule to forest reserve management, the implementation of *Native Authority Forests Reserves*, managed by *native authorities*. These *native reserves* were considered a solution to meet local needs, which could replace the government forests' *free use* system. Thereby, it was specified that these *native reserves* were of strictly local value, which contributed to limit local communities' participation in the economy to that of peasant producer. These reserves were conceived to commit local communities to scientific forestry, without giving them the opportunity to control forest areas and be involved in market exchanges (Neumann, 1997). The introduction of this new type of protected areas led the colonial administration to increase the total area of reserved lands (table 8).

Table 8: Total area of designated Forest Reserves in Tanzania, 1933-1952
(source: Neumann, 1997)

Year	Government Forest Reserves (square miles)	Native Authority Forest Reserves (square miles)
1933	3'934	21
1936	4'019	85
1937	4'060	107
1938	4'067	112
1940	5'770	No data available
1941	4'443	107
1942	4'470	No data available
1943	4'468	338
1944	4'608	No data available
1946	4'675	172
1947	4'672	224
1949	6'661	393
1951	8'381	No data available
1952	10'945	No data available

This new type of protected areas represent the premise of a new *environmentality*, the *disciplinay environmentality*, which will form the basis of future natural resource management interventions. Nevertheless, policies were characterized at that time by the *indirect rule*, which aimed at preserving African cultures and traditions and protecting them from rapid change by the integration of existing local political systems in territorial governance. British colonial authority feared *detribalization*, which was understood as a social dislocation because of urbanization and migration for wage labor (Neumann, 2002).

After World War II, international political and economic trends transformed the content, the implementation and the enforcement of conservation policies in Tanganyika. British colonial authority initiated an agenda of development and modernization of the territory. This agenda was characterized by reforms based on the observation of the poverty of the population and the belief in the ability of the State to provide a means for a social and economic development through centralized state planning. These reforms underlay the will for the economic recovery of Britain, by providing the country with cheap resources and markets for British manufacture. These reforms were expressed by deeper interventions to modify settlements but also agricultural practices, led by scientists and technical experts, but also by the proliferation of parastatal organizations. New policies were elaborated, and there was a widespread idea that Tanganyika's society could be transformed by the application of science and the introduction of a planned capitalist development. Natural resources would be scientifically developed and the population's practices managed in order to provide a basis for social justice related to land use and occupation. Population's labor was to be

redirected away from wildlife and forest product uses, and settlements had to be relocated and concentrated to give space to nature protection (Neumann, 2002).

In 1947, the Conference on the Fauna of British and Central Africa took place in Nairobi, and the main outputs of this conference were the need to implement scientific management, expert planning, and a colonial governance of natural resources. It was acknowledged that the decline of wildlife and forest resources was due to the *natives* and that deeper interventions into rural social life and land uses were necessary (Neumann, 2002). The National Park's category was introduced in the territory and successive National Park Ordinances were enacted, which introduced new regulations prohibitting or restricting entry, residence, hunting and NTFPs collection and extinguishing all land rights existing before. These new policies directed the objective of this type of protected area toward game viewing tourism.

Game regulations were enacted during the same period, providing a classification of conservation areas according to different degrees of protection such as Game Reserves and Game Controlled Areas. Like the National Park Ordinance of 1959, this Ordinance is, in an amended form, the current legislation on Game Reserves in Tanzania. In Game Reserves, access, residence, game viewing, hunting and natural resource uses were allowed with a permit granted by the Director of the Wildlife Division, a structure created during this period to ensure wildlife protection and the development of the hunting sector. In Game Controlled Areas, restrictions existed regarding hunting (a hunting permit was needed), but residence, entry, cultivation, grazing of livestock and cutting of trees for certain purposes were allowed (Wanitzek and Sippel, 1998).

As the demand in timber decreased after World War II, and the British administration redirected its objectives toward forest protection. Forest Reserves were created to protect, preserve and manage forests by prohibiting damage and by restricting the use of forest products. The Governor was empowered to declare any area a Forest Reserve and provide any regulation regarding access, use of trees, residence and economic activities such as cultivation and grazing of livestock. In 1952, Forest Reserves covered 3.2% of the country. The Forest Ordinance of 1957-59 (which is still in force with certain amendments) provided a new legal basis for Forest Reserves. Forest Reserves were renamed National Forest Reserves, and subject to national administration, while *Native Authority Forest Reserves* were renamed *Local Authority Forest Reserves*, and later *District Forest Reserves*, being under district administration. This new Ordinance integrated provisions regarding the creation of new rights or the preservation of existing rights. The rights of a *native community* to use and occupy land, granted in accordance with *native law and custom* could be claimed; otherwise, only rights of occupancy granted by the Governor could be claimed or created (Wanitzek and Sippel, 1998).

Tanganyika, driven by Julius Nyerere, gained its independence in 1961. The new government focused on rural development through a socialist mode of politics based on self-sufficiency to achieve social and economic development. Nyerere's approach relied on the concept of *Ujamaa* (a Kiswahili word meaning family, relationship, brotherhood), which he converted into a political-economic management model (Rechenbach, 1968). Part of this model was a program of *villagization*, contained in the Arusha Declaration, which aimed to ensure the rural people’s livelihoods, by creating an autonomous and egalitarian society through the resettlement of people into designated villages and the rationalization of farming (collectivization of all forms of local productive capacity, regional specialization, and promotion of maize product) (Nyerere, 1967). A decentralization process materialized by the implementation of a new administrative zoning system and new local governments accompanied the program (The Planning Commission and the Regional Commissioner’s Office, 1998). As a result, these reforms contributed to the exclusion of local traditional authorities which were able to maintain themselves during the British occupation, the weakening of community organizations and the deterioration of relations between local communities and the central government. The impacts of this decentralization process were numerous: proliferation of

authorities in charge of land allocation, devolution of administrative and political responsibilities to under-skilled personnel, which multiplied corruption opportunities at various administrative levels and led to disastrous land tenure management (Ylhäisi, 2003). These results further orientated rural development to a top-down, controlling and coercive way, and the *Ujamaa* policy failed. Nevertheless, this policy provided a basis for social participation, by concentrating its efforts toward an equitable sharing of benefit and political space.

Concerning natural resources management, post-colonial policies showed in the first place an anti-conservationist program, to remove all western interference. Nevertheless, the need for economic development of the country encouraged the government to follow the British colonial policies and to make profits from the country's natural resources through tourism. Alongside these economic preoccupations, this change can also be explained by the new geopolitical balance of power between the former colonial States and the newly independent African countries. The new African States oriented their objectives toward political and economic development, but conservation policies were imposed on them as international organizations (the United Nations Educational, Scientific and Cultural Organization, the International Union for the Conservation of Nature and the World Wildlife Fund especially) increased their influence on the international stage (Montamat, 2007). The Arusha Conference in 1961 also expresses this balance of power: the objective of the International Union for the Conservation of Nature was to convince African States of the benefits of conservation by promising international financial support. Julius Nyerere (cited in Watterson, 1961) declared:

> *"The conservation of wildlife and wild places calls for specialist knowledge, trained manpower and money and eve look to other nations to co-operate in this important task - the success or failure of which not only affects the continent of Africa but the rest of the world as well"*.

The western scientific rationality led African governments to abandon part of their sovereignty in favor of Northern conservation NGOs' scientists. Tanzania followed the National Parks and Game Reserves creation policy established by the former colonial authorities (Ruaha, Mikumi, Gombe, Tarangire, Kilimandjaro, Katavi, Arusha National Parks and Maswa, Rungwa et Kisigo Game Reserves were created during this period) (Baroin and Constantin, 1999) (annex 4: Tanzania protected areas, current situation). The country's lack of public policy related to conservation and financial resources to exercise its power at the local level left space to international conservation NGOs. The latter elaborated a scientific discourse legitimating their interventions, and increased their influence on environmental decisions.

The forest sector, already marginalized during the colonial era, as it did not succeed in meeting its financial objectives, had to respond to the changing politics and economics of scale (Hurst, 2003). At independence, 34 to 48% of mainland Tanzania's land area was covered by forests, out of which 37% was gazetted as Forest Reserves (Hurst, 2003). The Forest Division tried to take advantage of this situation and increase its political influence by trying to increase the number of Tanzanian foresters in the government and to foster the economic productivity of the sector. However, these objectives received little support in political circles and could not compete with more pressing development priorities such as agriculture. Thereby, as Hurst mentioned it (2003, p. 363), "*foresters and forestry in this period appeared to be marginalized in the political processes that determined socio-economic planning of the early independence period*". As agricultural reforms shifted the scope of development toward villages, foresters still conceived forestry activities at the national scale, and were unable to adapt and take into account the concerns of local communities. Moreover,

> *"Ecological justifications for state intervention and control were politically unpopular anyway, seen by many politicians as a negative aspect of colonial rule. [...] Even when foresters tried to justify exclusionary forest reserves by highlighting the role that forestry played in supporting rural economies and agricultural development, they were still doing so in generalized spatial terms"* (Hurst, 2003, p. 365).

The Forest Division did not succeed in articulating a new relationship between itself and local communities' needs. The local or village-centered development thinking was not implemented in the forest sector, and other government sectors and local communities mistrusted its motives, which contributed to reinforce its marginalization (Hurst, 2003).

These elements show that European colonialism and the regime implemented after indeptendance, embedded in a *sovereign environmentality*, were characterized by the appropriation of land and natural resources by the State. Authorities aimed at creating a modern State, with a defined territory and a political and institutional power facilitating the provision of services. This vision led to a spatial reorganization of the territory, wildlife populations, land uses and human settlements. Human-environment interactions were simplified on the scale of the territory, to facilitate control over Nature, which in turn could facilitate control over populations and their practices. Policies implemented at that time did not aim at accommodating previous natural resource management strategies, and thereby devalued traditional environmental knowledge (Ford Foundation, 1998). As an example, colonial forestry interventions criminalized traditional land uses and spatially segregated what had been integrated production activities. In this process, local systems of forest resource use and access control were disrupted (Neumann, 1997). This spatial segregation of natural resources and human populations had a fundamental and long-lasting impact on the following conservation practices and economic development. Moreover, the centralized control over resources led to a weakening of local institutional arrangements, which altered the regulatory mechanisms of local resource use. It concentrated on the regulation of individual resource users, whereas traditional regulatory mechanisms had focused on the regulation of groups of users (Ford Foundation, 1998).

4.2. *Disciplinary* and *neoliberal environmentalities*: the emergence of *epistemic communities*, participation and commodification of natural resources

When Nyerere stepped down from power in 1985, the natural resources and tourism policies took the direction of local communities' involvement in natural resource conservation. Globally, many governments of the South, encouraged by international development agencies, embraced this new approach. Furthermore, the structural adjustment programs in the 1980s and 1990s negotiated between the States and the Bretton Woods institutions and the imposition of a neoliberal economic philosophy, by withdrawing funds from states and imposing decentralization processes[14], have weakened and fragmented state control and reinforced states' dependence on external funding, technology and expertise, which make them easier to penetrate by *epistemic communities* (Igoe and Brockington, 2007). This context gave space for international conservation NGOs' professionals, who used the opportunity to reconsider the conservation model and look for new forms of natural resources protection and management, combining conservation and development objectives. These new models kept the economic focus which emerged in the 1950s in the African colonies, but reoriented these financial resources toward new beneficiaries. The utilization of space and protected areas had thus to be modified (Rodary, 2001).

In Tanzania, these changes can be attributed to the beginning of the economic reforms in 1986-1987 in the framework of the structural adjustment programs. Structural adjustments required that the Tanzanian government abandon part of its responsibilities, and devolve and democratize participation in the economy. Development agencies such as GIZ and NORAD participated in these

[14] These processes were supposed to establish and democratize local governments in order on the one hand to improve service delivery and thus increase efficiency, and on the other hand to improve local development and management, increasing therefore equity. This increased proximity could reduce transaction costs, improve downward accountability of decision makers, and enhance the convergence between decisions and allocation of resources and local needs (Ribot, 2006).

reforms by providing scientific, technical and financial support to facilitate the elaboration of new policies related to natural resources. This expertise highlighted the inadequacy of land tenure institutions and regulations in relation to changes observed at the global scale (market-based economy, privatization, and increase in population and urbanization). Land tenure laws did not provide enough incentives for an effective use of resources, and did not contribute to resolve land tenure conflicts opposing various economic activities. Thus, they contributed to environmental degradation (Ylhäisi, 2003). New approaches were necessary, and strategies "*seeking to co-opt the managerial capacities of the uncaptured rural communities*" were implemented through community participation (Ford Foundation, 1998).

Encouraged by the action plan adopted during the Fourth World Congress on Protected Areas (1992), the Tanzanian government promoted the need to ensure that the cost and benefits of biodiversity conservation were shared between global, national and local levels, and that part of these benefits should be channeled to local communities. They should therefore acquire an environmental awareness, be *educated* to conserve natural resources in a sustainable way, and undertake activities *compatible* with conservation objectives (Montamat, 2007). This concern changed the conservation model implemented in the country. From an ecological and economic dimension, conservation expanded to a political dimension as the participation of local communities became accepted as a central concept since the 1990's in the country's natural resource management sector. Moreover, conservation gained a renewed legitimacy, consideried as a response to economic development needs through the sustainable use paradigm, emerging during this period.

Sustainable use as a concept appeared in the Report *Our Common Future* already mentioned (The United Nations World Commission on Environment and Development, 1987), later defined by the Convention on Biological Diversity (United Nations, 1992, art. 2) as

> *"The use of component of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations".*

Sustainable use involves the creation and implementation of methods and processes for the use of biodiversity, which are specified in the *Addis Ababa Principles and Guidelines* of the Convention of Biological Diversity (The Secretariat of the Convention on Biological Diversity, 2004). It is considered an effective means to meet development objectives (*Millennium Development Goals*, notably) such as the eradication of extreme poverty and hunger and ensuring the viability of the environment (The Secretariat of the Convention on Biological Diversity, 2004). It is noted that free access to biological diversity often induces overexploitation, as conceptualized in Hardin's theory (Hardin, 1968). It is exposed that resources which are subject to use rights, non-use rights and right of alienation are generally used in a more rational way.

Tanzania, following the international trends in conservation, started to develop policies aiming at the commodification of natural resources, the self-disciplining rural communities, and to implement mechanisms facilitating their transformation into eco-rational subjects.

4.3. Natural resources conservation and management through the development of beekeeping

4.3.1. Pro-poor globalization and the role of natural resources

Tanzania's poverty reduction strategy is included in the document titled *Tanzania Development Vision 2025* (United Republic of Tanzania, 1995). This paper summarizes the economic and social objectives the country set for 2025, namely quality life for all, which implies the eradication of extreme poverty, the creation and equitable distribution of well-being and a popular and democratic participation of all social groups. To specify this vision, a *National Strategy for Growth and Reduction*

of Poverty (United Republic of Tanzania, 2005) was developed in 2005, which presented the medium-term strategy for poverty reduction. This strategy replaced structural adjustments and provided a framework to guide the relationships between government and donors. The preparation of the *National Strategy for Growth and Reduction of Poverty* and its acceptance by donors conditioned the cancellation of part of the debt of the country (Ellis and Mdoe, 2003).

Thereby, the poverty reduction strategy was based on an "*accelerated and equitable growth*" (United Republic of Tanzania, 2005, p. 14), and on the potential trickle-down effects of a stable macro-economic environment and the effective promotion of structural reforms, thus focusing on a *pro-poor* effect: "*the Government will put increased emphasis on reforms aimed at promoting export-oriented expansion and diversification of the "pro-poor" sectors, with a view to enabling the poor to share increasingly in the benefits of globalization*" (United Republic of Tanzania, 2005, p. 14). Agriculture was the primary sector concerned by these reforms; it was to move from a state-controlled sector to private investment and market-oriented approaches.

This strategy was further completed in 2010 with the *National Strategy for Growth and Reduction of Poverty II* (The Ministry of Finance and Economic Affairs, 2010). As mentioned in the document (p. 27),

> *"The major shift of this Strategy from its predecessor is high drive and scaling up the role and participation of the private sector in economic growth and employment generator and creation, through strengthening business climate for efficient use of factors of production".*

Economic globalization is characterized by an increased fragmentation of the production process (vertical specialization), which means the relocation of part of the production process from one country to another, which implies a globalization of the value chains, involving trade through growing networks of firms across borders. Foreign direct investments increasingly participate in the global value chains. In this rearrangement of production and economy structures, pro-poor growth should therefore be good for the incomes of the poor in absolute terms, or proportionally better for the poor than the rich (thereby emphasizing on equality aspects), or both (Willem te Velde, 2008). Tanzania seems to favor the first option, as growth is supposed to permeate every part of the society, and not specifically the poor. In this specialization process, the government of Tanzania primary recognized the importance of natural resources such as charcoal, honey, wild fruits and firewood for poor people's income generation and planned to maximize the potential advantages of natural resources through their sustainable use: *"Future iterations of the [Poverty Reduction Strategy Paper...] will help define a more consistent framework for managing activities aimed at protecting the environment"* (United Republic of Tanzania, 2005, p.21).

In 2010, apart from agriculture and manufacturing still being at the core of the development objectives, the new strategy exposed its goals for tourism and natural resources use development. As a pro-poor strategy, "*the contribution of tourism as a source of growth and income goes beyond foreign exchange earnings, government revenue and foreign direct investment at the macro-level, to direct job/employment and local multiplier impacts at the micro-level*" (The Ministry of Finance and Economic Affairs, 2010, p. 48). Regarding natural resources, the aim of this strategy is to implement mechanisms for taking advantage of the benefits obtained from the environment, "*particularly forests and wildlife [which] are assets of very high value*" (The Ministry of Finance and Economic Affairs, 2010, p. 61). This includes, amongst others (The Ministry of Finance and Economic Affairs, 2010, p. 62):

> *"- Supporting the private sector in the exploitation of natural resources while monitoring and regulating the business in a transparent manner;*
>
> *- Enhancing community based natural resource management arrangements;*

- *Improving legislation on ownership/access to environmental and natural resources"*

The roles allocated to various non-government actors are defined. The private sector is considered as the engine for economic growth. It will work with the government to develop inclusive markets, which "*are profitable and pro-poor*", participates in policy formulation in collaboration with the government and creates decent employment and jobs (The Ministry of Finance and Economic Affairs, 2010, p. 107). Local communities "*will participate in financing, planning, implementation and monitoring community activities supported by government and other actors*" (The Ministry of Finance and Economic Affairs, 2010, p. 108). The strategy provides for mechanisms ensuring downward accountability of authorities at every level of government administration. The civil society organizations and development partners are considered key actors in poverty reduction. Their role is to strengthen local communities' capacities and ensure their participation in the development of the country.

This shift is integrated in a global shift, which appeared in the conservation field. Local communities' political and economic participation became a tool and a new paradigm in conservation, and natural resources use was considered as potentially economically efficient in the rural areas of the South. For Adams and Hulme (1998), the international development assistance *New Policy Agenda*, which emerged in the 1990s, promoted CBC because of its ability to combine neo-liberal economic policy prescriptions and *good governance*. This approach, in accordance with its time, recognized the role of economic incentives and markets, and the need to downscale the role of the State in order to deepen the democratization process. As Jones and Murphree (2004) suggested, this approach relies on economic instrumentalism, which suggests that the sustainable use of natural resources can achieve natural resources conservation: "*sustainable use is the use of resources that allows the continued derivation of benefits, tangible or intangible. [...] However, [...] it was economic benefit that was identified as the major driver for sustainable use*" (pp. 64-65). As Brockington and Duffy (2010, p. 480) mentioned, "*conservation is integral to the neoliberal project*".

In this model, natural resources conservation and management are considered a social, economic and political issue that can only be addressed if the policy context promotes enabling conditions that confer high economic value to natural resources and that promote natural resources management as an economically competitive form of land and natural resource use. The solutions to conservation problems would be achieved through providing the appropriate economic and institutional framework allowing the implementation of a process of negotiation over resources rights and access between actors and the introduction of a new system of ownership and territorial rights for the resident community.

