Working Paper

Challenges and opportunities for collaborative landscape governance in the East Usambara Mountains, Tanzania

Salla Rantala, Emmanuel Lyimo, Bronwen Powell,
Aichi Kitalyi and Heini Vihemäki

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Abstract

This study aimed to understand how governance of natural resources works at local and district levels in the East Usambara Mountains, Tanzania, in order to strengthen collaboration among the different actors involved and levels of governance. The study was part of the global research and development project, 'Integrating Livelihoods and Multiple Biodiversity Values in Landscape Mosaics'. The findings suggest that in this landscape, the existing formal governance framework provides a relatively conducive setting for promoting negotiated, collaborative landscape governance, especially at the village level. In spite of the positive experiences gained during the Landscape Mosaics project regarding involvement of local people in efforts to improve natural resource management, the sustainability of these activities and the scope of impacts remain to be seen, being conditioned by several other factors. We also identify challenges to collaborative landscape management in the existing governance structures, including inadequate funding and capacity within the agencies supposed to coordinate and facilitate natural resource management in this landscape.

Key words

Collaborative governance, landscape, natural resource management, Tanzania

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Contents

1. Introduction 1
2. Formal levels of government in Tanzania 5
3. Stakeholders 8
3.1 Landscape level 8
3.2 Village level 14
4. Institutions and practices in the governance of natural resources 21
4.1 Land 21
4.2 Forest resources 27
5. Links between governing bodies at local and district Levels 43
6. Cases that bring regulations to life 50
6.1 *Msambu* as a locally important commercial and well-managed species 50
6.2 *Mchunga* as a species central to local subsistence 51
6.3 Pest species – *nguruwe* and *kima* 52
6.4 *Mvule* – a locally endangered species 54
7. Local management of environmental and cultural services 55
7.1 Customary management of environmental and cultural services 55
7.2 Enhancing local management of water services through participatory action research 59
8. Conclusion 63

Appendix 1. Governance theme cross-site study 65
Appendix 2. An example of the operation of local government structures at the village level 68
Appendix 3. Traditional stories on bush pig and *mvule* tree recorded in the study area 69
References 71

Abbreviations

ANR	Amani Nature Reserve
CBFM	Community-Based Forest Management
CIFOR	Centre for International Forestry Research
EAMF	Eastern Arc Mountain Forests
EUCAMP	East Usambara Conservation Area Management Program
EUTCO	East Usambara Tea Company
FBD	Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism
ICRAF	World Agroforestry Centre
JFM	Joint Forest Management
LGA	Local Government Authority
MAB	Man and Biosphere Reserve
PAR	Participatory Action Research
PFM	Participatory Forest Management
SACCO	Savings and Credit Cooperative
TADAT	Tanga Dairy Trust
TANESCO	Tanzania Electric Supply Company Ltd
TASAF	Tanzania Social Action Fund
TFCG	Tanzania Forest Conservation Group
TSH	Tanzania shilling
VFR	Village Land Forest Reserve
WWF	World Wide Fund for Nature

1. Introduction

As the world's tropical and sub-tropical forests rapidly disappear and become increasingly fragmented, conservation efforts have focused on establishing protected areas to conserve these key ecosystems that support a diverse array of flora and fauna. More recently, conservationists and scientists have observed that protected areas are necessary but not sufficient for the conservation of biodiversity. In this context, the role of multifunctional landscape mosaics, especially those surrounding protected areas, has become increasingly important.

These landscapes include everything from agricultural land, plantations, agroforests and settlements to patches of remaining forest dotting the terrain. The landscapes are multifunctional as they support a wide range of environmental services and provide subsistence and income to local people more widely. What has shaped, and continues to shape, these mosaics are human activities, most commonly communities who are driven by their needs to sustain their livelihoods often in the face of poverty. To varying degrees, the communities and groups of people inhabiting the landscapes rely on forests, and the plants and animals within, for food, medicine, firewood, building materials and other life-essentials. As a consequence, local communities can play an integral role in the conservation of forest biodiversity and the sustainable use of forest products.

Previous research and experiences from conservation projects have shown that it is necessary to engage local communities in forest conservation rather than exclude them. Research undertaken by the Centre for International Forestry Research (CIFOR) and the World Agroforestry Centre (ICRAF) amongst others, has shown that in order to elicit the participation of local communities, it is necessary to allow them to determine the future of their landscape that is both sustainable and beneficial to them. These futures cannot exist in isolation: they must be negotiated with different levels of government and their institutions, along with other stakeholders that have an interest in the use of the landscape, such as private companies and NGOs.

The purpose of this study was to understand how governance of natural resources works at local and district levels, in order to strengthen collaboration between the actors and institutions at these levels. It was carried out as part of the 'Landscape Governance' domain of the global research and development project, 'Integrating Livelihoods and Multiple Biodiversity Values in Landscape Mosaics' (i.e. 'Landscape Mosaics project') in the East Usambara Mountains, Tanzania. The main purpose of the project was to

understand how a combination of action and empirical research could contribute to improving both the livelihoods of local communities and the conservation and sustainable use of forest resources in the landscape. At the same time, we aimed to catalyze collective action among the different actors towards negotiated, collaborative landscape governance. Hence, the activities included both more 'traditional' empirical research on natural resource governance and stakeholders, as well as Participatory Action Research (PAR) around governance issues identified as important by the stakeholders.

The East Usambara Mountains are one of five study landscapes of the project, which is part of a joint initiative of CIFOR and ICRAF, the CIFOR-ICRAF Biodiversity Platform. The multidisciplinary research activities, including PAR, were carried out at the East Usambara site in partnership with the Tanzania Forest Conservation Group, World Agroforestry Centre, Muheza district, World Wide Fund for Nature – Tanzania and three participating communities: Misalai, Shambangeda and Kwatango villages.

The East Usambara Mountains lie within Tanga region, in the northeastern part of Tanzania. Administratively, the East Usambaras fall within three districts: Muheza, Mkinga and Korogwe. These districts in turn are divided into wards, each consisting of several villages (Figure 1). The study villages are all located within Muheza district; Misalai and Shambangeda in the Misalai ward and Kwatango in Misozwe ward. The East Usambara site is very diverse in terms of flora and fauna, land use and culture. It is one of the world's biodiversity hotspots and home to several endemic species of vertebrates, invertebrates, trees, shrubs and herbs. Presently, the total population is estimated to be more than 130,000 (Hokkanen 2002, TFCG 2008). In most villages, the population today consists of people originating from numerous ethnic groups including the dominant Shambaa, who are among the long-term inhabitants of the Usambara Mountains, as well as people from other ethnic groups. Governance of this diverse landscape needs to carefully balance the endeavours to conserve the unique biodiversity and the livelihood needs of a growing population.

This report summarizes the results of a number of research activities carried out to understand the existing patterns of natural resource governance in the study area, and the challenges of and opportunities for integrating biological and livelihood values in the governance of natural resources. These issues were approached by analysing the relationships and roles of different stakeholders and institutions in resource use and control. Particular focus was on the relationship between policy objectives, laws and guidelines pertaining to land and forest vis-à-vis real-life practices of resource governance.

The report also includes a short narrative on the early experiences from the Participatory Action Research component of the project.