4.3.2. Beekeeping as a means to alleviate poverty

Honey hunting and traditional beekeeping (using bark or log hives) are still part of the subsistence economy of the communities living in the miombo woodlands of south-central Africa. It is part of a multiple land-use strategy aiming at food security and vulnerability reduction by diversifying households' activities.

Beekeeping, although it cannot be the household's only source of income, can play an important role in rural livelihoods. The renewed interest for indigenous technical knowledge, local economic strategies, including the informal sector, refers to the concept of autonomy or self-sufficiency in development literature. Beekeeping is part of this framework because it relies on indigenous knowledge, skills and interests, uses locally available resources and markets and generates an additional source of food. In addition, it can represent a secondary activity in terms of income generation, provide jobs at local level and promote the joint development of agriculture and product manufacturing. Moreover, it has a positive effect on farming through the increased pollination of cultivated crops and contributes to the conservation of indigenous bee forage plants (Nel *et al*.,

2000). Moreover, in the globally observable context of disappearing bee colonies, the survival of apiaries to ensure pollination and thereby crops production is of great importance.

In rural areas, beekeeping can be an adaptation strategy to climate conditions or price fluctuation impacting crops, and therefore reduces a household's vulnerability. Indeed, honey and beeswax can serve as a security net during the hunger gap or drought periods, as they can be stored for a long period, thereby providing food or a high value marketable product (Nel *et al*., 2000). In many places, mixed and unclean honey is still used in the exchange economy, mainly in the form honey beer (brood and pollen combs are needed to provide the protein necessary to develop the yeasts which enter in the manufacture of beer), which serves as payment for services or is used in traditional ceremonies (Rural Development Forestry Network, 1993). Traditional beekeepers are often men in rural Africa; their activity supplies important commodities to the community, which favor social relationships due to its high social status. Indeed, traditional beekeepers are often also traditional healers due to their traditional knowledge of plants and their potential utilization (Nel *et al*., 2000).

Both honey and brood are utilized as a source of food. These products are particularly important during the hunger gap: for example, a mixture of honey and sorghum is an emergency food in Southern Tanzania as it can be stored for a long period (Rural Development Forestry Network, 1993). The Rural Development Forestry Network (1993) highlights the fact that most statistics are turned toward the production for external markets (beeswax and table honey for urban areas or export). Major products derived from traditional beekeeping are thereby undervalued.

However, this aspect should not be set aside, as this activity provides high value products (such as honey, beeswax, royal jelly and propolis) but does not require a significant financial capital. The importance of beekeeping is particularly significant in areas where there are pressures on land resources due to population growth and the accompanying subdivision of land. Beekeeping is a flexible activity which can be practiced by beekeepers in their spare time. It does not require a high human input and is a low-cost activity. Therefore, beekeeping increasingly becomes an opportunity to earn an income and the former traditional approach is changing as young beekeepers undertake this activity without the same experience (Rural Development Forestry Network, 1993). Moreover, as this activity does not require specific physical capacities, women can practice it. This element should be highlighted because women are playing a key role in household livelihoods and the search for new development alternatives (Nel *et al*., 2000). Beekeeping also favors the development of other economic activities by creating employment at the local level: hives can be produced by local carpenters; gloves and veils by local sewing groups and smokers can also be produced by local blacksmiths (Nel *et al*., 2000).

Beekeeping is historically present in Tanzania; it appears to have been performed before the conversion to agriculture during the colonial period. English and German colonial authorities have contributed to the expansion of trade in bee products, especially beeswax, and the introduction of modern beehives and practices aiming at the preservation of bee colonies. The annual average production of honey was estimated by the German colonial authority at 10,000 tons, which was consumed locally (Tanzania Wildlife Research Institute, 2001). The period after independence saw a strengthening of the beekeeping sector and the introduction of development programs through technological innovations (Hausser and Mpuya, 2004). Today, the sector employs about 2 million people and generates about 2 million US$ per year (Match Maker Associates Ltd., 2007). Honey is a source of food (honey, pollen and brood), but also of raw materials for various industries (beeswax candles, lubricants) and medicines (honey, propolis, beeswax and bee venom) (Tanzania Wildlife Research Institute, 2001). Honey is also used during rituals, brewing and for the manufacture of cosmetics (Tanzania Wildlife Research Institute, 2004).

Tanzania is rich in melliferous plants (natural and cultivars); surveys identified more than 300 species. The carrying capacity of productive colonies (number of melliferous bee colonies per km2 surface) was estimated for various types of forest and varies from two for open grassland to fifteen for closed forests (Hausser and Mpuya, 2004). Western Tanzania has traditionally been the core of most beekeeping activities in the country, due to weather conditions, which are relatively mild (Match Maker Associates Ltd., 2007). The MNRT-FBD estimates that the 9.2 million melliferous bee colonies of the country could potentially produce 138'000 tons of honey and 9'200 tons of wax annually (The National Beekeeping Policy, 1998), which represents respectively 138'000 million US$ and 18.4 million US$ according to the prices of 2003, that is 1US$/kg for honey and 2US$/kg for wax (Hausser and Mpuya, 2004). However, the country produced in 2004 4'860 tons of honey and 324 tons of wax per year, which represents only 3.5% of the country's potential annual production (Tanzania Wildlife Research Institute, 2004). More than half of the annual production of honey is consumed locally (Match Maker Associates Ltd., 2007). In rural areas, prices range from 1-1.5 US$ per kg (2010 prices); in urban areas, prices range from 2-2.5 US$ per kg of honey. Beeswax ranges from 2.5-3 US$ per kg. International market prices are higher: 1.8-2.5 US$ for honey, 4.5-5.1 US$ for beeswax (Match Maker Associates Ltd., 2007).

According to the Tanzania Wildlife Research Institute (2004) low production could be explained by the lack of a reliable market, external and internal, mainly due to poor marketing and transport infrastructure, as well as storage facilities. Match Maker Associates Ltd. (2007) also highlights the inadequate entrepreneurship skills among beekeepers.
Urban communities are thereby undersupplied, and the country has to import honey from Kenya (45% of the total import), Switzerland (20%), Australia (17.5%), USA (15%) and UK (2.5%) (Tanzania Wildlife Research Institute, 2004). Tanzania honey is known for its organic nature, and has received a high demand in many countries, mainly in Europe, United Arab Emirates, United States and Japan (Match Maker Associates Ltd., 2007) (annex 5: Honey and beeswax exports: period 2005-2009). It is expected that this demand will grow because Western consumers are more and more concerned with chemicals in food products.

4.3.3. Introduction of Beekeeping policies

It is in the perspective of rural area's development that the Tanzanian Government and other international actors approved in 1998 a new Beekeeping Policy and implemented a National Beekeeping Program in 2001. The National Beekeeping Program 2001-2010 is a tool for implementing the National Beekeeping Policy, which focuses on objectives of environmental conservation, economic growth and poverty reduction through sustainable beekeeping resources management. Beekeeping activities should ensure significant contributions to the national economy, employment and foreign exchange earnings through sustainable beekeeping-based industrial development and trade in bee products to meet local, national and global needs. To this end, the objectives of the National Beekeeping Program are to ensure that the national capacity to develop the beekeeping sector in a participatory manner is improved. The program also calls for involvement of local communities, the private sector, development partners, NGOs, and beekeeper groups and associations in managing beekeeping resources. The National Beekeeping Program also aims at implementing an enabling legal and regulatory framework for the sector (The Ministry of Natural Resources and Tourism, 2001).

The National Beekeeping Program identified a series of challenges the sector is facing (lack of knowledge about, and access to, techniques and equipment, low quality of products, lack of working capital and support for beekeepers, lack of reliable market information at local and international level, transport problems and insufficient transformation into high value-added secondary product). The program proposes some possible solutions: the implementation of training to improve the efficiency of production, processing, packaging and marketing to meet with international standards;

the support of beekeepers' associations at village, district and national levels (to manage collection centers and extension services); the advertisement of Tanzanian bee product in foreign markets; and the reduction and harmonization of administrative and tax barriers to production and marketing. At the community level, the main constraint identified by the National Beekeeping Program is that:

> *"Community groups and individuals need access to capital to participate in commercial beekeeping. They also need incentives to get involved in beekeeping, especially if it is not their traditional activity. Beekeepers need to develop knowledge and skills for planning their business and for the production, processing and marketing of a wider range of high quality bee products. Beekeepers need good facilities and equipment for transportation, harvesting, processing, packaging and storage of bee products"* (The Ministry of Natural Resources and Tourism, 2001, p.7).

To address the issues of market access, the Government created in 2008 the Tanzania Honey Council, whose objectives are the promotion and marketing of honey products, the facilitation of registration and certification of beekeeping areas, beekeeping and bee products, as well as the implementation of a traceability system (Match Maker Associates Ltd., 2007).

These statements clearly show that the aim of these new policies and institutions is to turn traditional beekeeping into a commercial activity, and that the other possible traditional uses of bee products are not involved in the beekeeping development strategy. Natural resources have to pay for their own conservation; they must generate revenues to compensate the costs associated. Indeed, what we can see in the field of CBNRM today is the promotion of *win-win* market-based solutions for livelihood support and natural resources conservation (Dressler and Roth, 2011). The commodification of nature includes the creation of markets for natural resources exchange and consumption, the privatization of resources within these markets, the commodification of resources to enable their trade, the withdrawal of direct government intervention from market transactions and the decentralization of resource governance to local authorities and non-state actors such as NGOs (Fletcher, 2010).

As already mentioned, the Government of Tanzania planned to implement beekeeping areas (Bee Reserves or Beekeeping Zones within Forest Reserves) to ensure the development of beekeeping activities and the involvement of local communities in natural resources management. However, tensions remain concerning Forest Reserves, where conflicts between beekeepers and trophy hunting companies frequently arise as these areas also have a status of Game Controlled Areas, where hunting companies receive preferential rights and powers, more than in Game Reserves (Hausser and Mpuya, 2004). This can be explained by the fact that the designation of a Game Reserve follows a hierarchical process implying the Parliament, while the designation of a Game Controlled Area is a unilateral decision of the Director of the MNRT-WD. When several activities are practiced on this type of zone, the *de facto* situation mentioned above favors trophy hunting companies and confirms their rights on resources acquired by preferential means, and then discourages beekeepers to claim their right, despite a favorable *de jure* situation (Hausser and Mpuya, 2004).

As mentioned above, the process of implementing a Beekeeping Zone on a Forest Reserve involves JFMAs between the local community and National or Local Authority Forest Reserves, who is either the MNRT-FBD in the case of National Forest Reserves, or District Councils in the case of Local Authority Forest Reserves. Other entities involved in these agreements can be private companies or local government. The content of JFMAs should include a management plan, which is agreed on by all natural resource users. This management plan should set out a description of the portion of Forest Reserve covered by the agreement (including ideally a botanical survey), a presentation of the group of beekeepers in charge of the management of the Beekeeping Zone, the management objectives in term of rural development and natural resources conservation, the by-laws applied to the Beekeeping Zone (the persons allowed to enter in it, the persons in charge of the surveillance, a

description of their powers and duties, the penalties for non-compliance with the by-laws), the redistribution scheme of the benefits derived from the Beekeeping Zone and the mechanisms implemented for dispute settlement (Hakikazi Catalyst, 2004). This process appears to be long and tedious for persons having only limited experience in the bureaucracy. One can ask whether this requirement is not part of a strategy of the central State to retain power over the forests and defer the complete decentralization of the beekeeping sector.

Moreover, property rights, together with the alienation rights attached to this land tenure type, are a crucial element of the *neoliberalization* of natural resources: they facilitate the integration of local communities in the global economy as investors, producers and consumers. However, poor communities without investment capacity may face fewer opportunities to benefit from these rights and therefore the only solution they have is to enter into joint ventures and potentially conclude unequal agreements with other actors regarding natural resources and land uses. Local environmental knowledge and initiatives are thereby devalued if they cannot be articulated with international demands (Igoe and Brockington, 2007). As Dressler and Roth put it (2011, p. 852): *"The things [communities] once produced for domestic reproduction have new property rights assigned as they are transformed into commodities for markets owned by others".*

The best example of this trend is illustrated by the development of ecotourism across the world. The promotion of ecotourism has contributed to a discourse in which activities proposed by this type of tourism equate with conservation of natural resources or traditional culture, as well as socioeconomic benefits generation. Ecotourism is often considered as the solution for achieving economic growth, local community prosperity and biodiversity conservation (Igoe and Brockington, 2007). However, it contributes to the production of a *fetishized* nature according to capitalist principles, where nature is considered as "*a provider of services to be consumed and enjoyed in situ*" (Neves, 2010).

The main impacts of this trend toward neoliberalization of natural resources is the marginalization of local communities, at risk of being deprived of rights related to natural resources as they are incorporated into the market (Fletcher, 2010). Moreover, commodification alters local meanings associated with natural resources as other types of values, such as social, cultural, spiritual or purely ecological values disappear.

Brockington and Schofield (2010) emphasize the role played by NGOs in the valuation of natural resources. Although their assumptions concern mainly major international NGOs[15], which do not concern this research work, some elements are worth mentioning. According to these two authors, NGOs, although considered as essential elements of good democracies, "*play a vital role in the creation of value from wildlife and nature, both in their work of protecting and reproducing wildlife and wild areas, and in creating the demand for the conservation's commodities and imagery overseas*" (p. 555). Thereby, these organizations create the discursive and material conditions to integrate capitalism in areas previously untouched by this economic ideology, and as such, they sustain its legitimacy, as they are "*tackling the ecological ills that capitalism produces, but capitalist economies emerge healthier but unchallenged*" (p. 555).

[15] commonly referred as BINGOs (Big International NGOs)

5. MLELE BEEKEEPING ZONE CASE STUDY, AN ACTORS' ANALYSIS

As illustrated in the previous part by the numerous activities taking place in Mlele Beekeeping Zone, multiple use zones involve various participants operating at different institutional levels whose role and institutional position are modified by the process. Collaborative management of multiple use zones depends on the quality of the cooperation amongst the participating actors. Collaboration is a process, which is the outcome of the CBNRM project. This chapter presents the institutional framework related to Mlele Beekeeping Zone management, its rules and hierarchical structures, the instrumental modalities related to natural resource uses, such as the mechanisms foreseen for resources and income allocation. Then I will present the complex set of actors involved in Mlele Beekeeping Zone management, power relations induced by this new model and then an analysis of the positions of the dominant actors within the global discourse on CBNRM.

5.1. Institutional framework

At the national level, the main actor involved in the JFMA is the MNRT-FBD[16]. The MNRT-FBD retains the responsibilities of policy formulation, sectoral planning, budgeting and human resources planning. The responsibilities of Beekeeping Zones implementation, management, monitoring and evaluation, as well as the enforcement of legislation, the provision of beekeeping extension services and revenue collection were first given to the Tanzania Forest Service Agency (operational since 2012) (Tanzania Forest Service, 2013) until the Beekeeping Division implements its own agency (Hausser, 2013, personal communication). In Mlele Beekeeping Zone, Tanzania Forest Service Agency remains in charge of monitoring contract compliance with other parties (in the case of joint-venture development with a tourism or trophy hunting company, as proposed by the JFMA's model) (Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division, 2011).

At the national level, the MNRT-WD is also involved in the management of the Mlele Beekeeping Zone as it leases hunting blocks in Mlele North Game Controlled Area where the Mlele Beekeeping Zone is located. The MNRT-WD is in charge of wildlife management on the various protected areas dedicated to wildlife conservation (Game Reserves, Game Controlled Areas and Wildlife Management Areas). As most Game Controlled Areas overlap with Forest Reserves, MNRT-WD has decision-making power over a large part of the forest area in the region. The Division is responsible for the management of the trophy hunting industry, *i.e.* the allocation of hunting blocks and quotas, wildlife surveys, and the collection and distribution of revenues from block allocation and hunting taxes (The Wildlife Policy of Tanzania, 1998). The hunting industry in Tanzania went through a period of reform from 2010 to 2013, when changes in the granting of hunting blocks were implemented. This should have allowed transparent allocation and resolve some of the issues faced by the sector (corruption, circumvention of policies, etc.) (Nshala, 1999). Nevertheless, it seems that granting hunting blocks is still done in a rather opaque way (ADAP, 2013, personal communication).

Wild Footprints Ltd. is leasing a hunting block in Mlele North Game Controlled Area and subleases it to TBGS. TBGS was the company that leased this block before the reforms of hunting block allocation. They are the only identifiable representatives of the private sector in the area[17]. Both having their headquarters in urban centers (Dar es Salaam and Arusha, respectively), they are well connected with international hunting societies and with the MNRT-WD. As in the past, the trophy companies have to maintain close relationships with the latter to ensure the renewal of their concessions.

[16] The Forestry and Beekeeping Division started to separate into two distinct entities in 2010: the process is ongoing (Hausser, 2013, personnal communication). In order to facilitate comprehension and to avoid making the framework more complex, the Forestry and Beekeeping Division will be kept as the State's institution responsible for the beekeeping sector.

[17] As wood exploitation is practiced mainly illegally (ADAP, 2013, personal communication)

The MNRT-FBD delegates its authority on technical aspects to the local government at the district level, the Mlele District Council. Through its District Natural Resources Office (DNRO), its role is to administer and manage forest and beekeeping resources (bees, bee fodders, personnel and materials) (The National Beekeeping Policy, 1998). The DNRO is organized in sectoral departments, represented by an officer in charge of each sector (Forest Officer, Beekeeping Officer and Wildlife Officer) (Tembo, 2003). In the field of beekeeping, district officers coordinate beekeeping extension services, enforce law, promote modern beekeeping techniques, and participate in the joint management of the Beekeeping Zone (The National Beekeeping Policy, 1998). In the field of wildlife management, officers are in charge of anti-poaching patrols on every type of protected areas in the district.

At the local level, Mlele Beekeeping Zone management is integrated into decentralized administrative structures.
Village Councils represent the Village Assemblies[18] of the twelve villages of Mlele District. Elected, they are the legitimate entities to represent local needs; as such, they are concerned and have a role of control over Mlele Beekeeping Zone management, the implementation of bylaws and the distribution of benefits of natural resources management, especially through their Village Environmental Committees.

IBA, an association emanating from the civil society, counts about 300 beekeepers organized in groups. IBA is constituted of several committees composed of elected members, responsible for specific tasks (a central committee composed of a representative from each of the 12 villages, a management committee composed of a manager and an accountant (currently vacant), an environmental committee and an education committee) (Reinhard, 2013, personal communication). As stipulated in the Memorandum of Understanding signed in 2011 between the MNRT-FBD and IBA, the latter is the community-based organization in charge of the management of Mlele Beekeeping Zone and of every issue related to natural resources within the specific area. It has as main tasks to

> *"abolish unregulated exploitation of forest biodiversity especially the rare, irreplaceable species of plants and those threatened by overexploitation especially those of beekeeping, ecological and economical value; protect, conserve and develop the forest bio-genetic resources; [...] ensure sustainable existence of honeybees by maintaining and effectively applying appropriate beekeeping techniques and methods; cooperate with FBD in the management and sustainable utilization of genetic resources; [...] make this zone a source of bee breeding materials, source of package colonies [...], enhance conservation of biodiversity of honeybees and production of bee products"* (Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division, 2011, p. 3)

IBA should submit two progress reports per year to the MNRT-FBD (Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division, 2011). IBA progressively positioned itself as the only organized village association able to play an active role in natural resources management in the division, which could raise issues of overlapping of responsibilities with public sector agencies. IBA benefits from the support of ADAP, especially regarding training in the field of modern beekeeping techniques and mediation between the local communities, the State and private companies in the implementation of the Mlele Beekeeping Zone and the reconciliation of diverging interests in natural resources management. However, IBA faced recurring issues of mismanagement and misappropriation of funds in the past, which did not foster trust amongst the local communities (ADAP, 2013, personal communication).

[18] all adult persons ordinary resident in the village (United Republic of Tanzania, 2005b)

Savary (2013, personal communication) raises the fact that traditional structures are entangled in this framework. There is a fusion between the temporal and spiritual authority, authorities are also shamanistic authorities, which have an important influence at the local level.