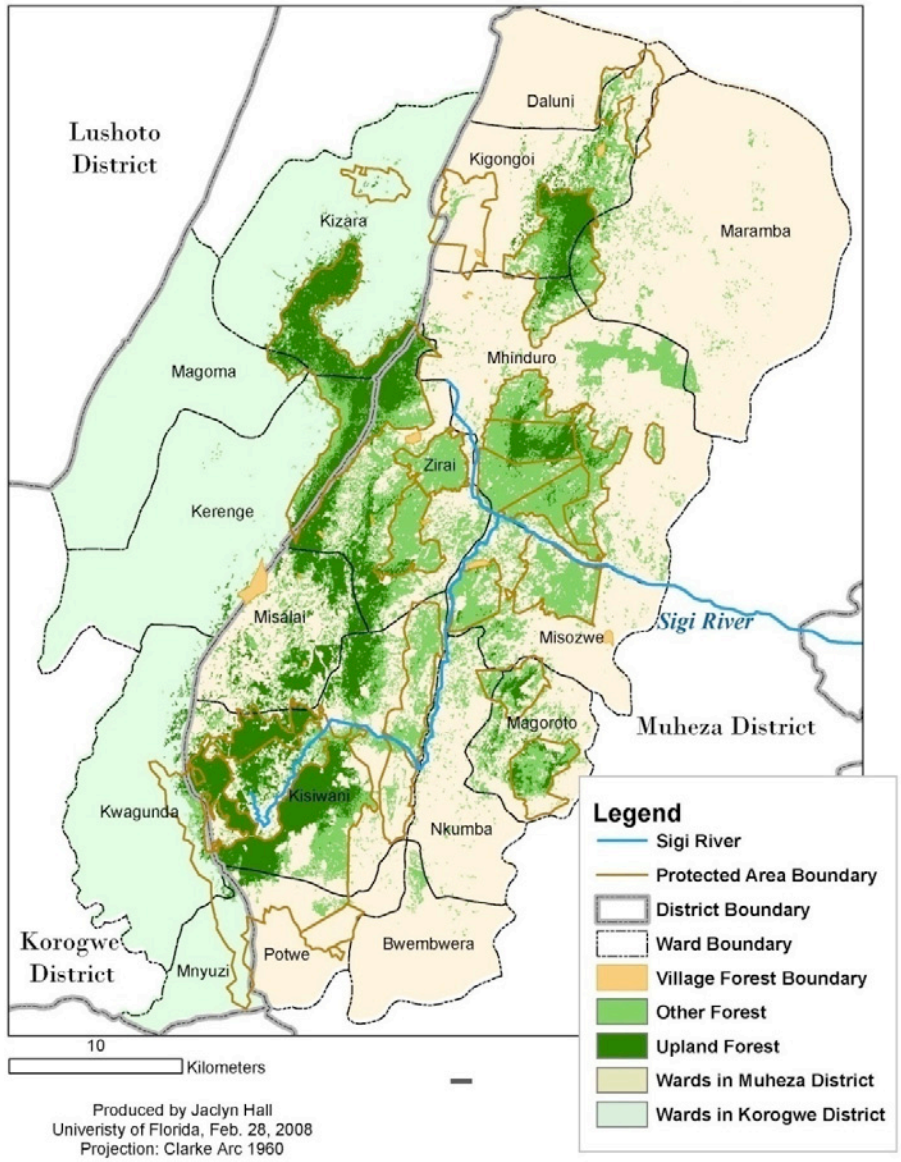

Fig. 1: Districts and wards of the East Usambara landscape. Mkinga district, separated from Muheza on the north side of the district in 2007, is not indicated on the map. The boundary between Muheza and Mkinga runs along the Sigi River so that Mhinduro ward north of the river belongs to Mkinga

The report follows the cross-site structure designed for the Landscape Mosaics project for governance studies (Appendix 1). The governance studies aimed to address the following overall research questions:

Empirical research

1. What are current governance arrangements at local and district levels and how do they influence the ability to reconcile diverse stakeholder interests as well as livelihoods and biodiversity conservation?

Action research

2. Which governance innovations (process and outcome) are effective in reconciling diverse stakeholder interests as well as livelihoods and biodiversity conservation?

The methods used included:

- A project inception workshop that drew participants from the local government, forest authorities at district and regional level, private sector, representative groups of farming communities, NGOs, available academics and some national-level representatives of relevant organizations.
- Visioning exercises at landscape and village levels to identify different stakeholders' visions for desirable landscape management and set goals for Participatory Action Research.
- A selection of ethnographic and participatory appraisal methods, including participant observation in village meetings, focus group discussions, participatory mapping and transect walks, and key informant interviews.
- A household survey carried out among a randomly sampled minimum of 40 households in each of the three study villages.

This report is best used as reference material for readers specifically interested in experiences of natural resource governance in the East Usambaras as it documents a wealth of information that is rather context specific. First, the structure of government and relationships between its different levels in Tanzania is described to set the formal frames of natural resource governance. Next, the stakeholders, the various values they assign to the elements of the landscape and their perceptions on existing governance patterns, and challenges in them, are described. The policies and rules regulating the use of land and forests are then explored in more detail, and contrasted with the observed practices of governance in the study villages. The relationships, e.g. forms of co-operation and conflicts, between the village and district level stakeholders and bodies in the management of land and forests are further discussed in the next section. Additionally, examples of management of a few locally important plant and animal species are provided to 'bring regulations into life', as well as insights into the customary ways of managing specific

resources in the East Usambara landscape. Then, the Landscape Mosaics project's experiences from facilitating local management of water services are reflected upon. In the end we draw some conclusions addressing the overall research questions of the governance component of the Landscape Mosaics project.

2. Formal levels of government in Tanzania

The formal government system of the United Republic of Tanzania is regulated by a number of legal instruments, which have gone through a major reform process during the past decades. The reforms are informed by national vision of political devolution and decentralization (Mniwasa and Shauri 2001). The Local Government Authority (District and Urban) Act of 1982 and the 2000 Local Government Reform Program are the main institutional instruments regulating formal levels of government. Table 1 shows the four dimensions of the local government reform by decentralization.

Table 1: Four dimensions of Local Government Reform

Political decentralization	*Political decentralization* is devolution of powers to locally elected councils and committees and the integration of previously centralized or de-concentrated service sectors into a holistic local government system with local councils in the most important local political bodies.
Financial decentralization	*Financial decentralization* is based on a combination of discretionary powers of Local Government Authorities (LGAs) to levy taxes, to pass their own budget based on local priorities within broad national polices and the obligation of central governments to provide adequate and equitable grants to attain national standards of service delivery.
Administrative decentralization	*Administrative decentralization* involves a de-linking of local authority staff from the respective ministries, making them accountable to the LGA who is their employer, fully responsible for all human resource management matters.
Changed central government - local government relations	Through *changed central government – local government relations,* the role of central government ministries is shifted from one of control to that of policy making, regulating, supporting and monitoring to ensure quality of services in line with national policies and standards.

Source: PMO-RALG (2005, 2-3)

There are two main levels of government in Tanzania. The Central Government comprises the ministries (including a Minister responsible for Local Government) and Department Agencies, whereas the Local Government Authorities (LGAs) constitute the governance units from district to village level (Figure 2). Between the Central and Local Government bodies is the Regional Government, a regional tier of the Central Government. This body is charged with policy interpretation, advice, coordination, monitoring, enforcement and creation of an enabling environment.

Depending on the size of the villages there are smaller units, *vitongoji/mtaa*, or sub-villages, which usually have around 100 households. Decision-making bodies at the village level include the Village Assembly, comprising all villagers above 18 years, and the Village Council, made up of chairpersons from each sub-village plus members elected by the Village Assembly to form the minimum 15 and maximum 25-member Council[1]. The main function of the Village Council is to oversee planning of development activities and encourage all inhabitants to participate in community activities. Development Committees facilitate the work of the Village Council. Chairpersons of the Village Councils sit in the Ward Development Council, which is responsible for general development plans for the ward, disaster management and ward level environmental activities. The central decision-making body at the district level is the District Council, which draws members from each ward, as well as Members of Parliament in the district. Appendix 2 provides an example of operations of formal governance structures at village level in the East Usambaras.

Relationships between the different levels are administrative, technical and/or consultative or advisory in nature. The Local Government is autonomous from the Central Government but subordinate to the Parliament. An early review of the impacts of decentralization on natural resource management highlighted three major weaknesses: the autonomy of the Local Government was grossly undermined by the lack of an explicit institutional mandate and legal framework for control and management of natural resources; unfair sharing of revenues collected by Local Government authorities; and lack of capacity at local level (Mniwasa and Shauri 2001). However, since the review, new institutional reforms have been implemented, and the legal framework for decentralized natural resource control has been strengthened.

[1] The term 'village government' is sometimes used to refer to Village Council in everyday conversation. However, this colloquial name does not represent any other formal government structure.