ADAP is a Swiss-based international NGO based in Geneva since 1997. The association supports local initiatives of community-based natural resources management in sub-Saharan Africa, especially in Burkina Faso and Tanzania. It acts as a mediator between community, state and private companies in the implementation of sustainable development strategies and the reconciliation of diverging interests in natural resources management. It collaborates with various partners, and participates in coordinated actions at the operational level, but also develops research and education partnerships at local, national and international levels in order to propose innovating solutions for resolving field-related issues (ADAP, date unknown). It is funded by the Federation Genevoise de Coopération since 2001, an organization in charge of channeling the federal funds from the Swiss Agency for Development and Cooperation, which is the main donor of the association, as well as from the State and the City of Geneva and some other municipalities. Funds also come from membership fees and from events organized in Switzerland by the association (Association for the Development of Protected Areas, date unknown).

In Geneva, ADAP is currently composed of a permanent staff of three persons (all volunteers). Some members offer punctual support according to the needs of the program (this can be in the field of communication, fundraising, but also at the operational level for trainings in the field, for example). Permanent staff comes from various backgrounds, from politics, development studies, economy and geography. Punctual staff generally comes from the environmental sciences or Geographical Information Systems sector. For the implementation of its projects in Burkina Faso and Tanzania, ADAP is represented by local teams composed of national personnel and technical or administrative public officers assigned to the projects (Association for the Development of Protected Areas, date unknown).

The team in Mlele is composed of a Project Supervisor, a Land Use Officer, a Tourism Officer and Driver and an Accountant, recruited in Dar es Salaam, and a Community Development Officer, posted on the project by the DNRO. ADAP's support consists of a technical and financial support to IBA. A major part of the program's budget was used to finance activities related to the strengthening of local capacities, by technical training to improve the performances of local bee product production or by providing support to organizational development by trainings related to financial and organizational management (Association for the Development of Protected Areas, date unknown).

ADAP trained the VGSs, a team of thirty persons in charge of anti-poaching patrols in the Beekeeping Zone, under the supervision of IBA and ADAP. They regularly patrol Mlele Beekeeping Zone, in collaboration with the district wildlife officer, empowered to carry a weapon.

Finally, IEA is an association in charge of the development of ecotourism in Mlele. Heavily supported by ADAP for the moment, the association is supposed to shoulder the responsibilities of the organization and management of ecotourism trips in the future. It counted 343 members in 2012, organized in 25 groups according to the activities they propose to tourists. Despite the impressive number of participants, the association is still in its infancy, as it lacks a manager to coordinate the activities and a common vision on what is ecotourism, some of them very unaware of what ecotourism is (Association for the Development of Protected Areas, 2012b). In addition, it still lacks skills and financial capacities to manage the trips without support from ADAP.

Importantly, the legal framework concerning beekeeping is passing through a series of reforms, especially regarding the Beekeeping Zones, as previous policies did not provide clear guidelines concerning this type of protected areas (they concentrated on Bee Reserves). There was a regulatory

vacuum, and beekeeping advocates had to build on other sectoral policies (as illustrated by the use of JFMA's model). This is what hindered the emergence of other Beekeeping Zone initiatives in the country (Reinhard, 2013, personal communication), although the first legal framework related to beekeeping is more than 10 years old.

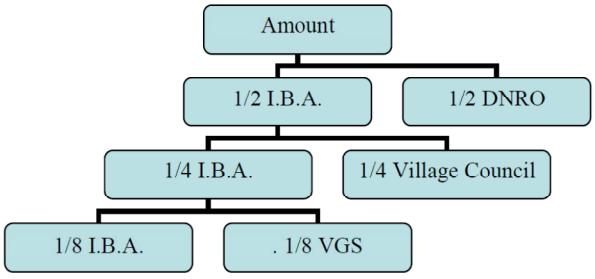
5.2. Mechanisms of resource allocation

Activities allowed and prohibited, as well as modalities of access to the Beekeping Zone, are defined in the management plan proposed by IBA in 2006, which has been approved by the MNRT-FBD in 2011. The final version of the management plan is in Kiswahili and therefore not easily accessible to me. But the main elements figure in Weber (2006) and Varet (2006). Allowed activities are *modern* beekeeping[19], trophy hunting, ecotourism, collection of food, collection of medicinal plants, cultural activities (traditional worship) and research. Activities prohibited are pole and sand collection (apart from the material needed for the construction of beekeeper and tourist camps), mining, debarking and logging trees, fisheries, poaching, permanent settlement and beekeeping without beehives. Users have to buy a permit, delivered by IBA, to enter the beekeeping Zone.

Revenue allocation is defined in the bylaws related to the management plan, elaborated by IBA with the support of ADAP in 2006, which have not been approved yet. The MNRT-FBD is now elaborating a new version of these bylaws. However, this new version, though well conceived, is complicated and inapplicable at the village level (Reinhard, 2013, personal communication). It has to be adapted to be understandable by all actors. Thus, the bylaws are not enforced for now. As provided for in the Beekeeping Act (2002), these bylaws, once approved by the MNRT-FBD, have to be signed by IBA, the District Council and the Village Councils (Reinhard, 2013, personal communication). Revenues come from members' contributions, which enter into the ongoing payroll accounting of IBA, to ensure its daily activities (Reinhard, 2013, personal communication). Other sources of income are Mlele Beekeeping Zone's revenues: the fines and material confiscated from the illegal use of resources (wood, meat, weapons, etc.) by the VGSs. However, as the bylaws are not enforced, IBA does not yet have a legal status enabling it to collect and use these revenues. Revenues and material are therefore stored until the bylaws enter into force.

However, if the planned mechanisms are approved (which are based on the Joint Forest Management Agreement model), IBA or the Village Environmental Committees should deliver access permits and collect the revenues derived from the Beekeeping Zone management and allocate a half to the DNRO. The other half would thus be allocated between IBA, the Village Councils and the VGSs, as illustrated in the figure 10.

Figure 10: Allocation of benefits derived from the Beekeeping Zone management
(source: Weber, 2006)



ADAP is skeptical about the management skills of the Village Environmental Committees, highlights the risk of corruption related to past practices of Village Councils, and therefore promotes IBA as the manager of these revenues. This option still has to be negotiated and approved by the Village Councils, but it has good chances to be promoted by the MNRT-FBD also (ADAP, 2013, personal communication).

[19] Modern beekeeping refers in this thesis to techniques imported from Western countries, such as the use of box hives, protectives clothings, smokers and honey processing techniques.

Revenues from trophy hunting must be distinguished from the other revenues as the Memorandum of Understanding was signed between the MNRT-FBD and IBA only. This Division is not enabled to deal with wildlife issues (Reinhard, 2013, personal communication). In the field of ecotourism, each tourist has to pay 400 US$ (this amount was fixed by ADAP), which contributes to a *community development fund*, managed by a committee created for this purpose. This committee is composed of four Ward Executive Officers, two community representatives and a representative from ADAP. This fund is to finance public projects in the fields of health, education and natural resources valorization. In view of these elements, several issues can be highlighted.

First, formal management rights over Mlele Beekeeping Zone were transferred to IBA. The decentralization process is therefore ongoing. IBA can now generate important revenues from the Beekeeping Zone[20], and with the new distribution scheme, IBA or the Village Environmental Committees could be in charge of revenue collection, and allocation of these funds to the district and the villages. Revenues are therefore more likely to accrue at the local level, compared to the former system, when the district and the central State kept the totality of the revenues derived from natural resources use on the Forest Reserves. Nevertheless, the process remains partial, as to date, IBA or the Village Environmental Committees do not dispose of discretionary power, Mlele Beekeeping Zone remaining the property of the State, and are not able to collect the revenues necessary for its proper management[21]. This indicates that other actors' interests hinder the complete devolution of rights and responsibilities to the local communities.

Second, IBA will become the association in charge of all issues concerning Mlele beekeeping Zone. This focus on a specific group of interest presents a constraint to participation and hinders proper social control. This model exacerbates the differentiation between participants as it contributes to concentrate responsibilities, land and revenues on one specific interest group, increasing the risk of capture of the project and benefits related, to the detriment of other participants. This is illustrated by the bylaws, partly conceived and which have to be signed by IBA and the Village Councils. They indicate that only beekeepers using modern beekeeping techniques, whose products are mainly intended for commercialization, are allowed to practice in the Beekeeping Zone (Inyonga Beekeepers Association, 2013). Most of beekeepers could benefit from training provided by ADAP regarding modern beekeeping techniques, but few have the required capital to use these techniques. This zone is therefore accessible to relatively well off beekeepers, having connections with the market. This contributes to differentiate natural resources users according to status and economic capacity in the appropriation of resources.

More generally, these elements raise the question of the sustainability of the model of multiple-use zone. As it is difficult for the moment to generate revenues other than those of permits and beekeepers' contributions, these revenues remain low. Under these circumstances, it appears to be difficult to cover the costs of management. Moreover, it has been observed that the turnover imposed by the statutes of IBA hinders to keep the administrative skills within the association (ADAP, 2013, personal communication). The project will thus face management issues. In addition, as the amount dedicated to the Village Councils has to be divided between the 12 villages, the benefits from natural resources management could be insignificant at community level. This questions the community conservation paradigm, which relies on the assumption that conservation can significantly contribute to poverty alleviation. Consequently, there is a need to explore the objectives and interests pursued by actors and the system of differentiation, which leads the appropriation of responsibilities and resources by certain groups.

[20] IBA generated 1'200'000 Tsh (718 US$) from January to May 2013 (Reinhard, 2013, personal communication).

[21] As mentioned by Reinhard (2013, personal communication), IBA's legal status is not ensured yet, therefore revenues from anti-poaching activities cannot be used for the moment.

5.3. Identification of major actors

Participative processes change power relations linking participants, and their respective interests and functions. An actors' analysis therefore becomes relevant in order to identify their objectives, interests, beliefs and discourses, as well as alliances or resistances to collaborate. A list of all actors was drawn up, which exposes their respective objectives, functions, interests and practices related to the management of natural resources in Mlele (table 9).

Table 9: Actor's list

Actor	Objectives	Functions	Interests	Practices
MNRT-FBD	Sustainable management of beekeeping resources. Socioeconomic development of the country.	Political control of the forestry and beekeeping sector. Make staff available at local level.	Effective decentralization. Functional Beekeeping Zone. Conflict resolution. Being recognized within the MNRT.	Technical ministry, trying to implement a decentralization process with limited resources.
MNRT-WD	Sustainable management of wildlife resources. Socioeconomic development of the country. Profitability of the wildlife industry.	Political control of the wildlife sector. Make staff available at local level.	Retention of decision-making power over forest areas.	Opacity. Questionable interpretation of wildlife policies for the enrichment of elites.
District Council	Local administration. Sustainable management of natural resources.	(State decentralized services). Apply MNRT sectoral objectives. Manage Forest Reserves, Beekeeping Zones and Game Controlled Areas. Conflict resolution at local level.	Implication in the management of the Beekeeping Zone to obtain revenues and improve its image.	Limited efficiency due to a lack of resources and decision-making power.
Village Councils	Local administration.	(State decentralized services). Apply MNRT sectoral objectives. Manage Forest Reserves, Beekeeping Zones and Game Controlled Areas. Conflict resolution at local level.	Retention of decision-making power. Local socioeconomic development Implication in the management of the Beekeeping Zone to obtain revenues and improve its image.	Limited efficiency due to a lack of resources and decision-making power.
IBA	Beekeeping sector development. Socioeconomic development of the association's members.	Environmental awareness rising. Trainings. Beekeeping development. Natural resources management within the Beekeeping Zone.	Generate revenue. Working with ADAP to benefit from beekeeping material, micro-credit and access over the Beekeeping Zone.	Competent association recognized at national level for its beekeeping skills.

Actor	Objectives	Functions	Interests	Practices
ADAP	Sustainable management of natural resources. Socioeconomic development of the local communities.	Capacity-building for local organizations.	Natural resource conservation by local communities. Rural development.	Competent team. Diversified profiles. Diversified partners.
Wild Footprints Ltd. / TBGS	Profitability. Provide clients with a pristine environment ("wilderness").	Trophy hunting tourism development.	Retention of decision-making power over hunting blocks. Keeping a privileged relationship with the MNRT-WD.	Absence of collaboration with IBA for the management of the Beekeeping Zone. Conflicts with beekeepers
VGSs	Sustainable management of natural resources. Secure a job.	Law enforcement in the Beekeeping Zone.	Be recognized as skilled game scouts to secure a lasting job.	Competent team, recognized at the local level.
Gatherers	Access and use rights over natural resources in the Beekeeping Zone.	Often sorcerers and traditional chiefs, important cultural and political role at local level.	Be able to use the natural resources and places of worship at any time.	Exclusion (voluntary or not?) from participative management processes.
IEA	Ecotourism development. Employment and income generation.	Ecotourism activities coordination. Reception and support of tourists.	Provide quality services to enter into joint-ventures with tourism companies. Generate revenue.	Low organization, lack of skills.
Burundian refugees	According to most stakeholders: obtain bush meat for export.	("Scapegoat", perhaps with some justification) Misidentified group, accused by actors to be responsible for poaching.	Consume and commercialize bush meat.	Commercial hunting heavily armed inspiring fear amongst local stakeholders.

Major actors are first identified according to their authority in decision-making power over Mlele Beekeeping Zone, based on the system of differentiation (mostly legal differences, related to actors' status but also to their privileges). Authority was thus defined according to formal rights granted to the various participants, such as the power to set objectives and norms regarding the beekeeping Zone management, to allocate resources, to structure participation in the decision-making process, to control access to knowledge and channel knowledge and information, and to be able to recognize and sanction other participants (Deutsche Gesellschaft für Technische Zusammenarbeit, 2007).

I also asked ADAP's staff which actor can make a legitimate use of power in the management of Mlele Beekeeping Zone, in order to highlight the influence of the association in the promotion of a managing organization. ADAP's members describe authority based on legal aspects (as they are dealing with the implementation of objectives contained in the Beekeeping Policy, beekeepers have a legitimate power; as Mlele Beekeeping Zone is located on a Government Forest Reserve gazetted in 1954 or 1955, the Government has a legitimate power), on historical presence on the territory (the Konongos, who are the first inhabitants of the area), on customary uses (the gatherers and the Sukumas represented by the Village Councils), on the ability to generate important revenues at local level (the trophy hunting company, for example). Based on the descriptive elements raised above and on the perception of ADAP, it is possible to define aspects of authority for various actors, keeping in mind that important aspects related to local perceptions of legitimacy will be lacking in the analysis.

From a formal perspective, the MNRT-FBD retains the ultimate decision-making power. It is responsible for the ultimate decisions regarding Mlele Beekeeping Zone management, as it is the owner of land and resources. The Division has to approve who participates in the management of the resources (through the management plan); it is in charge of informing the citizens about the opportunities given by the legislation and ensuring that information is shared between all actors; it can terminate the agreement with IBA if it is not satisfied with the management. Nevertheless, it has little contact with the local context. As Hausser mentioned (2013, personal communication), public officers come to Mlele district once or twice a year, to deal with issues concerning the management plan or the bylaws, or issues related to reporting. This hinders local initiative, the local communities facing many difficulties in the development of any project related to protected areas, as they have to negotiate with government officers and to conform to bureaucratic processes.
Besides, Game Controlled Areas have a lower status than Forest Reserves, therefore each decision or action are supposed to be subject of approval and control from the MNRT-FBD. Although the MNRT-WD manages hunting blocks in this area, its only role should be confined to wildlife management and an information role through the anti-poaching patrols conducted by the district game officers on the hunting blocks.

The District Council has a medium degree of authority. It does not have the ability to set objectives and structure participation as they are officers posted in the district by the government to apply objectives decided at the national level. Moreover, as posted officers, they do not have any historical links with the concerned area and were considered as oppressive until recently (ADAP, 2013, personal communication). Consequently, they did not have the confidence of the villagers. Their only role is to act as a link between the MNRT-FBD and IBA in the management of the Beekeeping Zone, and facilitate the collaboration between participants.

The important point is the low level of authority of the Village Councils in the decision-making process regarding the management of the Beekeeping Zone compared to IBA. The Memorandum of Understanding signed between the MNRT-FBD and IBA poses IBA as the main contact concerning natural resources management, the organization in charge of collecting revenues if the proposed redistribution mechanism is implemented (Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division, 2011). Although IBA should have a considerable influence, the transfer of rights is recent, IBA has an institutional legitimacy, but this legitimacy is not anchored in every actor’s mind yet. This could be explained by the fact that IBA does not comply with social norms (this will be detailed in the next chapter). Moreover, the lack of financial resources and capacities of IBA to respond to the objectives assigned, as well as the past misappropriations lead to a lack of awareness about IBA's role, and an increasing distrust amongst villagers (ADAP, 2013, personal communication). In this case, it is difficult to conceive that Village Councils, democratically elected (and the other participants) could accept this transfer of responsibilities to IBA.

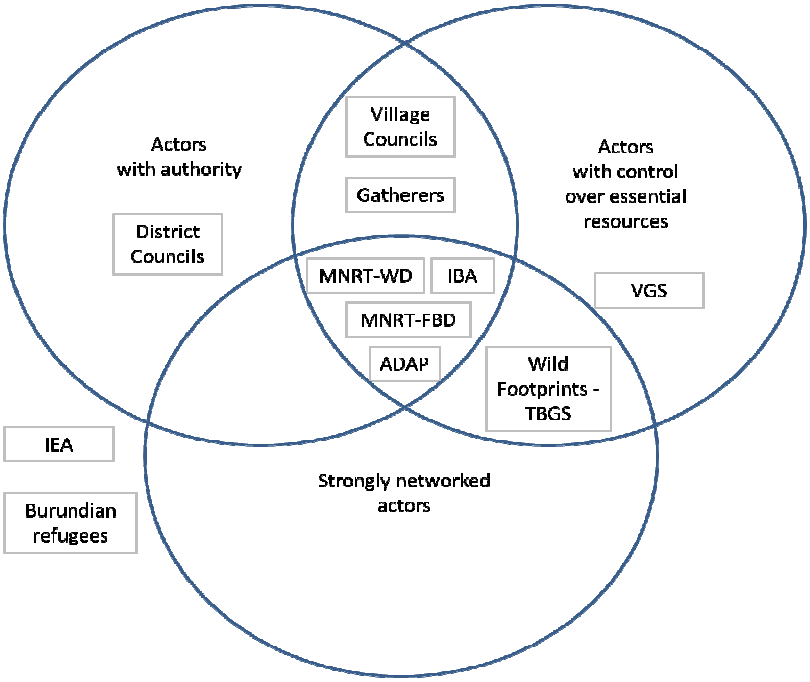
Nevertheless, the Village Councils are weak entities, they are elected once every five years (Brockigton, 2008), therefore changing regularly, and most of the counselors are illiterate (ADAP, 2013, personal communication). This also happens with the Mlele District Council, which is particularly weak for the moment as it has been created only one year ago. As mentioned by Brockington (2008) and ADAP (2013, personal communication), despite the fact that multi-party democracy was introduced in 1992 in Tanzania, decision-making at local level is still dominated by the ruling party, the CCM (*Chama Cha Mapinduzi - The Party of the Revolution*, created by Julius Nyerere in 1977), characterized by "*extraction of taxation, misappropriation and misallocation of funds, and the corruption and failure of accountability*" (Brockington, 2008, p. 112). As a result, the local communities have always considered State's institutions as oppressive powers, they have a long-lasting distrust and a submissive attitude toward the State's authority (ADAP, 2013, personal communication). In this case, democratic decentralization seems unlikely to occur, but when considering the democratic legitimacy, the Village Councils are the entities having the legitimacy to manage Mlele Beekeeping Zone. Nevertheless, IBA is provided today with more power than these two entities, as the allocation of benefits could rely on the association; more funds, as it is supported by an international donor; and competent staff. Local government could therefore become the beneficiaries of a community-based organization if IBA is granted the rights of revenue allocation. This situation can contribute to increase competition and rivalry between the public sector and IBA, as the association has the potential to undermine the powers and legitimacy of the Village Councils.