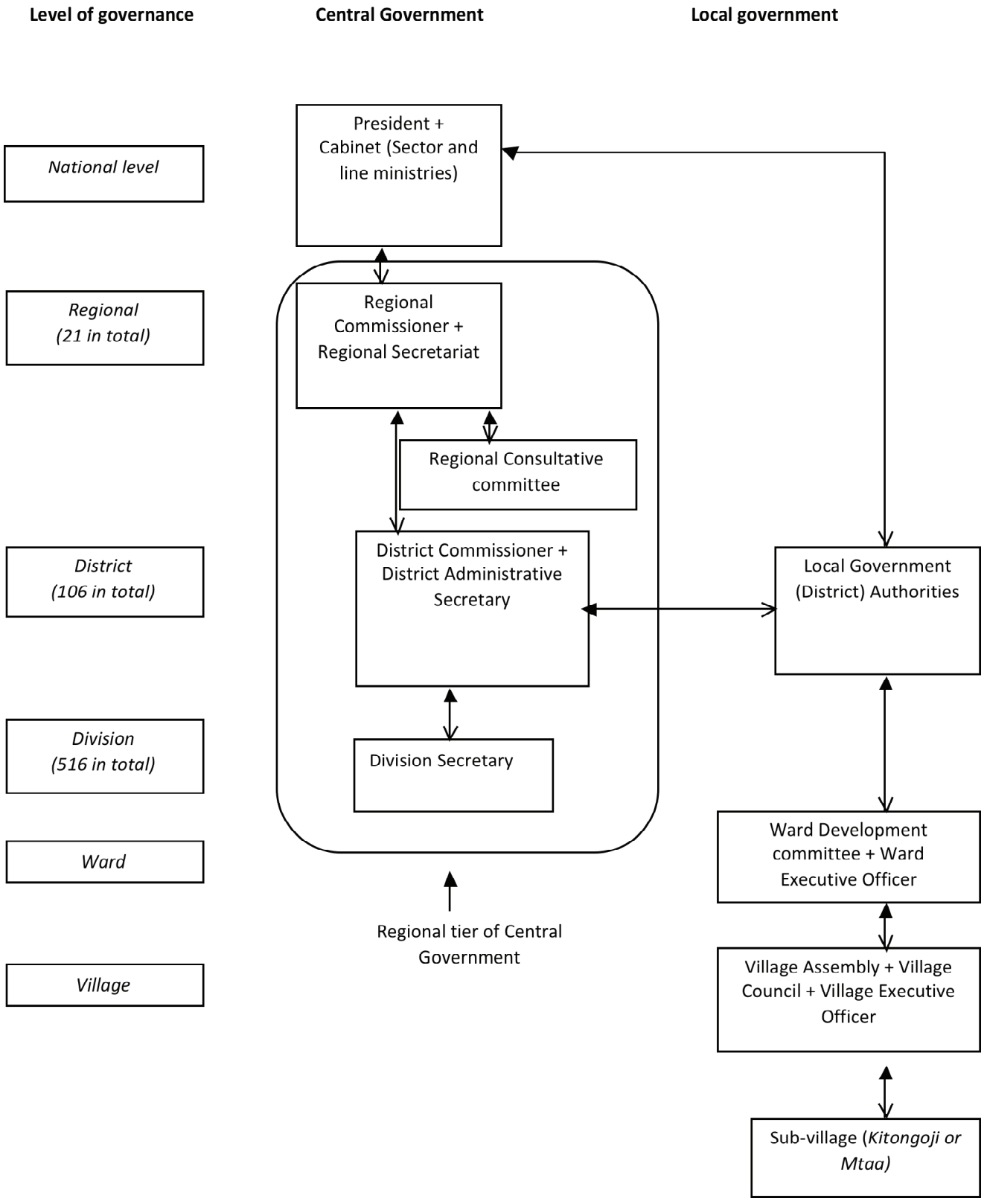

Fig. 2: Governance and administrative structure in Tanzania's Mainland (URT President's Office 2002b)

3. Stakeholders

The stakeholder analysis concerned stakeholders' official rights and responsibilities in natural resource management based on national legislation and policies, as well as their perceptions of their ability to control natural resource use, legitimacy of and interests regarding decision-making. In the following, we present a summary of the relevant actors and their respective stakes in resource management, to be further elaborated in following chapters.

3.1 Landscape level

Table 2 presents the main locally defined land use categories found in the East Usambara landscape, the locally and globally valuable resources and services derived from them, and the main stakeholders associated with the management of these land uses. This information was provided by the participants of the April 2008 Landscape Mosaics Inception workshop who represented some of the stakeholder groups in the East Usambara Mountains: the village chairpersons and executive officers of all three study villages, ward officers, district technical staff and directors, regional catchment forestry staff and local agricultural research and extension staff.

Table 2: Main land use types of the East Usambara Mountains landscape, associated resources, services and stakeholders. Analysis by the participants of the Landscape Mosaics project Inception workshop

Land use type	Resources	Services	Stakeholders
Government forest reserves and nature reserves	Global value: Biodiversity: endemic species of trees, shrubs, birds, insects, amphibians, reptiles, mammals etc. Carbon stocks Local value: Timber trees Firewood Building materials – poles and rope Honey Butterflies for domestication Wild fruits Medicine	Global value: Biodiversity conservation Carbon sequestration Research Tourism Local value: Water services Soil protection Climate regulation Employment	Central Government Communities Tanzania Forest Conservation Group (TFCG) District councils Businesses Researchers Tourists Butterfly farmers and Allanblackia collectors *
Tea plantations in the uplands	Local value: Business/income	Local value: Employment	East Usambara Tea Company (EUTCO) Tea Research Institute Communities Small-scale tea farmers District council Businesses Consumers
Upland agroforestry systems: cultivation of spices under rainforest canopy	Local value: Cash income Firewood, poles and timber Medicine Food Biodiversity	Local value: Water services Soil protection Biodiversity	Farmers Businesses District council Central government Small scale industries Tanzania Chamber of Commerce, Industry and Agriculture
Farmland (smallholder farming of sugarcane, banana, maize, yams and cassava)	Local value: Income Food	Local value: Employment	Farmers Businesses District council Central government Small scale industries Tanzania Chamber of Commerce, Industry and Agriculture

Land use type	Resources	Services	Stakeholders
Village Forest Reserves (VFRs)	Global value: Biodiversity Local value: Timber Firewood Medicine Honey Butterflies	Global value: Biodiversity conservation Carbon sequestration Research Tourism Local value: Water services Soil protection Sacred sites Employment	Communities Village governments District councils Central Government Researchers TFCG Butterfly farmers and Allanblackia collectors
Tree plantations (teak)	Local value: Business/income: Timber Firewood Building materials – timber, poles, rods	Local value: Water services Soil protection Employment	Communities Village Governments Central Government Tea company District council TFCG
Wetlands	Local value: Fish Vegetables, mushrooms Leaves for mulching	Local value: Water services: domestic and industrial use as well as irrigation	Communities District councils Tea company NGOs and Community-Based Organizations (CBOs)

* *Allanblackia stuhlmannii* is a tree species endemic to the Eastern Arc mountains. In the East Usambaras, the collection of its seeds has been commercialized through a project, forming an important additional source of income for some local people. See Chapter 6 for a case study of this species.

The participants also analysed some of the roles, rights and responsibilities of different stakeholder groups in relation to the various resources identified in the previous exercise. A summary of this analysis is presented in Table 3.

Table 3: Analysis by the participants of the Landscape Mosaics project inception workshop on the various stakeholders' roles, rights and relationships to natural resources in the East Usambara landscape

Land use system	Who benefits from the resources?	Who wishes to benefit but is unable to?	Who decides about the management of the resource? How?	Who has an impact on the status of the resource, and in what way? Positively or negatively?	Are there conflicts about the use and management of the resource among stakeholders? What kind of conflicts? With whom?	To improve management and reduce conflict, who should be involved in decision-making?
Government forest and nature reserves	Communities Wild and domestic animals Researchers Tourists Business people District Councils Central Government TANESCO	Timber businessmen, and dealers Companies Poachers	Central Govt Village Councils District Councils	Positive: + Central Govt monitors enforcement of bylaws + Communities abide to community bylaws Negative: - Community members who are against bylaws and breach them - Communities farming or grazing near water sources - Mining - Medicinal herbs collection (unauthorized) - Chemical fertilizers from tea farming	- Between Govt and communities on sharing of benefits - Farming around water sources - Tree planting of unsuitable species (eucalyptus) around water sources - Grazing animals near water sources - Encroachment by community members in and around forest reserves causing damage - Villages that break the law are in conflict with other villages that respect them	All stakeholders: Communities Village Councils District Councils Companies Central government Conservationists
Plantation forests	Companies Central Govt District Councils Rich members of communities**	Communities Village Councils Poor members of communities	Central government	Positive: + Central government forms guidelines and regulates Negative:	Disagreement between communities and Central Govt on issuing of harvesting permits	Communities Central Government