ADAP's role is ambivalent. From a formal point of view, ADAP has no authority in the decision-making process, as it only has a role of support. Nevertheless, as it is the NGO, which initiated the Beekeeping Zone's project, it is strongly implicated in the definition of objectives, it contributed to structure the participation by inviting actors to various workshops and is the main actor ensuring the sharing of information and knowledge amongst the participants.

What can be added is that claims over land and resources within Mlele Beekeeping Zone are based on different perceptions of land tenure. Local communities draw their claims regarding land rights upon legitimacy criteria linked to customary rights (Hausser *et al*., 2009), such as a historical presence in the area and customary uses, while the trophy hunting company draws its arguments upon legitimacy criteria based on legal rights, confirmed by the contracts of hunting block allocation concluded with the MNRT-WD. This is confirmed by Varet (2006): IBA and IEA planned in 2006 to bring tourists into Mlele Beekeeping Zone, by informing the tourist hunting company in advance, so that they could spatially avoid being together at the same time. The trophy hunting company refused to reach an agreement, invoking that the leasing of the hunting block gave it exclusive rights regarding tourism, and that it was forbidden by the Wildlife Act (1974) and its amendment of 2000 to conduct any competitive activity on this block. The trophy hunting company (already TBGS at that time) even threatened IBA and ADAP with litigations (ADAP, 2013, personal communication). This reflects the neoliberal heritage adopted by the government, which aimed at the individual appropriation of land and its privatization as a solution to better manage the natural resources. The wildlife sector had largely benefitted from this approach in the past, and was reluctant to get involved in the decentralization process initiated by other sectors. However, keeping in mind that the Forest Reserve status is higher than the Game Controlled Area, Wild Footprints Ltd. has little legitimacy to claim the exclusive use of the area.

Apart from their authority, major actors are identified according to their available resources and their connections with other actors (Deutsche Gesellschaft für Technische Zusammenarbeit, 2007). This identification contributes to concentrate the analysis on potentially powerful actors, in order to identify crucial issues and formulate relevant recommendations. Major actors, who combine authority, control over knowledge and resources and/or connection with other actors are shown in the figure 11.

Figure 11: Major actors
(source: Deutsche Gesellschaft für Technische Zusammenarbeit, 2007, modified)



Authority: legal status ascribed or acquired rights (legal or customary).
Resources: Recognized knowledge, expertise and competence, as well as material resources, which allow the actor to influence the management of the Beekeeping Zone.
Connections: The number and quality of relationships to other actors.

The gatherers are not a well-identified group. Some of them specialize in gathering, but most of them are members of local communities, who gather wild plants in case of food insecurity. Thus, some of them are endowed with specific ecological and ethnobotanical knowledge, which can be crucial to ensure a sustainable management of the resources; therefore they have control over specific knowledge. The others are representative of the local communities; as such, they have a strong legitimacy in the framework of bottom-up development initiatives.

IEA, although it is a recognized NGO (by the Tanzania National NGOs Coordination of the Ministry of Community Development, Gender and Children and the MNRT-FBD) fails to meet ADAP's requirements regarding tourism management. ADAP and IBA are still responsible for the organization of ecotourism trips and retain the decision-making power over IEA's decisions, until the NGO has the capacities to manage this sector alone. IEA will be included when talking about IBA.

The VGSs' group is now a competent group, reasonably well organized, and which is gaining legitimacy as it is integrated in the anti-poaching activities at the district level. It also has a good knowledge of the ecological conditions of Mlele Beekeeping Zone, as they are the one who are the most frequently present within the area. Nevertheless, as they are employed by IBA (their salaries are currently paid by ADAP, but in the future anti-poaching activities will be managed by IBA), they will be included when talking about IBA.
The trophy hunting companies, although they have little authority over the management of the Beekeeping Zone, are holders of significant ecological knowledge and material resources. Moreover, they are strongly networked with the global hunting industry.

Finally, the Burundian refugees, who are present in the study area but are not part of the project, will not be included in the further analysis, as they do not claim any rights on the resources or land and have not been involved in any part of the CBNRM initiative for now. However, they are considered as a constraint to the sustainable use of natural resources, as they are accused of being the most involved in poaching.

5.4. Actors' interests and beliefs

Before exploring the underlying mechanisms, which change power relations between actors, it is necessary to present the interests and beliefs regarding the various issues of CBNRM, which drive the actors to participate in the Beekeeping Zone management or to block the process. These interests are summarized below in the table 10.

Table 10: Issues associated with the community management of natural resources
(inspired from Fino and Rossier, 2012)

Actors / Issues	Appropriation and control over forest areas	Local communities participation in forest resource management	New allocation of responsibilities between central and local governments (coordination, control, law enforcement) and local communities (management, allocation of revenues)
MNRT-FBD	++	++	++
MNRT-WD	++	0	-
Village Councils	+	+	++
IBA	0	0	++
ADAP	0	++	++
Gatherers	0 (+?)	0	0 (+?)
Wild Footprints Ltd. / TBGS	++	-	-

++ very interested + interested 0 uninterested - hostile or opposed

This table illustrates the potential conflicts between the actors' interests and claims. Indeed, the implementation of a multiple-use zone is an opportunity for the actors to claim natural resources access, use and ownership rights. However, these claims do not target the same interests.

On the side of the central State, the two divisions of the MNRT have diverging interests. The MNRT-FBD already "owns" Mlele Beekeeping Zone, as it is located in a Forest Reserve, under its jurisdiction. However, as it was mentioned earlier, this division has always been marginalized in the political processes determining socioeconomic development, and still struggles to break through the economic landscape of the country. Moreover, this division lacks financial and human resources to manage the forest and beekeeping sector and develop income-generating activities (ADAP, 2013, personal communication). The implementation of Mlele Beekeeping Zone, although the products are serving for the moment only local or national markets and do not present a high added value, is a means to show that beekeeping and ecotourism in forest areas can compete with the trophy hunting industry. The CBNRM project based on beekeeping is an opportunity for the MNRT-FBD to reaffirm its control over the area, which is illustrated by a comment made at the beginning of the gazetting process by the Director of Forestry of the MNRT-FBD. He affirmed the fact that the MNRT-FBD would "*strongly support any solution that keeps its prerogative on the area*" (Association for the Development of Protected Areas, 2004b, p. 3). As mentioned by ADAP (2013, personal communication), the MNRT-FBD was more willing to find an application of the new policies than any other actor was. As this Division was totally marginalized within the Ministry, the proposition of ADAP to implement an area dedicated to beekeeping was an opportunity to assert its existence. The MNRT-FBD is therefore enthusiastic about the CBNRM project, as it opens the arena to international organizations well endowed with financial resources and able to support its claims.

On the other side, the MNRT-WD does not have this problem of financial capacity, but as trophy hunting generates important revenue for the country, the control over this area is thereby primordial. Consequently, the opening of the sector to local communities does not present any advantage, as the most likely outcome for this division is a loss of decision-making power over its hunting blocks, and the decline of its revenues. Wild Footprints Ltd. faces the same issue. This reconfiguration of roles implies that the trophy hunting company has to renegotiate its presence in Mlele Beekeeping Zone with IBA, an unknown actor for the company. Outcomes are therefore uncertain, which do not foster its implication in the participative process.

The MNRT decentralized services at the level of the district are favorable to the opening of natural resources management to local communities, as it can gain new responsibilities of coordination and receive in a way more staff that is competent. Indeed, local communities, particularly the VGS, are trained by conservation professionals in wildlife management and dispose of high-quality equipment such as camera traps and GPS provided by ADAP and some of its Swiss partners (ADAP, 2013, personal communication). Nevertheless, this new configuration of roles and responsibilities implies that revenue allocation will no longer be under its heading. The District Council will then lose one important prerogative.

The Village Councils could be favorable to the opening of natural resources management to local communities, but in a contrasted way. This devolution of responsibilities and rights contributes to bring the decentralization process further (as it was previously stopped at the level of the district, since the revenues from natural resources management were rarely allocated at the village level), which could be beneficial from an economic point of view. Nevertheless, this potential decentralization of rights and responsibilities toward IBA, a civil society organization, contributes to reduce their authority over potentially strategic resources.

Unable to interview IBA members, it is impossible to know their interests at the beginning of the project. ADAP's assessments on this subject differ. On the one hand, some ADAP's members expose that IBA's interests were to have an area where beekeepers could practice beekeeping safely, and eventually to have the possibility to limit other users' utilizations of the resources, which they consider theirs (ADAP, 2013, personal communication). As ADAP (2013, personal communication, author's translation) raises it, "*no human or material resources were allocated to the Forest Reserves / Game Controlled Areas, hunters were operating with complete impunity, and no one was appointed to monitor the implementation of the trophy hunting companies' commitments*". This was the source of recurrent conflicts, as the trophy hunting companies were combating poachers, but the poachers were the villagers. "*The basic situation is thus a situation of conflicts between diverging groups and interests on an area where the State is absent*" (ADAP, 2013, personal communication, author's translation). On the other hand, some other ADAP's members identified security of tenure as the initial claim of beekeepers, based on a strong narrative of loss (of land, of resources' access) (ADAP, 2013, personal communication). However, ADAP's members agree to point out that even today, the beekeepers association does not have any environmental objective. It has objectives regarding honey production, tourism development and trade of wood collected by the VGS (ADAP, 2013, personal communication). The VGSs and IEA members want to obtain long-lasting jobs.

ADAP is in favor of the devolution of rights and responsibilities over Mlele Beekeeping Zone. This will be detailed in the next chapter, but it is important, for a greater understanding of the following findings, to highlight the vision of the association:

> *"Conservation with communities - Supporting livelihoods, saving ecosystems and species [...] ADAP promotes a community approach in the management and the conservation of the protected areas, fauna and flora. Its goal is to help the local communities to make natural resources a factor of*

development through the ecosystems conservation" (Association for the Development of Protected Areas, date unknown).

The vision clearly indicates that ADAP is today mainly a conservation NGO. The goals which follow are ambivalent, the statement indicates on one hand that conservation is the main goal of the association, the involvement of local communities being considered a means to facilitate this conservation, and on the other hand, conservation is the means to reach development for local communities. This ambivalence will be explored further later in this chapter.

The interests of gatherers are more difficult to identify without intensive field research in the region. On the one hand, they might be moderately interested (or even hostile). The reconfiguration of the management structure implies that they have to conform to new bylaws, which they do not necessarily understand as they did not participate in their elaboration, and which do not bring them any advantage. On the other hand, they could be very interested and would like to be included in the management structure, but their interests are not heard as they may belong to particularly vulnerable groups unable to claim their needs and rights. As ADAP mentioned (2013, personal communication, author's translation), "*there are probably some groups, who feel excluded, particularly the Sukumas and some marginalized Konongo households. They are provided with little influence within the community, and are even less able to discuss with external institutions*".

To conclude, what table 12 indicates is the coalition of interests between the MNRT-FBD and ADAP in terms of local communities' participation in natural resources management and sharing of responsibilities between central and local government and local communities. The MNRT-FBD did not have as primary interest the devolution of responsibilities regarding natural resources management to local communities: its main aim was to obtain an institutional recognition by proving that the Beekeeping Zone model could compete with Wildlife Management Areas in terms of revenue generation at the local level. Unlike a member of ADAP (2013, personal communication), who thinks that ADAP made an alliance with the MNRT-FBD because they both shared the same vision, these elements indicate that for the MNRT-FBD, sustaining the discourse related to CBNRM was a strategy. Indeed, the direct confrontation with the MNRT-WD was impossible, as raised by ADAP (2013, personal communication, author's translation), "*the former Director of Forestry and Beekeeping Division was afraid of dying if he opposed to the Wildlife Division and had to find strategies to cope with this situation*". Consequently, adopting the discourse of community participation allowed the institution to interest an international NGOs and to gain the support from ADAP in its struggle against the MNRT-WD.

This draws attention to the concept of *epistemic communities*. As mentioned in the theoretical framework, an *epistemic community* is a group of persons with recognized expertise, sharing beliefs and a consensual knowledge, as well as common interests.
What we can observe is that the MNRT-FBD and ADAP, provided with recognized expertise and competences, also share some beliefs and a consensual knowledge apart from common interests.
First, they both share causal beliefs related to the degradation and marginalization theory developed by Robbins (2004). In the National Beekeeping Policy (1998), one can read: "*There is a clear cause - and-effect relationship between poverty and environmental degradation: environmental degradation leads to widespread poverty and poverty is a habitual cause of environmental degradation*" (p. 4). ADAP shares this causal explanation: "*Our approach contributes to the protection of many ecosystems which are suffering increasingly pressures, mainly because of the population growth and growing poverty*" (ADAP, date unknown). Besides, ownership or use rights are supposed to lead to a rational utilization of natural resources:

"The ownership of land and natural resources (including Bee Reserves and Apiaries), access to and the right to use them are of fundamental importance, not only for more balanced and equitable

development, but also to the level of care accorded to the environment" (The National Beekeeping Policy, 1998, p. 4).

ADAP also promotes this approach through the implementation of a Beekeeping Zone and the participatory land use management project. They also share the consensual knowledge that the involvement of local people in natural resources management would guarantee a sustainable rural development: "*Some tribes set aside trees and forest lands for traditional functions such as beekeeping, worshiping, collecting water, collection of medicines, etc. Experience has shown that such community based conservation (CBC) is effective and sustainable*" (The National Beekeeping Policy, 1998, p. 19).

As already noted, in the 1990' NORAD strongly supported the development and implementation of policies related to natural resources in the country. The assessments, which figure in the National Beekeeping Policy (1998), thus reflect NORAD statements, goals and objectives. NORAD goal for Tanzania concerning the management of natural resources (for a program, which took place in the country from 1994 to 2006) was "*Natural resources contributed on sustainable basis towards reduced income poverty, vulnerability amongst the poorest groups and improved quality of life and social well-being in Tanzania*" (Norwegian Agency for Development Cooperation, 2006, p. 3). NORAD was also in favor of "*community ownership and management*" (Norwegian Agency for Development Cooperation, 2006, p. 4).

NORAD was thus the first advocate, and the most influential proponent of this *episteme* in the country. Interestingly, one can note that the MNRT-FBD joined this *epistemic community* without really believing in it, and that NORAD was conscious of this situation (as it contributed to draft the policy):

"Despite the significant role of international financing of the Tanzanian beekeeping sector, donor coordination within the sector is still ineffective. The priorities of some donor agencies sometimes seem to over-shadow those of Tanzania [...]. Some donor-financed projects have also established parallel organizations within the government structure which have caused problems and confusion in their relations with the existing government administration" (The National Beekeeping Policy, 1998, p. 50).

Despite this observation, one can observe that in conditions of uncertainty (as the Beekeeping Zone model is new and involves a complex institutional structure), the MNRT-FBD still seeks support in the formulation of policies. As ADAP underlines (2013, personal communication, author's translation),

"The work we will be doing in the coming months could influence the content of policies. There is a joint elaboration of beekeeping policies between the MNRT-FBD, IBA and ADAP [...]. We participate in this elaboration; they are relying on us to move forward".

6. PARTICIPANTS' DISCOURSE: THE EMBODIMENT OF DISTINCT *ENVIRONMENTALITIES*

This chapter will try to understand the specific *environmentalities,* as described by Fletcher (2010) that form the basis of participants' positions concerning the natural resources management they consider appropriate, based on their discourses concerning natural resources conservation and management. It will expose how the various *environmentalities* embody contrasting strategies for governing natural resources and natural resources' users, as well as the way they articulate or compete to produce the current management practices within Mlele Beekeeping Zone. In Mlele Beekeeping Zone's management model, each participant's position is composed of a mix of various *environmentalities*, which will be presented below.

6.1. The local communities' position: *truth environmentality*

The lack of data emanating directly from the local communities hinders a complete analysis of this actor. However, a few elements can be highlighted. The local communities, including IBA, IEA and the VGSs argued in the beginning of the project for an approach to natural resource conservation based on humans' interconnections with nature, especially through their spiritual links. Indeed, more than 70% of the villagers interviewed during the village survey conducted by ADAP in 2002 considered that nature had to be preserved for its cultural and spiritual value, and 95% mentioned traditions and local taboos regarding the use of certain wildlife and tree species (Association for the Development of Protected Areas, 2002). This is confirmed by the fact that only 34% of the local communities interviewed during the village survey showed an understanding of the term *environment*, which indicates that the Northern conception of the term did not permeate Mlele's local communities at that time. In this regard, ADAP (2013, personal communication, authors' translation) told me an anecdote, affecting a jocular tone, but which gives an idea of this strong interconnection:

> *"I was with this old Beekeeping Officer [...] at the top of Mlele's escarpments, we were overhanging the forest landscape, and then, with tears in his eyes, he embraced the landscape in a gesture and told me: you see, this is the land of my ancestors, this is my land..."*

6.2. The forest and beekeeping sector's position: *neoliberal, disciplinary* and *sovereign environmentalities*

The forest and beekeeping sector, represented by the MNRT-FBD and its decentralized services, employs a mix of strategies embodied in various *environmentalities,* mainly *neoliberal* and *disciplinary*, using its sovereignty to provide its objectives with suitable territories. Therefore, it bases its interventions on a sovereign *environmentality*, as one of its main objectives is to designate areas suitable for the creation of Bee Reserves and Beekeeping Zones and provide title deeds and land registration (The Ministry of Natural Resources and Tourism, 2001). It therefore contributes to *territorialization*, to ensure natural resource preservation and to facilitate the control over natural resources uses by local communities.

First, its conservation and development goals are embedded in a *neoliberal environmentality*. As the main goal of the development of the beekeeping sector is to *"improve biodiversity preservation and foreign exchange earnings through bee products' based industrial development and trade"* (The Beekeeping Act, 2002, part II, art. 3) to meet the national goal of an "*accelerated and equitable growth*" (United Republic of Tanzania, 2005, p.14), the MNRT-FBD undertakes *organizing actions* to operate in the conditions surrounding the bee products' market: it is renewing its policies enacted in the 1990s and 2000s (Reinhard, 2013, personal communication), it aims at developing beekeeping research to improve beekeeping technologies (The Ministry of Natural Resources and Tourism, 2001) and enhancing capacities at every level to manage and develop the beekeeping sector (The Beekeeping Act, 2002, part II, art. 3). Thus, the MNRT-FBD aims to create external incentive

structures within which actors, considered as self-interested and rational, are motivated to espouse appropriate behaviors. Indeed, amongst its various responsibilities, we can read that its role is "*to create an enabling environment for a strong private sector*" (The National Beekeeping Policy, 1998, p. 1), "*to enable effective and sustainable beekeeping extension services, both Central and Local government will encourage executive agencies, NGOs and the private sector to establish and manage apiaries [...] on profit-making basis [...*]" (The National Beekeeping Policy, 1998, p. 20) and to develop products' marketing as an incentive to participate in commercial beekeeping (The Ministry of Natural Resources and Tourism, 2001). But it can be observed that the government rationality applied to the market extends to other fields. By willing to decentralize natural resources management, it tries to infuse this rationality in social relations: as mentioned in The National Beekeeping Policy (1998, p. 22), there is a need

> *"To enable the effective participation of women and the youth in carrying out beekeeping activities, extension packages whose aims and objectives are to make beekeeping a simple and attractive economic venture will be designed and rendered to the women and the youth."*

The MNRT-FBD is therefore creating the incentive structures to direct self-interests of marginalized individuals toward socially productive objectives of the State (Fletcher, 2010). Consequently, the exercise of power aims at facilitating economic growth to contribute to development needs.
Moreover, one can observe the deregulation-reregulation process (Castree, 2008). State's interference in natural resources management is suppressed: the MNRT-FBD "*will focus on policy development, regulation, monitoring and facilitation and decentralization of responsibilities*" (The National Beekeeping Policy, 1998, p. 39). Policies centrally prescribed will therefore facilitate privatization and commodification of natural resources through bee product trade and ecotourism notably (The National Beekeeping Policy, 1998). All these elements of course derive from the episteme proposed by NORAD in the 1990'.

Second, the MNRT-FBD objectives result of a *disciplinary environmentality*. Its goals are to incite individuals to internalize ecological values and social norms (such as the need to participate in natural resource preservation), in order to compel them to self-regulate their behaviors regarding natural resources uses, and thereby respond to the State's objectives. The National Beekeeping Policy (1998, p. 6) argues that "*the major responsibilities of government institutions and non-governmental organisations are to assist local communities by making them aware of their own situation and supporting them to become responsible for their own destiny*", keeping in mind that "*environmental management should be everybody's responsibilities*". Individuals have to become aware of the linkages between environment and development and the need to participate in environmental actions to ensure their development (The National Beekeeping Policy, 1998). Instrumental modalities foreseen for this purpose are to transfer ownership of land and access to and right to use natural resources to local communities, as these elements are supposed to be linked to the level of care given to the environment (The National Beekeeping Policy, 1998).

6.3. The wildlife sector's position: *sovereign* and *neoliberal environmentalities*

In the wildlife sector, *sovereign* and *neoliberal environmentalities* are observable. Moreover, the MNRT-WD mobilizes a *truth environmentality* to sustain the first two positions.

The position of the MNRT-WD refers to the *fortress conservation* approach. It is important to note that the development of policies related to wildlife management was strongly supported by the GIZ since 1987 (Deutsche Gesellschaft für Technische Zusammenarbeit, 2005), therefore the policy content reflects the visions of other *epistemic community*.
In the Wildlife Policy of Tanzania (2007), one can observe the narrative of wildlife habitats shrinkage and degradation caused by the growing human population, as well as the decimation of some wildlife populations: "*wildlife resources are constantly under threat as a result of illegal off-take, over-*

exploitation and ecosystem degradation" (The Wildlife Policy of Tanzania, 2007, p. 21). The objectives are therefore the preservation and conservation of wildlife species, consequently "*to support, strengthen and enlarge of the wildlife protected areas network as the core of conservation activities*" (The Wildlife Conservation Act, 2009, part II, art. 5). The State retains the overall ownership of wildlife, the overall responsibility for the management of all wildlife protected areas (except the WMAs, where responsibility is transferred to local communities), and is committed to ensure that wildlife areas remain pristine. It aims at securing Game Controlled Areas which are considered particularly under threat (encroachment and illegal off-take) and recognizes the need to strengthen capabilities to carry out anti-poaching operations (The Wildlife Policy of Tanzania, 2007). As one can observe, although this policy is recent, it still reflects the criticized *fortress* approach, as it entails strict enforcement of protected areas boundaries, their extension and sanctions for encroachment and illegal off-takes. Wild Footprints Ltd. seems to share this position since the company presents itself as a family "*who have a real passion for the wilderness and all her treasures*" (Wild Footprints Limited, 2012). The company considers conservation as its direct responsibility: "*without conservation there is no future for a hunting or safari industry*". Constraints related to conservation identified by the company are a growing rural population, pastoralists, demand for bush meat, pressure for land, illegal logging, but also "*greed, dirty politics and abuse of power*. *It all adds to very costly operations in fighting negative forces and that is the biggest challenge yet – funding for a good cause*". (Wild Footprints Limited, 2012). On the side of TBGS (Tanzania Big Game Safaris, date unknown) the same narrative and discourse can be read:

> *"A crucial element of conservation is obviously the need for anti-poaching. Each and every day, the local population encroaches into Wildlife Management Areas (WMA), Game Controlled Areas (GCA) and Game Reserves (GR), looking to earn a living. This is a result of the ever increasing population of the local towns and villages. CFT [Conservation Foundation Trust, a foundation emanating from TBGS in charge of community development projects] spends an incredible amount of resources on patrolling these areas, with a year-round presence. This will ensure that our children can still enjoy what we and our forefathers have enjoyed ".*

This sector also mobilizes a *neoliberal environmentality*. Indeed, the MNRT-WD, like the MNRT-FBD, retains the responsibility of providing policy and regulatory framework in order "*to create an enabling environment for the private sector to invest in various forms of wildlife utilization and conservation*" (The Wildlife Conservation Act, 2009, part II, art. 5) and "*to promote the use of wildlife in a manner that contributes to economic development*" (The Wildlife Policy of Tanzania, 2007, p. 25). In this sector, tourism participates in the commodification of natural resources. As "*the long term success of wildlife conservation depends largely on the way conservation is perceived by the public*", local communities are supposed "*to change their attitude toward wise use of wildlife*"(The Wildlife Policy of Tanzania, 2007, p. 36), and to recognize its economic value and the opportunities it can provide at the local level. In this sector, it is not ecological values that have to be inculcated in local communities' mindsets, but an economic rationality, which would contribute to conservation. Wild Footprints Ltd. does not have any objective to self-discipline the local communities either; the company concentrates its efforts on sanctions in case of poaching. Indeed, we can read on its website (Wild Footprints Limited, 2012):

> *"We might actually be able to focus on our role as an Outfitter, instead of trying to solve political agendas, social issues and tackle development strategies. We leave that to people and organizations that qualify for that purpose and look forward to realizing our primary objective of conservation and sustainability"*.

Some elements of *truth environmentality* are also represented in the wildlife sector's discourse (Fletcher (2010) considers traditional ecological knowledge as a variant of *truth environmentality*). In the Wildlife Policy of Tanzania (2007, p. 29), one can read "*The government recognizes the importance of traditional knowledge in management and conservation of wildlife resources, and will work with local communities in promoting the use of such appropriate knowledge and technologies*".

Considering the previous assertions, one can consider this as a way to mitigate the expert-driven interventions regarding wildlife management, and therefore make the *fortress* position acceptable to local communities.

6.4. ADAP's position: *disciplinary, neoliberal* and *truth environmentalities*

The NGO considers this area as one of the most abundant regions on the continent in terms of wildlife and identifies the following issues:

> *"Trophy hunting is the dominant activity, to the detriment of traditional economic activities (agriculture, beekeeping, animal husbandry, and gathering). This situation leads to increased poaching and conflicts between various actors (anti-poaching patrols, local populations and state authorities), which ADAP tries to solve by implementing community-based natural resources management mechanisms"* (Association for the Development of Protected Areas, date unknown).

ADAP's formulation of objectives slightly differs over time. As it can be observed, ADAP developed its objectives over time according to the trends in conservation and development. Thus the narratives supporting conservation and development activities have been compiled, and we can find traces of each trend in the communication materials, such as its web site or presentation documents to potential donors.

At the time of the creation of the association and the definition of its articles, the vision was "*to contribute to the protection of natural ecosystems and biodiversity within protected areas in developing countries by a concerted, rational and sustainable exploitation of natural resources by and for local surrounding communities*" (Association for the Development of Protected Areas, 2009, p. 1, author's translation). The objectives were (Association for the Development of Protected Areas, 2009, p. 1, author's translation):

> *"- to strengthen the institutional framework and technical services in charge of anti-poaching control and repression; - to strengthen local capacities to ultimately transfer part of the management of protected areas to the surrounding population on the basis of a participatory model, and privatization of wildlife management areas; -to valorize natural resources and wildlife through trophy or resident hunting, extensive wildlife farming, marketing of products, ecotourism and handcraft; - to make the protected area concerned by the programs cost effective on the medium term, to ensure its local management on the long term; financial autonomy is thus considered as an objective; - to as much as possible use local knowledge related to environmental management, and in general, local skills to implement programs".*

These articles date from 1997; however, they have been maintained until present days. As one can observe, conservation was the main goal, and the NGO's interventions are framed within a *neoliberal environmentality*: implementation of governance reforms as a means of democratization of natural resources management, privatization of land and thus resources and commodification of natural resources through pricing. As stressed by ADAP (2013, personal communication, author's translation), *"Profit-making, the implementation of natural product's production chain or ecotourism, are the most driving incentives for local communities; when they are able to get revenues, they are willing to participate in natural resource management initiatives."* Commodification of natural resources is presented as the only viable alternative to tobacco cultivation and shifting agriculture:

> *"I still support the model that aims at conserving the ecosystem for the services it provides and the revenues it can generate. The co-management model seems coherent to me, the area has to be valorized by various means, thereby contributing to limit conflicts and generating more money in the same area. If you don't do that, you never reach a level of profitability, which can compete with agricultural frontiers, for example"* (ADAP, 2013, personal communication, author's translation).

Most of the activities proposed to valorize natural resources aim at turning the local communities into investors and producers, facilitating their integration in the global economy (promotion of extensive wildlife farming, marketing of products and handcraft). As emphasized by ADAP (2013, personal communication, author's translation):

> *"To allow individuals to develop themselves, it is very capitalist, but it is an important development factor [...]. If there are hundreds or thousands who are in this social mobility's logic, this could be beneficial. We are not in a trickle-down perspective; we are promoting bottom-up logics, where farmers leave a hazardous exploitation to develop a production"*.

ADAP created its website at the end of the 2000s, and reformulated its objectives at this occasion. ADAP's current vision is "*Conservation with communities: supporting livelihoods, saving ecosystems and species*". The association promotes

> *"A community approach in the management and the conservation of the protected areas, fauna and flora. Its goal is to help the local communities to make natural resources a factor of development through the ecosystems conservation. Thus, our approach contributes to the protection of many ecosystems, which are suffering increasingly pressures, mainly because of the population growth and growing poverty, and to the improvement of the local communities' livelihoods. [...] ADAP supports the implementation of activities compatible with a durable exploitation of the natural resources. Its objective is to generate incomes for the local communities while preserving the environment"* (Association for the Development of Protected Areas, date unknown).

ADAP identifies the loss of resources and revenues imposed by conservation policies as the major threat to local development (Association for the Development of Protected Areas, date unknown). "*ADAP is therefore trying to reconcile conservation with local development imperatives*" (Association for the Development of Protected Areas, date unknown, author's translation). It thus aims to promote economic alternatives to compensate this loss. One can observe the narrative of loss or scarcity of resources, and the need to compensate local communities for the costs associated with conservation. Furthermore, ADAP defines itself as an NGO active in the fields of "*community-based natural resources management, sustainable use of natural resources and institutional support to community-based organizations in charge of the management of natural spaces and resources*" (Association for the Development of Protected Areas, date unknown, author's translation).

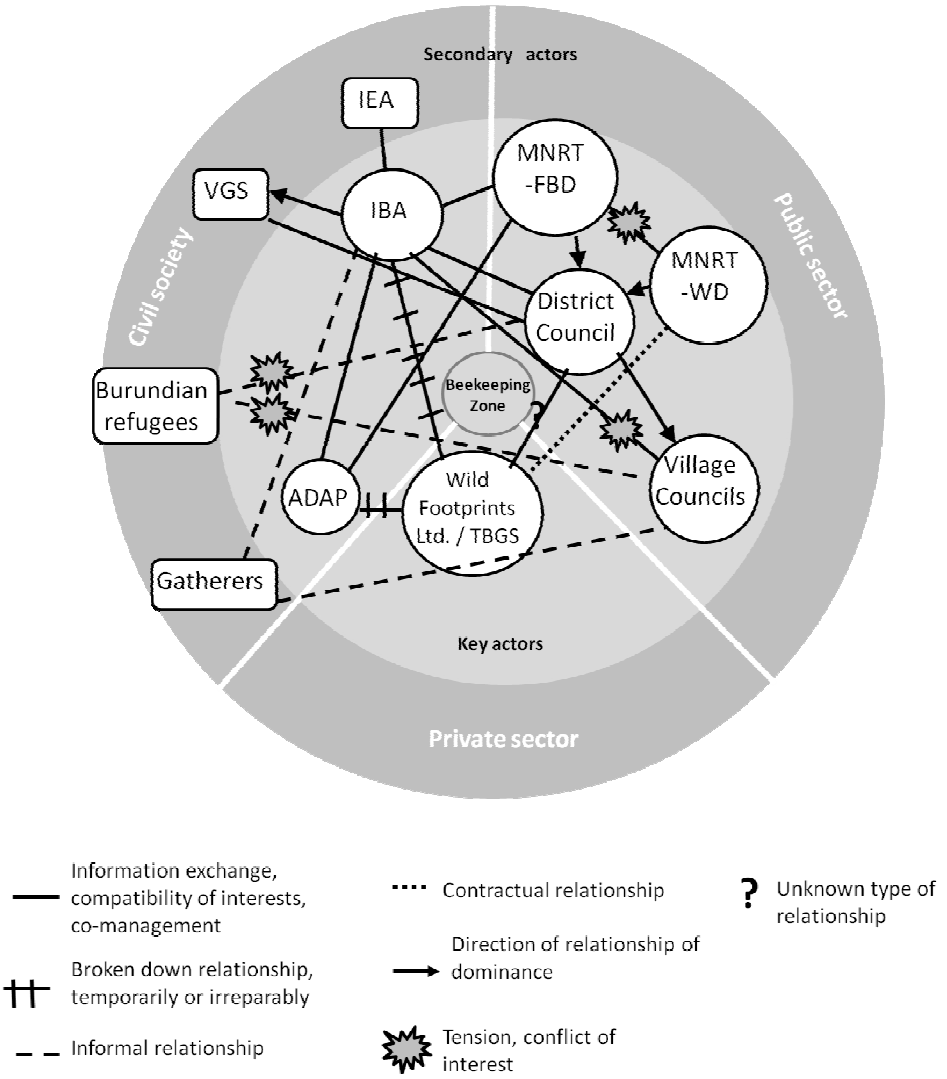
Consequently, ADAP elaborates its programs based on a participative identification of problems related to natural resources management. Its programs aim mainly at supporting the implementation of institutional mechanisms for community access and use rights to resources, as well as community management, through the strengthening and the development of local activities related to the management of natural resources, mainly in the field of wildlife and forest resources management. ADAP thereby strives for the empowerment of its local partners, in order to make them able to meet the requirements arising from the states in the framework of decentralization processes. Therefore, it proposes to strengthen their capacities in order to make them able to deal with modern legal frameworks related to community-based management of natural resources (Association for the Development of Protected Areas, date unknown), and as such, promotes a *disciplinary environmentality* (the way this *environmentality* is implemented will be discussed in the next chapter) . As stressed by ADAP (2013, personal communication, author's translation): "*ADAP wants to prove that communities are able to manage natural resources better than an external institution*". In this narrative, we can observe the integration of the most recent trend in conservation and development programs, which emphasize the local reappropriation of natural resources management through the provision of legal rights for the local communities, the empowerment of local institutions to encourage them to take over their new management responsibilities, and the implementation of distribution mechanisms of the benefits derived from resources management, all elements of a perception grounded in a *disciplinary environmentality*.

The NGO also bases its intervention on *truth environmentality* as it aims to include traditional ecological knowledge in the management activities promoted (Association for the Development of Protected Areas, date unknown). Moreover, as it has been previously mentioned when discussing about legitimacy, the NGO strongly supports the discourse regarding spiritual and historical links between local communities and land or resources. Interestingly, according to the NGO, ecotourism contributes to preserve this link with the Konongo culture: "*Ecotourism allows to revalorize and structure the local cultural heritage and to restore a dignity to the local culture*" (ADAP, 2013, personal communication).

7. ACTORS' ALLIANCES AND THE *SUBJECTIVATION* OF THE LOCAL COMMUNITIES

In a multi-actors' process involving political interests, tensions or conflicts provide useful information regarding the diverging values underlying the knowledge, discourses and practices. Besides, connections with actors sharing the same interests and beliefs can be a powerful tool to initiate common objectives and actions. This is particularly important in the context of Mlele Beekeeping Zone, where participants have diverging interests regarding conservation and development objectives. An actors' mapping highlighting the tensions and connections between actors can be seen in the figure 12.

Figure 12: Actors' connections
(inspired from Deutsche Gesellschaft für Technische Zusammenarbeit, 2007)



This figure highlights the networks of participants as well as convergences or conflicts of interests and beliefs. It illustrates tensions existing between the MNRT-FBD and the MNRT-WD. Indeed, the MNRT-FBD does not face the same issues as the MNRT-WD in the framework of the decentralization process. Their interests are not shared, and the partitioning of both entities does not favor the implementation of trans-sectoral policies, which has an impact on every administrative scale and between the actors, who depend on these policies for their activities. The management of multiple-use zones is hindered by the absence of any inclusive legal framework on natural resources

management and by inadequate coordination between sectors and institutions. This was particularly observable through the delays and the blockages of the process, as a result of which it took more than five years for Mlele Beekeeping Zone to be set up. The MNRT-FBD had to face many pressures, as it was already mentioned previously. However, the situation could change in the future, as the MNRT-WD has a new Director and is passing through a series of reforms aiming at restructuring the sector and gaining more transparency[22].

In this conflict, ADAP was instrumentalized by the MNRT-FBD, which saw in the association the lightning rod and the means to claim rights from the MNRT-WD. This is still the case today; conflicts have been pacified, but as already mentioned above, the MNRT-FBD is still seeking support from ADAP to build a new legal framework concerning beekeeping, based on the pilot experience developed in Mlele Beekeeping Zone, as it is the only one, that had a long-lasting investment and reached this step in the gazettement's process (Hausser, 2013, personal communication).

This figure also highlights the lack of connections between either IBA or ADAP and the wildlife sector, represented by the MNRT-WD and the trophy hunting company. The lack of connection between IBA and the MNRT-WD is explained on the one hand by the impossibility for the association of beekeepers to go to the headquarter of the MNRT in Dar es Salaam to meet the officers and negotiate the management plan and bylaws related to Mlele Beekeeping Zone (for distance-related reasons, but also for distrust reasons). On the other hand, the lack of connection with Wild Footprints Ltd. or TBGS (good or bad) is difficult to explain, as the companies are working in the area some months per year, and visit the villages to obtain some supplies. However, the IBA central committee never entered in contact with their representatives. There are only field relationships (good) between VGSs or beekeepers and TBGS's game scouts (ADAP, 2013, personal communication). Two hypotheses can be drawn. First, the companies do not want to enter into negotiations as long as the MNRT-WD does not provide clear directions and guidelines concerning this new type of community area. Second, as it has already been mentioned, they simply want to keep the preferential relationship they have enjoyed with the MNRT-WD and do not wish to change of contact. This indicates that resistances to collaboration remain, and highlights the strong connection between Wild Footprints Ltd. or TBGS and the MNRT-WD, which recognizes the latter as the only reliable contact. When I asked ADAP why they did not try to encourage IBA to develop closer relationships with trophy hunting companies, they told me that they faced many blockages during the implementation of the Beekeeping Zone; the lack of close relationships with the trophy hunting companies was one of the blockages, but not the more constraining. Thereby they preferred to concentrate the actions on other aspects of the process, especially the institutional development of IBA. This can be explained by the objectives of the ADAP as well as by its instrumentalization from the MNRT-FBD. Nevertheless, with the arrival of the new trophy hunting company, they have the project to relaunch discussions (ADAP, 2013, personal communication).

The interests, beliefs and *environmentalities* within which participants' actions are embedded lead to alliances, which in turn frame and shape the way power is exercised, how the government and influential actors make decisions about natural resources uses and how the local communities are involved in these decisions and actions.

As already mentioned above, the MNRT-FBD joined the international discourse and the *epistemic community* related to community participation in the management of natural resources in order gain economic support from and to make an alliance with an international NGO, therefore it fostered collaboration with ADAP in order to be able to defend its interest against the MNRT-WD.

[22] Having had some contacts with him in the past and knowing him by reputation, I can assume that he is part of the epistemic community represented by NORAD, ADAP and the MNRT-FBD, which can largely contribute to improve the relationships between the two sectors.

It is important to clarify the decision-making dynamic related to the issue identified by the beekeepers. Indeed, as it has already been mentioned, in the beginning IBA and the beekeepers in general were searching for safety when practicing beekeeping in the forest, and for the generation of revenues. ADAP (2013, personal communication) underlines that by an accumulation of a series of circumstances, a representative from ADAP arrived in Mlele, became aware of the conflicts between the beekeepers and the other natural resource users (mainly, the trophy hunting company) and proposed to act as a mediator between the actors. IBA took advantage of the opportunity, accepted ADAP's role, and then ADAP contacted the MNRT-FBD. The MNRT-FBD, and especially the beekeeping sector, newly created at that time, had on its governmental agenda the project to find an application of the new Beekeeping Policy, through the implementation of a beekeeping area (Bee Reserve or Beekeeping Zone), and invited ADAP to support the implementation of a beekeeping area in Mlele district. ADAP saw in this situation the means to develop a project in accordance with its objectives to make natural resources a factor of development through the ecosystem conservation, and started its program.

As conceptualized by Kingdon (2003), this situation is characterized by a *coupling* of three different *streams*: an issue was identified by beekeepers (a lack of safety and the need to generate revenues), which represents the *problem stream*; the political and institutional framework was passing through reforms as the Beekeeping Division was being created within the Forestry Division and needed a political recognition, this is the *political stream*; and a new Beekeeping Policy, providing with new opportunities for local communities, entered into force. The implementation of beekeeping areas was one alternative, or solution, which the MNRT-FBD had, amongst other actions aiming to develop the beekeeping sector. We can note that the MNRT-FBD, integrated within the *epistemic community* advocating for the incorporation of local communities into the management of natural resources within protected areas, influenced the terms of the initial debate by proposing this alternative, which represent an instrument of power. Indeed, actors will then have to comply with the proposed model if they want to benefit from any kind of support. This last stream is the *policy stream*. These three *streams* functioned separately from one another, but reconciled at this precise moment. This *coupling* opened a window of opportunity for change, and the implementation of a beekeeping area passed on the political agenda. The MNRT-FBD strongly promoted the implementation of an area dedicated to beekeeping, managed by local communities without knowing precisely the real needs of the local communities. Consequently, this window of opportunity is a *political window*, as the forestry and beekeeping sector was passing through a series of reforms and the Beekeeping Division needed to apply its new policies.

Moreover, these two entities share the same *environmentalities*, *neoliberal* and *disciplinary.* These shared perceptions about natural resource uses and local communities' involvement contribute to reinforce each other's objective regarding natural resources conservation and management.

This contributes to change the mode of power exercised by the MNRT-FBD, and initiated the process of *subjectivation* described by Foucault (1982), necessary for the Beekeeping Zone's model to succeed in reducing poaching and conserving natural resources. Historically, the local communities were subjected to the power of government authorities, and there was a clear distinction between the villagers (the main users of natural resources, considered as poachers) and the local or district authorities, considered as oppressive powers (ADAP, 2013, personal communication). With the Beekeeping Zone model, this division is less marked, as every actor is supposed to participate in the management. Power is therefore scattered between the MNRT-FBD, the MNRT-WD, the District and Village Councils (consequently every villager as the Village Councils are the representatives of Village Assemblies), assisting NGOs, civil society organizations and the private sector, which implies fostering self-discipline amongst participants.

ADAP played a major role in the *subjectivation* of local communities. The NGO identified as one of the major causes of conflict at the local level the lack of contact's persons:

> *"Government organizations and private companies often communicate only with Village Councils, which appears to be counterproductive and a source of misunderstandings. It became thus necessary to have a structure organized according to nationally recognized standards and which represents villagers' interests practicing legal activities in the forests"* (Association for the Development of Protected Areas, 2003a, p. 14, author's translation)

It therefore strengthened the association of beekeepers to make it an organization representative of the local communities and able to have a leading role in the community management of resources, because "*it is easier to obtain a transparent management of IBA, by a close monitoring. We also have more pressure means as a supporting organization on IBA than on the Village Councils*" (ADAP, 2013, personal communication, author's translation).

At the beginning of the project, the local communities were searching for means to generate revenue, through bee product trade or bee-product-related work. Therefore, they joined part of the CBNRM discourse; the part related to an increased sharing of the benefits from natural resources uses. IBA, IEA and even the VGSs, in the beginning, did not join the environmentalist discourse promoted by the ADAP on the need to decrease illegal pressures on forest and wildlife resources to improve the ecosystem's health (ADAP, 2013, personal communication), and this fieldwork did not give the opportunity to assess if they claimed legal rights over the forest areas to secure their entitlements. Nevertheless, some villagers' mindset and behavior were progressively transformed in two ways.

First, some of them, having joined the project rather opportunistically (they were seeking to increase honey production or searching for jobs), finally developed an increased sense of Western environmental awareness[23] and became *environmental entrepreneurs* as they now take an active role in the management of the Beekeeping Zone.

> *"IBA went through various crises, which constituted opportunities to open the association to other actors. Those who entered were not necessarily better than the previous ones [in terms of management skills and transparency], but the turnover allowed to change the mentalities and the association's image."* (ADAP, 2013, personal communication, author's translation)

It is the commitment of these *environmental entrepreneurs*, which makes community-based environmental regulations as possible. This *subjectivation* thus leads to coercive behavior, as illustrated by ADAP (2013, personal communication, author's translation):

> *"It has been one year now since VGSs' patrols are functioning, we arrested many people and there are people who tried to exert pressure in order to stop them, for the first time they have become a factor which bothers people who had a free access to Mlele. We succeed in driving out people who were encroaching in Mlele Beekeeping Zone, and this without violence and without the involvement of the police or the WD. It has been negotiated through the project and local actors, pressures have been exerted by the village government in order to make them leave. These are signs, which indicate that there is a better management of this area now than there had ever been before. It also shows a relative reappropriation of the area at local level."*

[23] The absence of data regarding the IBA and the VGSs current perception and understanding of terms such as natural resources or environment makes it impossible to know if they start to conceptualize the environment in the same way as Western countries and can now be considered as part of the epistemic community, nor if they developed a particular attachment to nature, but this environmental awareness indicates the socially differentiated ways local communities think about the environment and get involved in specific actions.

This new “law enforcer” behavior is surprising. To undertake this role involves confronting not only neighbors and family members, but also violent poachers, such as Burundian poachers involved in commercial hunting for bush meat, heavily armed. In 2006, I spent a few days in the Beekeeping Zone and was involved in a case of poaching by (presumed) Burundians. Some VGSs and a district officer intercepted the poachers, who finally managed to flee. We had to spend a few more days in the forest, and all of them were very afraid of potential reprisals by Burundian groups during the night. This involvement in natural resources management implies that they have now to interfere in situations that local communities’ members would normally avoid. These elements refer to the *privatization of sovereignty*: sovereignty is scattered between various actors, empowered to implement coercive conservation. The ADAP promotes this approach, and through its *disciplinary environmentality*, aims at inculcating a *sovereign environmentality* within the local communities:

> *"The strengthening of anti-poaching activities is necessary; the VGSs are a good model. It is very useful to provide the means to do it at village level, because we can observe that a regular management by villagers is more effective than what is done by the State"* (ADAP, 2013, personal communication, author's translation).

Second, some villagers do not actively take part in the management of the area nor enforce regulation, nor commit themselves to natural resources protection, but these *consenters* spontaneously restrain their natural resources use because they internalized management principles and regulations to which they are subjected. As shown by ADAP (2013, personal communication, author's translation): "*The objectives are well understood by the villagers, notably the VGSs' actions concerning the ban on bark hives, which they find rather compelling. Some beekeepers removed their hives from the Beekeeping Zone because they do not have the means to use log or box hives*".

Besides, they should embrace the neoliberal objectives soon: "*IBA's leaders understood the usefulness of this management, and have a vested interest in it as it can generate revenues*" (ADAP, 2013, personal communication, author's translation), "*The bylaws will allow a direct financial allocation at village level, thus villagers will be able to understand the process and appropriate this area*" (ADAP, 2013, personal communication, author's translation).

This brings attention to the mechanism of *intimate government* conceptualized by Agrawal (2005b). Regulations are more consistent, internalized and applied than central regulations had been prior to the arrival of ADAP. Moreover, it has as a consequence the fact that the opposition between the central power and local communities is weakening. In order to achieve the objective of protecting natural resources, local communities’ members and district officers patrol together within the Beekeeping Zone. The management trend now is to involve simultaneously two groups previously defying each other. This trend does not only concern the forestry and beekeeping sector, the wildlife sector, also, is drawn into relationship with IBA. Although the wildlife sector is showing a preservationist discourse, embedded in a *sovereign environmentality* inherited from the colonial era, changes are occurring. They are illustrated by a demand emanating from the director of the Rukwa Game Reserve (in charge of organizing the anti-poaching patrols for the whole district) to organize joint patrols (between the district officers, TBGS's game scouts and the VGS), which did not receive any response from the trophy hunting company (ADAP, 2013, personal communication). Despite this, this shows that power relations between the wildlife sector and the local communities are changing toward a more inclusive model, although it never tried to inculcate *self-discipline* within the local communities. What can be observed is that the MNRT-FBD and ADAP took over this task, and have brought together the conditions for wildlife conservation as required for the MNRT-WD to meet its objectives: the VGSs start to be recognized as a competent team, provided with an essential local and expert knowledge, disposing of quality equipment, and potentially more able to carry wildlife management activities than the district wildlife officers.

The MNRT-FBD, embedded in the same *disciplinary environmentality*, is strongly supporting this governance system, and would like to extend it: "*The MNRT has the idea, or project, to post IBA representatives within the Village Environmental Committees*" (ADAP, 2013, personal communication, author's translation). Indeed, the lack of funds faced the government diminishes its capacity to govern, making it more willing to transfer power and control to decentralized entities. The project thereby contributes to depoliticize potential land and natural resources claims, as these claims would be settled without the Village Council's authority. *Intimate government* is successful because it stimulated not only the commitment of a few *entrepreneurs*, but also the assent of an important part of the local communities. The combination of these two aspects encouraged the acceptance of a stricter regime of regulations.

This protected area's model imposes "*dividing practices*" (Foucault, 1982, p. 777) on individuals: their identity is divided, and it promotes the division of villagers between the self-disciplined one, and the *dissenters*, who remain poachers. It contributes to subject the local communities to the knowledge or truths contained in the CBNRM discourse, but also to make them produce themselves as subject. This is illustrated by ADAP (2013, personal communication, author's translation):

> *"It is obvious that some beekeepers can be excluded [...]. And if IBA takes it seriously, some beekeepers, especially non members of IBA, will stop practicing beekeeping automatically due to inadequate knowledge, access to training on the construction of log or modern hives as well as equipments for construction of hives"*

In addition, it can be observed that, as underlined by ADAP (2013, personal communication, author's translation), "*there is an increasing distrust toward IBA*". IBA gained additional responsibilities (apart from the management of the Beekeeping Zone); the association is now responsible for the issue of access permits to Rukwa Game Reserve, and many beekeepers, who do not trust IBA, complain of being forced to deal with IBA for areas, which are not under its jurisdiction (ADAP, 2013, personal communication). Moreover, it is observed by ADAP (2013, personal communication, author's translation) that "*The link between regulations and their enforcement is vague for many people*", and that "*people do not really want to receive the information [provided by IBA on the Beekeeping Zone regulations]*" (ADAP, 2013, personal communication, author's translation). This indicates that many villagers are unconvinced by the need to manage natural resources the way it is practiced in the Beekeeping Zone, and that the reconfiguration of interests and powers and the implementation of regulatory practices start to lead to social passive resistance.

> *“Some beekeepers have enough of being reprimanded by VGSs, and if they have an opportunity to go somewhere else, they will leave. Those who have traditional territories in Mlele will not leave, but they will try to exert pressures to keep their traditional hives and try to hide them”* (2013, personal communication, author's translation).

Community-based natural resources management, rather than diminishing social differences, initiates new *dividing practices* within already differentiated communities. The strategies of resistance of some villagers used previously to bypass central government regulations are now less effective as local communities’ members are patrolling and monitoring the Beekeeping Zone and are willing to collaborate with district officers. Reduced access to natural resources will inevitably lead to the marginalization of groups already excluded. As ADAP raises it: “*Collective management is not a free access, it is a regulated access for a limited number of entitled persons clearly identified*” (2013, personal communication, author's translation).

8. CONCLUDING REMARKS AND RECOMMENDATIONS

This thesis explored how changes in the governance of natural resources stimulated by the implementation of a Beekeeping Zone affect local communities' behavior regarding natural resource management and uses and how the local communities' involvement in natural resources management changes in Mlele district. It showed which specific actors' interests and subjectivities constitute the driving forces behind the discourse on natural resources management and how the Beekeeping Zone model seeks to turn local communities into environmental subjects.

As a first step, I applied Foucault's analytical framework to discourse analysis through the *genealogy* to study the development of natural resources management in Tanzania with a focus on the shifts in policies and practices of natural resources management. This aimed to show the strategic relationship between the political and economic interests of specific actors, the values given to natural resources and the way they are expressed in national legislation and conservation and management practices. In a second phase, based on empirical findings from a case study in Mlele Beekeeping Zone, I proposed an actors' analysis using the *epistemic communities*' approach to explore actors' interests, knowledge and beliefs. Then, I applied Fletcher's concepts related to *environmentalities* to investigate the positions and values of each actor regarding the conservation and management of natural resources. Moreover, based on Foucauldian and Agrawal's concepts, I explore the relationships embedded in the Beekeeping Zone regime, the emergence of *intimate governement* and the *subjectivation* of local communities, as a technology of power that seeks to render the local communities into *environmental subjects*. Results and inputs from this research are describe below.

The emergence of *intimate government* in Mlele district revealed the contribution of an approach based on the *environmentalities* and *epistemic communities* to understand the transformations in the governance of natural resources and the involvement of local communities in resource management.

Through Foucault's *genealogy* approach, the investigation of the discursive paradigm shifts and the transitions between different regimes and practices of natural resources conservation and management highlighted the relationship between knowledge, discourse and practices, which produce and sustain dominant truths. These truths rely on distinct *environmentalities*, which led to various outcomes and institutional and political arrangements over time. This draws attention to the nested constitution of the policy field and people's objectives, interests and identities regarding natural resources management.

Focusing on more recent trends, this thesis exposed the increasing role played by *epistemic communities* promoting the involvement of local communities in natural resources management and in markets in the definition of state interests and the formulation of policies. It also showed how state administration institutions, embedded in a mix of *disciplinary* and *neoliberal environmentalities,* finally joined specific *epistemic community* and sought to incorporate local communities by giving them new meanings of nature and natural resources to meet conservation objectives. This constitutes a non-coercitive means of implementing the objectives and interests of powerful actors.

Some members of the local communities, called *environmental entrepreneurs* in the previous chapter, joined the environmental discourse promoted by the State and NGOs to secure their entitlements, but were then turned into environmental subjects as they were influenced by new understanding of self-interests, and had to get strongly involved in natural resources management. Nevertheless, one can note that they still do not meet their objectives as they do not benefit

financially from this management nor do they get long-lasting jobs. These *entrepreneurs*, through their commitment to conservation values and their role in the regulation of natural resources uses, acquired positions which closely resemble those of local authorities. Although they joined the Beekeeping Zone project rather opportunistically and to respond to specific objectives, the *subjectivation* process raises the long term implication of these new values, which goes far beyond the length of a program or policy life cycle. These new meanings of natural resources have a central role in determining and maintaining regimes of practices contributing to dispersing power and implementing an *intimate government* and its related regime of regulations, which imply the participation and collaboration of a wide range of actors, previously defying each other. This dispersal of power led to a self-disciplining effect amongst participants.

This context thus gave space to a reconfiguration of the relationships between the local communities, the Village Councils, the District Councils and the State institutions, which had two different impacts. First, this model institutionalized political imbalances between the wildlife sector and the other actors, and between the *environmental entrepreneurs* and the local authority. Second, this model created and sustains social imbalances within the local communities, as the *intimate government* affects the local communities in differing ways as it was shown with the (rather simplistic) distinction between the *environmental entrepreneurs*, the *consenters* and the *dissenters.* Nevertheless, this kind of distinction is never stable and could evolve over time.

However, one can observe that although the *intimate government* is more strict and that regulations are now more numerous and more likely to be enforced, it does not eliminate resistance. It would be interesting to pay more attention to the *dissenters*, who, through their everyday actions, claim their right to access land and natural resources. For this group, the situation did not change, regulations remain based on coercitive measures, and it is only the persons in charge of law enforcement who changed. To identify the group concerned and the reason for not participating or consenting in natural resources conservation and management would provide useful information on their perception of nature and the complexity of the local context.

Nevertheless, this does not mean that other initiatives related to beekeeping areas will face the same issues in terms of authority overlaps or division between villagers, but as Mlele Beekeeping Zone is the only area which reached this stage of implementation, it could serve as an example for other initiatives. It is thus necessary, to understand the long-term implications of projects and policies, to be aware of the way these interventions transform the involvement, the actions and the identities of the actors, but also to keep in mind that they transform them only partially.

To conclude, the major limitation faced by this research work was the inability to gain acces to data regarding the perception of nature and natural resources from the *environmental entrepreneurs* and the *consenters*. Indeed, in this context it appeared impossible to define if they can really be seen as "*environmental subjects - people who care about the environment*" (Agrawal, 2005b, p. 162), and consequently the "products" of an *environmentality* or *disciplinary environmentality* operating "*through the diffusion of ethical norms*" (Fletcher, 2010, p. 177), or if their new behavior (especially concerning the *environmental entrepreneurs*) is rather related to the *privatization of sovereignty*, thus relying on a *sovereign environmentality*, *i.e*. an "*exercise of sovereign power through the construction and enforcement of codified rules*" (Fletcher, 2010, p. 176), having changed their practices without having changed their values related to natural resources.

REFERENCES

Adams, W.M. and Hulme, D. (1998). Conservation and communities: changing narratives, policies and practices in African conservation. *Community Conservation Research in Africa*, 4, 32p.

Adams, W.M. and Hulme, D. (2001). Conservation and community: changing narratives, policies and practices in African conservation. In: D. Hulme and M. Murphree (eds), *African wildlife and livelihoods: the promise and performance of community conservation* (pp.9-23). Oxford: James Currey.

Adams, W.M. and Hutton, J. (2007). People, parks and poverty: political ecology and biodiversity conservation. *Conservation and Society*, 5(2), 147-183.

Adler, E. and Haas, P. M. (1992). Knowledge, Power, and International Policy Coordination - Conclusion: Epistemic Communities, World Order, and the Creation of a Reflective Research. *International Organization*, 46 (1), 367-390.

Agrawal, A. (2005a). *Environmentality: Technologies of government and the making of subjects*. Durham: Duke University Press.

Agrawal, A. (2005b). Environmentality: Community, intimate and the making of environmental subjects in Kumaon, India. *Current Anthropology,* 46(2), 161-190.

Agrawal, A. and Gibson, C.C. (1999). Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development*, 27(4), pp. 629-649.

Alden Wily, L. (2001). Forest management and democracy in East and Southern Africa: Lessons from Tanzania. *IIED Gatekeepers Series*, 95, 20p.

Alden Wily, L. (2004). Can we really own the forest? A critical examination of tenure development in community forestry in Africa. *Forest, Trees and Livelihood*, 14(2), 15p.

Association for the Development of Protected Areas (2001). *Programme d'appui à la gestion d'une Bee Reserve dans la région d'Inyonga, Tanzanie*. Geneva: Association for the Development of Protected Areas (unpublished).

Association for the Development of Protected Areas (2002). *Inyonga Bee Reserve Program: Inyonga village survey report*. Inyonga: Ogejo, H-F., Brüschweiler, C. et Hausser, Y. (unpublished).

Association for the Development of Protected Areas (2003a). *Programme d'appui à l'apiculture à Inyonga, Tanzanie. Réf. FGC : 09-02. Rapport final de la première phase 2002-2003*. Geneva: Association for the Development of Protected Areas (unpublished).

Association for the Development of Protected Areas (2003b). *The development of ecotourism in the Rukwa region - Potential and Perspectives.* Geneva: Association for the Development of Protected Areas (unpublished).

Association for the Development of Protected Areas (2004a). *Vegetation survey in Mlele Beekeeping Zone*. Inyonga: Mwangulango, N.A. (unpublished).

Association for the Development of Protected Areas (2004b). *Guidelines for the process to establish a Bee Reserve*. Geneva: Association for the Development of Protected Areas (unpublished).

Association for the Development of Protected Areas (2009). *Statuts*. Geneva: Association for the Development of Protected Areas.

Association for the Development of Protected Areas (date unknown). Conservation with communities [web page]. Available on: http://adap.ch/index.html (consulted on February 13, 2013).

Baroin C. and Constantin F. (1999). *La Tanzanie contemporaine*. Paris: Karthala.

Baxter, P and Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13(4), 544-559.

Benjaminsen, T.A. and Svarstad, H. (2009). Qu'est-ce que la "political ecology"? *Natures, Sciences, Sociétés*, 17(1), p. 3-11. doi: 10.1051/nss/2009002.

Blaikie, P. (2012). Should some political ecology be useful? The Inaugural Lecture for the Cultural and Political Ecology Specialty Group, Annual Meeting of the Association of American Geographers, April 2010. *Geoforum*, 43(2), 231–239.

Brockington, D. (2008). Corruption, taxation and natural resource management in Tanzania. *Journal of Development Studies,* 44(1), 103-126.

Brockington, D. and Duffy, R. (2010). Capitalism and conservation: the production and reproduction of biodiversity conservation. *Antipode*, 42(3), 469-484.

Brockington, D. and Scholfield, K. (2010). The conservationist mode of production and conservation NGOs in sub-Saharan Africa. *Antipode*, 42(3), 551-575.

Brosius, J.P. (2004). Indigenous people and protected areas at the World Park Congress. *Conservation Biology*, 18(3), 609-612.

Brosius, J.P., Lowenhaupt Tsing, A. and Zerner, C. (1998). Representing communities: Histories and politics of community-based natural resource management**.** *Society & Natural Resources*, 11(2), 157-168.

Bryman, A. (2012). *Social Research Methods* (4th ed.) New York: Oxford University Press.

Campbell, L.M. and Vainio-Mattila, A. (2003). Participatory Development and Community-Based Conservation: Opportunities Missed for Lessons Learned? *Human Ecology*, 31(3), 417-437.

Carlsson, L. and Berkes, F. (2005). Co-management: concepts and methodological implications. *Journal of Environmental Management*, 75, 65–76.

Castree, N. (2008). Neoliberalising nature: the logics of deregulation and reregulation. *Environment and Planning A*, 40, 131-152.

Chr Michelsen Institute (2009). *Rukwa Ruka: The attempt of a foreign donor to uplift a neglected region: A study of the impact of Norwegian aid to Rukwa Region, Tanzania*. Bergen: Chr Michelsen Institute.

Colchester, M. (2004). Conservation Policy and Indigenous Peoples. *Cultural Survival Quaterly*, 28(1). Available on: http://www.culturalsurvival.org/publications/cultural-survival-quarterly/none/conservation-policy-and-indigenous-peoples.

Cooke, B. and Kothari, U. (2001). "People's knowledge", participation and patronge: Operations and representations in rural development. In B. Cooke and U. Kothari (eds.), *Participation: The New Tyranny?* (pp.16-35). London: Zed Books.

Davis Cross, M. K. (2013). Rethinking epistemic communities twenty years later. *Review of International Studies*, 39, 137-160. doi:10.1017/S0260210512000034.

De Vaus, D. (2001). *What is research design? Research design in social research*. London: Sage.

Deutsche Gesellschaft für Technische Zusammenarbeit (2005). *GTZ - Wildlife Programme Tanzania*. Dar es Salaam: Baldus, R.

Deutsche Gesellschaft für Technische Zusammenarbeit (2007). *Multi-stakeholder management: Tools for Stakeholder Analysis: 10 building blocks for designing participatory systems of cooperation*. Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit. Available on: http://www.gtz.de/de/dokumente/en-SVMP-Instrumente-Akteuersanalyse.pdf.

Dressler, W. and Roth, R. (2011). The Good, the Bad and the Contradictory: Neoliberal conservation governance in rural Southeast Asia. *World Development*, 39(5), 851-862.

Dryzek, J. S. (1997). *The Politics of the Earth: Environmental Discourses*. New York: Oxford University Press.

Ellis, F. and Mdoe, N. (2003). Livelihoods and Rural Poverty Reduction in Tanzania. *World Development*, 31(8), 1367-1384.

Escobar, A. (1996). Construction nature: Elements for a post-structuralist political ecology. *Futures*, 28(4), 325–343.

Ferguson, J. (2006). *Global shadows: Africa in the neoliberal world order*. Durham: Duke University Press.

Fino, D. and Rossier, D. *Conception et gestion de projeten développement - Exemples de présentation d'acteurs* [PowerPoint presentation]. Université de Lausanne.

Fletcher, R. (2010). Neoliberal environmentality: toward a poststructuralist political ecology of the conservation debate. *Conservation and Society*, 8(3), 171-181.

Ford Foundation (1998). *The evolving context of community-based natural resources management in Sub-Saharan Africa in historical perspective*. Washington, DC: Murombedzi, J.C.

Foucault, M. (1982). The subject and power. *Critical Inquiry*, 8(4), 777-795.

Foucault, M. (2004a). *Naissance de la biopolitique. Cours au Collège de France, 1978-1979*. Paris: Seuil/Gallimard.

Foucault, M. (2004b). *Sécurité, territoire et population. Cours au Collège de France, 1977-1978*. Paris: Seuil/Gallimard.

Fraser, N. (1981). Foucault on Modern Power: Empirical Insights and Normative Confusions. *PRAXIS International*, 3, 272-287.

Gutting, G. (2005). *Foucault: A Very Short Introduction*. UK: Oxford University Press.

Haas, P. M. (1992). Knowledge, Power, and International Policy Coordination - Introduction: Epistemic Communities and International Policy Coordination. *International Organization*, 46(1), 1-35.

Haesler, S. (2012). *Etude des savoirs écologiques traditionnels des apiculteurs Wakonongo, Mpanda, Rukwa, en vue d'une valorisation dans le cadre de la gestion moderne de l'apiculture en Tanzanie* (bachelor thesis, unpublished). University of Applied Sciences of Western Switzerland, Life Sciences Department, Sustainable use of natural resources.

Hakikazi Catalyst (2004). *A plain language guide to The United Republic of Tanzania's Land, Forest and Wildlife Laws and Policies.* Arusha: Hakikazi Catalyst.

Hardin, G. (1968). The tragedy of the commons. *Science*, 162, 1243–1248.

Hausser, Y. and Mpuya, P. (2004). Beekeeping in Tanzania: when the bees get out of the woods... an innovative cross-sectoral approach to community-based natural resources management. *Game and Wildlife Science,* 21(3), 291-312.

Hausser, Y., Weber, H. and Meyer, B. (2009). Bees, farmers, tourists and hunters: conflict dynamics around Western Tanzania protected areas. *Biodiversity Conservation*, 18(10), 2679-2703.

Heubach, K., Wittig, R., Ernst-August Nuppenau, E.-A. and Hahn, K. (2011). The economic importance of non-timber forest products (NTFPs) for livelihood maintenance of rural West African communities: A case study from northern Benin. *Ecological Economics*, 70 (11), 1991–2001.

Heynen, N. and Robbins, P. (2005). The Neoliberalization of Nature: Governance, Privatization, Enclosure and Valuation. *Capitalism, Nature, Socialism*, 16(1), 5-8.

Hoffmann, D.M. (2009). Institutional Legitimacy and co-management of a marine protected area: implementation lessons from the case of Xcalak Reefs National Park, Mexico. *Human Organization*, 68(1), 39-54.

Hurst, A. (2003). State Forestry and Spatial Scale in the Development Discourses of Post-Colonial Tanzania: 1961-1971. *The Geographical Journal*, 169(4), 358-369.

Igoe, J. and Brockington, D. (2007). Neoliberal conservation: a brief introduction. *Conservation and Society*, 5(4), 432-449.

Igoe, J. and Croutcher, B. (2007). Conservation, commerce, and communities: The story of community-based wildlife management areas in Tanzania's Northern tourist circuit. *Conservation and Society*, 5(4), 534-561.

International Council for Game and Wildlife Conservation (2004). *Tourist hunting and its role in development of Wildlife Management Areas in Tanzania.* Budapest: Baldus, R.D. and Cauldwell, A.E.

Inyonga Beekeepers Association (2013). *Model Bylaws for Inyonga Beekeepers Association 2013*. Inyonga: Inyonga Beekeepers Association (unpublished).

Jentoft, S. (2000). Legitimacy and Disappointment in Fisheries Management. *Marine Policy*, 24, 141-148.

Jones, B. and M. Murphree (2004). Community-based Natural Resource Management as a Conservation Mechanism: Lessons and Directions. In B. Child (ed.), *Parks in Transition: Biodiversity, Rural Development and the Bottom Line* (pp.63-103). London: Earthscan.

Kingdon, J. (2003). *Agendas, alternatives and public policies*. New York: Longman.

Larson, A.M. and Ribot, J.C. (2004). Democratic Decentralization through a Natural Resource Lens: An Introduction. *European Journal of Development Research*, 16(1), 1-25.

Law, G. (2013, January 18). *Statoids - Regions of Tanzania* [web page]. Available on: http://www.statoids.com/utz.html

Lawrence, R. (2003). «Participation citoyenne pour aménager l'habitat» in A. Da Cunha and J. Ruegg (eds), *Développement durable et aménagement du territoire*, pp. 331-345. Lausanne: PPUR.

Match Maker Associates Ltd. (2007). *Honey and Beeswax value chain analysis in Tanzania*. Dar es Salaam: Small and Medium Enterprise Competitiveness Facility and Traidcraft.

Montamat, H. (2007). Les aires protégées en Afrique. Conservation et Développement: quelle intégration? *Collection clio en Afrique, 22*. Aix-en-Provence: Centre d'étude des mondes africains, 90p.

Mpanda District Council (2008). *Information and communication technology strategic plan 2005/6-2007/8*. Mpanda: Bandissa, D.I. (unpublished).

National Bureau of Statistics (2007). *National Household Budget Survey*. Dar es Salaam: National Bureau of Statistics.

National Bureau of Statistics (NBS) (2002). *Tanzania national census 2002*. Dar es Salaam: National Bureau of Statistics.

Nel, E., Illigner, P.M., Wilkins, K. et Robertson, M.P. (2000). Rural Self-Reliance in Bondolfi, Zimbabwe: the role of beekeeping. *The Geographical Journal*, 166(1), 26-34.

Neumann, R. P. (2002). The postwar conservation boom in British colonial Africa. *Environmental History*, 7(1), 22-47.

Neumann, R. P. (1997). Forest rights, privileges and prohibitions: contextualizing state forestry policy in colonial Tanganyika. *Environment and History*, 3, 45-68.

Neumann, R. P. (2001). Africa's "Last Wilderness" reordering space for political and economic control in colonial Tanzania. *Africa*, 71(4), 641-665.

Neves, K. (2010). Cashing in on Cetourism: A Critical Ecological Engagement with Dominant E-NGO Discourses on Whaling, Cetacean Conservation, and Whale Watching. *Antipode*, 42(3), 719-741.

Nick, J. (1998). Foucault, Foucauldians and Sociology. *The British Journal of Sociology*, 49(3), 415-433.

Norwegian Agency for Development Cooperation (2006). *Management of Natural Resources Programme, Tanzania TAN-0092, Final Evaluation*. Oslo: Norwegian Agency for Development Cooperation.

Nshala, R. (1999). *Granting hunting blocks in Tanzania*. Dar es Salaam: Lawyers' Environmental Action Team.

Nyerere, J. (1967). The Arusha Declaration. Available on: http://www.marxists.org/subject/africa/nyerere/1967/arusha-declaration.htm.

Olivier de Sardan, J. P. (2009). Les huit modes de gouvernance locale en Afrique de l'Ouest. *Etudes et Travaux, 79*. Niamey and Paraku: Laboratoire d'études et recherches sur les dynamiques sociales et le développement local.

Park, M. and Yeo-Chang, Y. (2012). Traditional knowledge of Korean native beekeeping and sustainable forest management. *Forest Policy and Economics*, 15, 37–45.

Parnell, M.J.G. (2008). Agropolitan and bottom-up development. In V. Desai and R.B. Potter (Eds), *The companion to development studies* (pp.111-115). London: Hodder Education.

Peterson, M. J. (1992). Knowledge, Power, and International PolicyCoordination - Whalers, Cetologists, Environmentalists, and the International Management of Whaling. *International Organization*, 46(1), 147-186.

Rechenbach, C.W. 1968. *Swahili-English Dictionary. The Catholic University of America Press* [web page]. Available on: http://archive.org/stream/Swahili-englishDictionary/swa_eng_dict#page/n0/mode/2up.

RFI (2010, 19 April). *La Tanzanie accorde la nationalité à 162 000 réfugiés du Burundi* [web page]. Available on: http://www.rfi.fr/contenu/20100416-tanzanie-accorde-nationalite-162-000-refugies-burundi.

Ribot, J.C. (2006). Choose democracy: Environmentalists' socio-political responsibility. *Global Environmental Change*, 16, 115-119.

Ribot, J.C., Agrawal, A. and Larson, A.M. (2006). Recentralizing while decentralizing: how national governments reappropriate forest resources. *World Development*, 34(11), 1864-1886.

Robbins, P. (2004). *Political ecology: a critical introduction*. Blackwell Publishing.

Rodary, E. (2001). *Les espaces naturels: l'aménagement par la participation? Mise en réseau et territorialisation des politiques de conservation de la faune en Zambie et au Zimbabwe* (PhD Thesis, unpublished). Université d'Orléans, Institut de Recherche pour le Développement.

Rural Development Forestry Network (1993). *Beekeeping in the subsistence economy of the miombo savanna woodlands of South-Central Africa*. London: Rural Development Forestry Network.

Schabel, H.G. (1990). Tanganyika forestry under German colonial administration, 1891-1919. *Forest and Conservation History*, 34(3), 130-141.

Schattschneider, E. E. (1975). *The Semisovereign People*. Hinsdale: Dryden Press.

Schech, S. and Haggi, J. (2008). Culture and Developpment. In V. Desai, and R.B. Potter (Eds), *The companion to development studies* (pp.50-54). London: Hodder Education.

Schubert, J. (2005). Political Ecology in Development Research. NCCR North-South, IP 7 Environmental Change and Conflict Transformation, *IP 7 Working Paper*, 66p.

Sebenius, J. K. (1992). Knowledge, Power, and International Policy Coordination - Challenging Conventional Explanations of International Cooperation: Negotiation Analysis and the Case of Epistemic Communities. *International Organization*, 46(1), 323-365.

Siyame, P. (2012, 3 March). Tanzania: Katumba Refugees Ask for Naturalization. *Tanzania Daily News* [web page]. Available on: http://allafrica.com/stories/201203050079.html.

Songorwa, A., Bürhs, T. and Hughey, K. (2000). Community-Based Wildlife Management in Africa: A Critical Assessment of the Literature. *Natural Resources Journal*, 40(3), 603-643.

Sunseri, T. (2007). The Political Ecology of the Copal Trade in the Tanzanian Coastal Hinterland, c. 1820-1905. *The Journal of African History*, 48(2), 201-220.

Tanzania Big Game Safaris (date unknown). *Conservation Foundation (CF) Trust* [web page]. Available on: http://tanzaniabiggame.com/web-content/cf-trust.html#anti-poaching (consulted on June 12, 2013).

Tanzania Forest Service (2013). *TFS Overview* [web page]. Available on: http://tfs.go.tz/index.php/about-tfs/organization-overview.

Tanzania Natural Resources Forum (2006). *Wildlife management Areas in Tanzania*. Arusha: Nelson, F., Sulle, E. and Ndoipo, P.

Tanzania Wildlife Research Institute (2001). *The status of Tanzanian honey trade - Domestic and international markets*. Arusha: Mwakatobe, A. and Mlingwa, C.

Tanzania Wildlife Research Institute (2004). *Role of beekeeping in poverty alleviation: Market and marketing of bee products in Tanzania*. Arusha: Mwakatobe, A. and Mlingwa, C.

Tembo, M. D. (2003). *Assessing spatial information gaps: a decentralization perspective on district natural resources planning in Tanzania* (Master thesis). Enchede University, International institute for geoinformation science and earth observation.

The Beekeeping Act (June 2002). Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania, 51 p.

The Hunting Report (2012, February 9). *Tanzania Releases List of Concession Allocations* [web page]. Available on: http://www.huntingreport.com/worldupdate.cfm?articleid=587.

The Land Ordinance, No 3 (January 25, 1923).

The Ministry of Finance and Economic Affairs (2010). *National Strategy for Growth and Reduction of Poverty II*. Dar es Salaam Ministry of Finance and Economic Affairs.

The Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division (2011). *Memorandum of understanding between Forestry and Beekeeping Division and Inyonga Beekeepers Association*. Dar es Salaam: Ministry of Natural Resources and Tourism (unpublished).

The Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division (2010). *Tanzania position paper*. Dar es Salaam: Ministry of Natural Resources and Tourism (unpublished).

The Ministry of Natural Resources and Tourism (2001). *The National beekeeping Programme 2001-2010*. Dar es Salaam: The Ministry of Natural Resources and Tourism.

The Ministry of Natural Resources and Tourism (2008). *Support to the National Forest and Beekeeping Programme implementation Phase II, 2009-2011*. Dar es Salaam: The Ministry of Natural Resources and Tourism.

The National Beekeeping Policy (March 1998). Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania, 57 p.

The National Forest Policy (1998). Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania, 59 p.

The National Land Policy (1997). Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania, 42 p.

The National Park Act (1959). Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania, 25 p.

The Planning Commission and Regional Commissioner's Office (1998). *Rukwa region socio-economic profile*. Dar es Salaam: The Planning Commission and Regional Commissioner's Office.

The Secretariat of the Convention on Biological Diversity (2004). *Addis Ababa Principles and Guidelines*. Montreal: The Secretariat of the Convention on Biological Diversity.

The United Nations Research Institute for Social Development (1995). *Parks, People and Professionals: Putting `Participation' into Protected Area Management*. Geneva: Pimbert, M. P. and Pretty, J. N.

The Wildlife Conservation Act (February 2009). Ministry of Natural Resources and Tourism. Dar es Salaam, Tanzania, 92 p.

The Wildlife Policy of Tanzania (March 1998). Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania, 35 p.

The World Bank (1999). *Report from the International Workshop on Community-Based natural Resource Management (CBNRM), 10–14 May 1998*. Washington, DC: The World Bank. Available on: http://info.worldbank.org/etools/docs/library/97605/conatrem/conatrem/report.html (consulted on April, 07, 2013).

The World Bank (2007). *Growth Prospects for Rukwa Region : Constraints and Opportunities.* Washington: The World Bank.

Torquebiau, E. and Taylor, R.D. (2009). Natural resource management by rural citizens in developing countries: innovations still required. *Biodiversity Conservation*, 18, 2537-2550.

Turner, M.D. (2004). Political ecology and the moral dimensions of "resource conflicts": the case of farmer-herder conflicts in Sahel. *Political Geography,* 23, 863-889.

United Nations (1992). Convention on Biological Diversity, 28p.

United Republic of Tanzania (1995). *The Tanzania Development Vision 2025*. Dar es Salaam: Government Printer.

United Republic of Tanzania (2005). *National Strategy for Growth and Reduction of Poverty (NSGRP).* Dar es Salaam: Government Printer.

United Republic of Tanzania (2005b). *Decentralization for service delivery in Tanzania*. Dar es Salaam: Government Printer.

United Republic of Tanzania (2007). *National Sample Census of Agriculture 2002-2003, Vol 5 Regional report Rukwa region*. Dar es Salaam: Government Printer.

United Republic of Tanzania (2012). *2012 Population and housing census*. Dar es Salaam: Government Printer.

United Republic of Tanzania (2013). *History* [web page]. Available on: http://www.tanzania.go.tz/historyf.html (consulted on February 19, 2013).

Varet, C. (2006). *Etude d'un projet de gestion communautaire: Mise en place du plan de gestion de la Beekeeping Zone d'Inyonga* (master thesis, unpublished). Université de Gap, Institut d'aménagement et développement territorial.

Wanitzek, U. and Sippel, H. (1998). Land rights and conservation areas in Tanzania. *Geojournal*, 46, p.113-128.

Watterson, G.G. (1961). La conférence d'Arusha sur la conservation de la nature. *Unasylva*, 15(4).

Watts, M.J. (2000). Contested Communities, Malignant Markets. In In C. Zerner (Ed), *People, Plants, and Justice* (pp.21-51). New York: Columbia University Press.

Weber, H. (2006). *Classement de la Bee Reserve d'Inyonga, Tanzanie, et établissement d'un plan de gestion* (bachelor thesis, unpublished). University of Applied Sciences of Western Switzerland, Life Sciences Department, Sustainable use of natural resources.

Wild Footprints Limited (2012). *Hunting Tanzania* [web page]. Available on: http://www.wild-footprints.com

Willem te Velde, D. (2008). Pro-poor globalization. In V. Desai and R.B. Potter (Eds), *The companion to development studies* (pp.206-212). London: Hodder Education.

World Database on Protected Areas (2013). *Protected Planet* [web page]. Available on: http://www.wdpa.org/Default.aspx (consulted on May 23, 2013).

Yin, R. K. (2003). *Case Study Research - Design and Methods*. New Delhi: Sage Publications.

Ylhäisi, J. (2003). Forest privatisation and the role of community in forest and nature protection in Tanzania. *Environmental Science & Policy,* 6, 279-290. doi: 10.1016/S1462-9011(03)00043-1.

LIST OF ANNEXES

Annex 1: Interview guide

Name :	
Function at ADAP :	
Could you describe the ADAP?	

How did Inyonga villagers access Mlele Hills Forest Reserve before the implementation of the Beekeeping Zone? - Did they need a permit and if yes, where did they get it? - What issues were they facing at that time? - How were the revenues from permits and fines allocated between the MNRT-FBD, the district and the village councils?
Why was the Joint Forest Management Agreement (MNRT-FBD, IBA, and Villages Councils) preferred to the Joint Bee Reserve Management Agreement (District Council, IBA, and Village Councils)?
Today, do IBA receive these revenues? And where are the revenues from the ecotourism allocated? How is the benefits distribution ensured?
How would you describe the relationships between: - IBA and MNRT - IBA and the trophy hunting company - IBA and the Village Councils How can you explain that ADAP does not succeed to play a mediation role between the stakeholders?
Is there collaboration between the VGS and the trophy hunting company's game scouts? Does this collaboration present an opportunity to modify relationships between these two units?
According to you, what are : - ADAP's objectives concerning the management of the Beekeeping Zone? - IBA's objectives concerning the management of the Beekeeping Zone?
According to you, why did IBA try to form an alliance with ADAP?
Which alliances do you consider IBA linked with other stakeholders, and do you think these alliances could provide the association with technical, financial or mediation support?
According to you, who has the legitimacy to manage the Beekeeping Zone (IBA, ADAP, the village councils, the district council, the MNRT-FBD, the MNRT-WD, the trophy hunting company, other stakeholder)? Which definition would you give for « legitimacy » in that case?
How do you explain the absence of the Village Councils in the 2011 MoU, while they are in charge of submitting the demands for BKZ gazetting?
Has a MoU been signed by all stakeholder before the MoU of 2011?
The primary idea was to create a Bee Reserve; finally a BKZ has been implemented, why?

How did the CBNRM initiative start in Inyonga at the beginning of the 2000'? How did the beekeepers enter in contact with ADAP? How did the association learned about the possibility to create a Bee Reserve?

How was "the local community" defined? Who defined the "community needs"?
Do you think the ADAP project promote local democracy and allow to socialize groups, which have been previously excluded? Do you think some groups are excluded now from the participatory process?
Who is IBA today? Do you think some beekeepers are excluded from the BKZ by a lack of proper knowledge regarding modern beekeeping techniques or proper material? Or do you think some beekeepers can be excluded in the future?
Do you think IBA is downwardly accountable?
Which agreement was concluded with the trophy hunting company for the planning of use of the Beekeeping Zone?
Why the Inyonga Division Board Committee has never be implemented?

ADAP statuses present conservationists objectives (strengthening of the institutional framework and services in charge of anti-poaching repression, privatization and profit-making of protected areas). Do you consider it still appropriate regarding the activities you are conducting now?
Who wanted the creation of a VGS team? Was it a legal requirement for the implementation of the Beekeeping Zone or a will from ADAP?
According to you, which role ecotourism is playing in a project like the one in Inyonga?
According to you, is ADAP instrumentalized/used/exploited by a stakeholder, and if yes, by whom and for what purpose?
Did you once planned to implement a sustainable wood exploitation project as it was a local demand and could have an important impact at local level, more than 90% of the population depending on this source of energy?

Annex 2: Memorandum of Understanding between The Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism and Inyonga Beekeepers Association

MEMORANDUM OF UNDERSTANDING BETWEEN FORESTRY AND BEEKEEPING DIVISION AND INYONGA BEEKEEPERS ASSOCIATION

PREAMBLE:

This Memorandum of Understanding (MOU) is made between Forestry and Beekeeping Division and the Inyonga Beekeepers Association.

At the time of execution of this MOU, on one hand, Forestry and Beekeeping Division with a mandate to manage Mlele Hill Forest reserve (mpanda) has entered into agreement with Inyonga Beekeepers Association, on the other hand with a mandate to carry out Beekeeping activities for development and sustainable use of forest plants in the reserve as income generation to the Local Beekeepers.

A. The objective of MoU

The primary **objective of** this **MOU** is to establish a Beekeeping zone which will be the main source of bee breeding materials, source of Package Colonies for both stinging and stingless honeybees, enhance conservation of biodiversity of honeybees and for the production of bee products.

B. This MOU therefore declares and commits Forestry and Beekeeping Division and Inyonga Beekeepers Association as follows:

a. Forestry and Beekeeping Division and Inyonga Beekeepers Association agree to this MOU to take effect forthwith upon it signing.
b. This MOU is made to secure and cement solidarity and partnership between Forestry and Beekeeping Division and Inyonga Beekeepers Association based on values of mutual trust, honesty integrity, transparency and good governance.
c. This MUO is made in utmost good faith and trust between Forestry and Beekeeping Division and Inyonga Beekeepers Association with the common objective of proper management of forestry and beekeeping resources.

Article 1: TITLE OF AGREEMENT

Memorandum of Understanding (MoU) between the Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism and Inyonga Beekeepers Association.

Article 2: PHILOSOPHY OF THE AGREEMENT

A. Forestry and Beekeeping Division shall:

a. Provide technical support to Iyonga Beekeepers Association.
b. Monitor beekeeping activities conducted by Inyonga Beekeepers Association in the forest reserve.
c. Maintain open links of communication during the life of this MoU.
d. Monitor contract compliance and advice accordingly.
e. In case the terms of MoU are not being fulfilled FBD may terminate without compensation and assume its management until the other party commits in writing to adhere to the terms and conditions of the MoU.

B. Inyonga Beekeepers Association shall:

a. Manage beekeeping zone in accordance with beekeeping Act No. 15 of 2002 and Beekeeping regulations of 2005.
b. Abolish unregulated exploitation of forest Biodiversity especially the rare, irreplaceable species of plants and those threatened by overexploitation especially those of beekeeping, ecological and economical values.
c. Protect, conserve and development of the forest bio-genetic resources,
d. Plant /gap planting of indigenous plant/tree species with Beekeeping values.
e. Ensure sustainable existence of honeybees by maintaining and effectively apply appropriate beekeeping techniques and methods.
f. Cooperate with Forest and Beekeeping Division in the management and sustainable utilization of genetic resources.
g. Work hard to improve quality and quantity of honey, beeswax and other bee products and ensure sustainable supply of the same;
h. Provide services as demonstration centre for Beekeeping activities.
i. Make this zone as a source of bee breeding materials, source of Package Colonies for both stinging and stingless honeybees, enhance conservation of biodiversity of honeybees and production of bee products
j. Perform regulated eco tourism without compromising to the environment

k. Allow researchers, trainers to conduct research and training in the beekeeping zone.
l. Submit two progressive reports per year to the Director of Forestry and Beekeeping, one in early July and the other in Early January.

C. Start and End of MoU

This MoU is valid for a period of .....years

MoU will commence on .....after being signed by the two parties to the MoU or their representatives.

MoU will be terminated on ..... or incase one party intends to do so or terms of the MoU are not being fulfilled by either of parties.

D. Administration of MoU

The points of contact responsible for administration of this memorandum of understanding are:

F BD:
Dr Fellician Kilahama
Director of Forestry and Beekeeping Division
P. O. Box 426
Dar Es Salaam
+255 22 2864249 (Tel.)
+255 22 2864255 (Fax)

IBA:
Noel F. Malilo
Chair man
P. O. Box ....
Mpanda
+255 754.....

E: Dispute resolution:

In case there is a dispute the two parties should find way to resolve it amicably. If agreement is not reached the matter should be referred to the Minister responsible for Forestry and Beekeeping whose decision is final.

F: Termination of Mou

This memorandum shall remain in effect until terminated by either party upon 60 days notice to the other party. In the event of termination, however, this agreement shall continue to apply to all ongoing proceedings covered by the agreement.

Dr Felician Kilahama	Mr Noel F. Malilo
.....	.....
Signature and Date	Signature and Date
Director	Chairperson
Forest and Beekeeping Division	Inyonga Beekeeping Association
P. O. Box 426 Dar Es Salaam	P. O. Box ..... Mpanda

(source: Inyonga Beekeepers Association, 2013)

Annex 3: Hunting blocks allocation

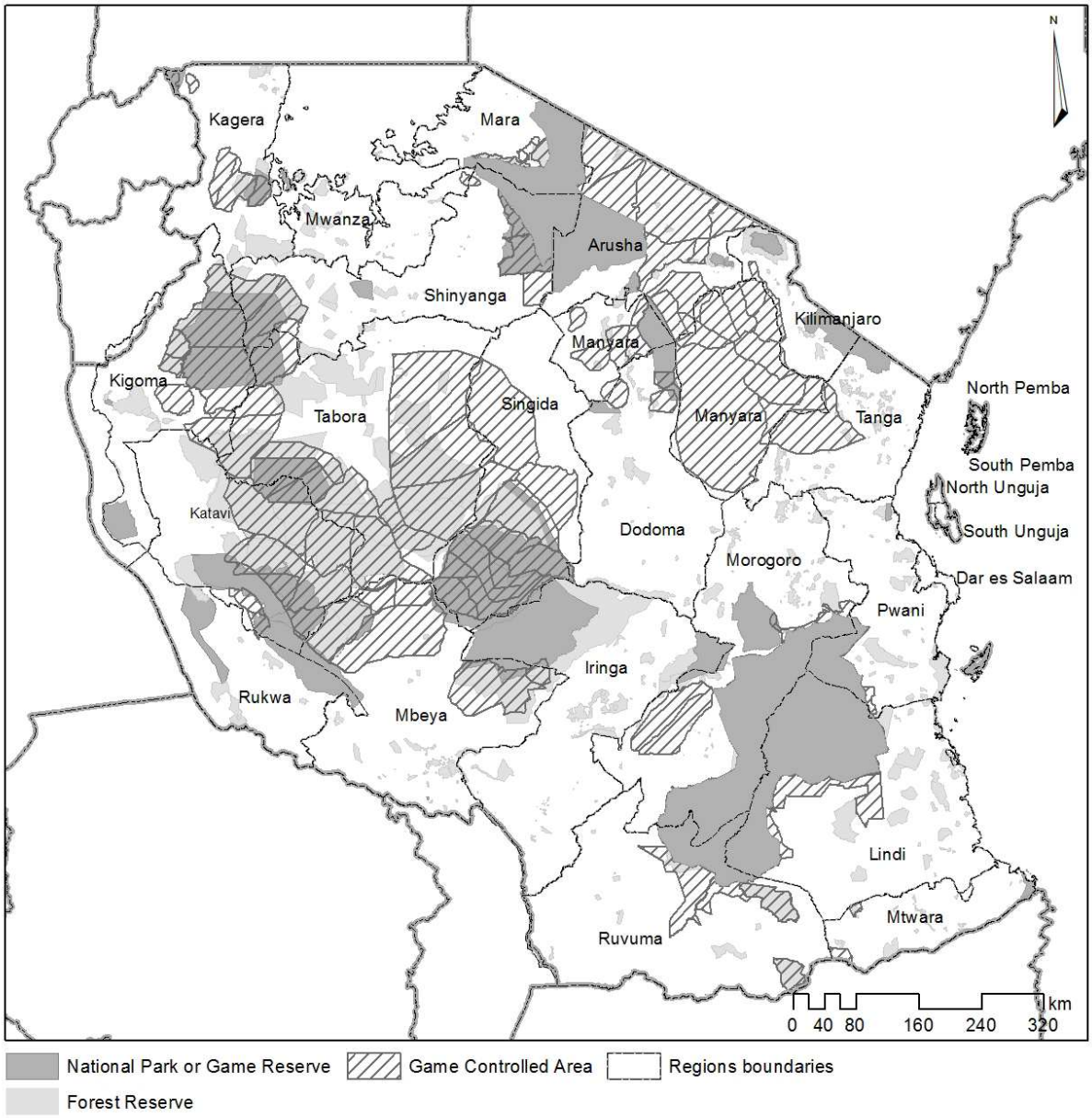
Hunting Company	Concessions Allocated
African Trophy Hunting Safaris Ltd	Selous GR K5
	Selous GR U1
Bartlette Safari Corporation Ltd	Selous GR MT2
	Selous GR LL1
	Selous GR MHJ2
	Selous GR MHJ1
Bushman Hunting Safaris (T)Ltd	Selous GR MHJ3
	Maswa GR (N)
	Rungwa Rungwa GR (E)
Game Frontiers of Tanzania Ltd	Moyowosi/Njingwe GR 2
	Rungwa River GCA
	Ituru Forest/Open Area
	Ugalla GR (E)
Gerald Pasanisi Safari Corp	Selous GR MB3
	Selous GR MT1
	Selous GR ML1
	Selous GR LU8
	Selous GR LL2
Kiboko Hunting Safaris Ltd	Selous GR Block K1
	Selous GR Block K2
Kilimanjaro Game Trails Limited	Burigi GR (W)
Kilombero North Safaris Limited	Selous GR LU1 - LU2
	Kilombero GCA-Mlimba
	Lake Natron GCA (S)
Luke Samaras Ltd	Selous GR MS1
	Selous GR U4
	Selous GR LR 1
	Selous GR LR 2
Malagarasi Hunting Safaris	Inyonga GCA (E)
	Selous GR L1
Masailand Hunting Co. Ltd	Selous GR LU4-K3
	Selous GR IHI
Miombo Safaris Ltd	Selous GR R3
	Rungwa Mpera GR
	Lukwika/Lumesule GR
	Msanjesi GR
	Kipilimbi, Lihonja FR
Mwanauta & Co. Ltd	Rungwa Mwamagembe GR
Northern Hunting Enterprises Ltd	Burigi GR (E)
	Rungwa Inyonga GR
	Biharamulo GR
	Lwafi GR - Nkamba FR
Old Nyika Safaris Ltd	Chunya Lukwati Open Area
	Piti (W) Open Area
	Chunya Msami Open Area
Orttelo Business Corp. Ltd	Loliondo GCA
Pori Trackers of Africa	Selous GR LR3
	Selous GR M2
Robin Hurt Safaris (T). Ltd	Luganzo GCA
	Mlele GCA (S)

	Burko Open Area
	Rungwa Open Area (S)
Tanzania Game Trackers Safaris Ltd	Ugalla GR (S)
	Moyowosi-Njigiwe GR1
	Maswa Kimali GR
	Ugalla GR (N)
	Maswa Mbono GR
Tanzania Wildlife Co. Ltd	Selous GR U3
	Selous GR MA 1
	Rungwa Ikili GR
Traditional African Safaris Ltd	Irkishbor
	Selous GR LU3
Grumet Reserves (T) Ltd	Grumeti GR
	Ikorongo GR
Wengert Windrose Safaris (T) Ltd	Moyowosi GR (S)
	Lake Natron G.C.A (N-South)
Western Frontiers (T) Ltd	Piti O.A. (E)
	Selous GR R4
	Mtungwe O. A. (Central)
Wild Footprint Ltd	Mlele GCA (N)
	Kizigo GR (W)
Marera Safari Lodge & Tours	Muhesi GR (W)
	Rungwa Rungwa GR (W)
Bunda Safaris Ltd	Mahenge Open Area North
	Kilwa Open Area North
	Ruvuma Open Area
	Mahenge Open Area (South)
	Mwatisi O.A. (N) - Furua O.A.
Siafu Safaris Ltd	Gombe GCA
SNF Hunting Safaris Ltd	Landanai GCA
Fereck Safaris Ltd	Selous GR N2
	Kitwai GCA (SW)
	Selous R MB4
Eshkesh Safaris Ltd	Masai Open Area (E)
Coastal Sable Safaris Ltd	Masai Open Area (S)
Wembere Hunting Safaris Ltd	Ruhudji/Ifinga Open Area
	Rungwa North Open Area
	Handeni GCA
	Ngaserai Open Area
Maully Tours & Safaris Ltd	Ugalla Niensi
	Makere FR - Uvinza O.A.
	Ugalla O.A. (North-East)
	Ugalla O.A. (North-West)
Mkwawa Hunting Safaris (T) Ltd	Selous GR R1
	Selous GR M1
	Chunya Open Area (E)
	Selous GR K4
Green Leaf Ltd	Lake Rukwa GCA
	Selous GR U2
Giant Hunting Club Ltd	Kilwa O.A. (South)
Mwatisi Safaris Ltd	Msima GCA (W)
	Rungwa-Mzombe Open Area
	Kitwai GCA (SE)

African Buffalo Safaris Trackers Ltd	Kizigo GR (E) - 2
	Kigosi GR (S)
	Mto wa mbu GCA
Melami Hunting Safaris Ltd	Simanjiro Kitiangare GCA
	Muhuwesi GCA
EBN Hunting Safaris Ltd	Kizigo GR (E) - 1
Tanza Guides Ltd	Kitwai GCA (N)
Said Kawawa Hunting Safaris Ltd	Mwatisi O.A. (S)
	Ibanda Rumanyika GR
Safari Club (T) Ltd	Kilwa O.A. (S) - Mbwemkuru
	Kilwa O.A. (S) - Nakiu
Tandala Hunting Safaris Ltd	Mwambesi G.C.A
	Inyonga G.C.A (C)
	Msima G.C.A (E)
Tanganyika Game Fishing & Photographic Safaris Ltd	Selous GR LU5
Tanganyika Wildlife Safari Corporation	Selous GR LU6
	Selous GR MB2
	Selous GR MB1
	Selous GR LU7
	Selous GR N1
Tanzania Bundu Safaris Ltd	Mkungunero GR
	Lolkisale GCA
	Masai OA (W)
HSK Safaris Co. Ltd	Simanjiro GCA (W)
Go Wild Hunting Safaris Ltd	Lunda Mkwambi GCA (N)
East African Trophy Hunter Ltd	Kigosi (C)
Z.H. Poppe Ltd	Kigosi GR (E)
Royal Frontiers Of (T) Ltd	Moyowosi GR (N)
	Inyonga G.C.A (W)
	Selous GR R2
	Talamai O.A.
Rungwa Game Safaris (T) Ltd	Moyowosi-Njingwe GR 3
	Wembere GCA (S)
Safari Royal Holding Ltd	Lukwati GR (N
Muhesi Safaris Ltd	Muhesi GR (E)
	Monduli Juu Open Area
Palahala Safaris & Hunting Ltd	Kizigo GR (C)
	Wembere Open Area (Centra 2)
Out of Africa Co. Ltd	Kilombero GCA (S)-B/Ulanga
Michel Mantheakis Safaris Ltd	Lake Natron GCA (South-West)
	Lukwati GR (S)
Green Miles Co. Ltd	Selous GR MK1
	Lake Natron GCA (North)

(source: The Hunting Report, 2012)

Annex 4: Tanzania protected areas, current situation



(source: TZA_Census02, Population and Housing Census, 2002, National Bureau of Statistics, Tanzania; IUCN - WDPA)

Annex 5: Honey and beeswax export: period 2005-2009

Product	2005 Tons	2006 Tons	2007 Tons	2008 Tons	2009 Tons
Natural honey	43.67	325.73	156.01	612.96	485.84
Beeswax,	481.71	364.53	320.66	580.15	556.00

(source: The Ministry of Natural Resources and Tourism - Forestry and Beekeeping Division, 2010)