Land use system	Who benefits from the resources?	Who wishes to benefit but is unable to?	Who decides about the management of the resource? How?	Who has an impact on the status of the resource, and in what way? Positively or negatively?	Are there conflicts about the use and management of the resource among stakeholders? What kind of conflicts? With whom?	To improve management and reduce conflict, who should be involved in decision-making?
				- Citizens who break bylaws		
Village Forests	Communities Government Tourists	Neighbouring villages who do not have village forest reserves Business people	Village Council through bylaws and management plans District Council	Negative: - Communities breaking existing guidelines and bylaws	Between people who break the bylaws and Village Council (e.g. sometimes farm expansion in forest by few community members who are against Village Council regulations; illegal grazing and tree cutting) Central Govts and communities	Communities, experts with technical know-how and Village Councils All members of the communities
Community Forest †	Community owning forest	Communities who do not have forests	Communities District councils	Positive: + Community by obeying bylaws Negative: - Those who do not obey bylaws	Groups who want to establish community forests and farmers who do not want to give up their land for the purpose	All villagers
Farming land: 1) Commercial agriculture 2) Food crops	Communities Business people Government		Farmers District experts Government	Positive: + Farmers abiding to existing to agricultural farming techniques + District officers have enough experts to monitor implementation	Communities and government	Government and communities All farmers

Land use system	Who benefits from the resources?	Who wishes to benefit but is unable to?	Who decides about the management of the resource? How?	Who has an impact on the status of the resource, and in what way? Positively or negatively?	Are there conflicts about the use and management of the resource among stakeholders? What kind of conflicts? With whom?	To improve management and reduce conflict, who should be involved in decision-making?
				Negative: - Failure of farmers to follow existing guidelines - Impact of inappropriate practices on livelihoods of women and communities		
Grazing land	Communities	Communities that cannot afford to keep livestock	Livestock keepers; Village Council by demarcating grazing areas and formulating bylaws	Positive: + Communities when keeping livestock according to the capacity of the area Negative: - Communities when keeping livestock exceeding the capacity of the area	Too many areas have been reserved and conserved by central and village governments. Grazing areas are small. Between livestock keepers and farmers when livestock enter croplands.	Village Council Livestock keepers and farmers

** Individuals who can afford logging permits.

† Difference between Village Forests and Community Forests: community forest is a reserve that can be established by a subset of village members on village land, for example a group with a common interest such as butterfly farming. Both types of reserves fall under the national Community-Based Forest Management scheme.

3.2 Village level

Following the implementation of the decentralization and devolution policies of various sectors in Tanzania, significant decision-making power over resources is formally vested in the locally elected Village Council. Management rights regarding land and forest resources within the demarcated village area are held by the Council. A democratic, accountable, and capable Village Council could thus be seen as the key to sustainable and equitable natural resource management at the village level.

The Village Assembly is an open meeting where all community members get to exercise some control over the decisions of the Village Council. The Assembly is thus an arena for different village level stakeholders to voice their opinions on the management of natural resources located on village land and influence decision-making. In the Village Assemblies we witnessed in the Landscape Mosaics study villages, the overall turnout was very low; on average around 10% of the village adult population. These meetings mainly focused on natural resource management, such as the launch of a Village Land Use Planning process or discussions on the results of the participatory research within the project, which has to be taken into account when interpreting the significance of such low attendance; it is possible that Assemblies where other types of communal issues are discussed attract more participants. If the levels of participation observed reflect a general trend, only a small sub-set of villagers participate in communal decision-making. On the other hand, no obvious category of village level stakeholders conforming to such pre-defined attributes as age, gender, religion or ethnicity has been conspicuously absent or excluded from the assemblies witnessed.

The most common reasons mentioned in the household survey for not participating in the Village Assembly were personal reasons such as illness. However, in the focus group discussions, women emphasized difficulties in participating due to their heavy domestic workload. Some were also discouraged from participating by their husbands. Even when turning up in nearly equal numbers as men, women have clear difficulties in voicing their concerns in the assembly. Speaking in front of a meeting that may gather over 100 villagers is a daunting task that only the most self-confident personalities, regardless of age or gender, are said to be capable of. On the other hand, women are active in the various committees established for village natural resource management where they can find reassurance in smaller, more intimate groups and power in numbers. In accordance with national guidelines, around 50% of the members of the village committees are women. Members of community groups dealing with alternative income generating

activities, such as butterfly farming and fish ponds, are also often women as they have been specifically targeted by such projects. It seems that participation in small groups and influencing natural resource management can also function to empower at least some women to become more vocal and active in communal matters in general.

Table 4 summarizes the local practices concerning the different types of rights held by community level stakeholders over resources on village land, as well as the types of conflicts associated with resource management. The analysis was made by groups of women and men in the three study villages, and complemented with observations by the research team.

Table 4: Holders of rights to resources in different land use types found on village land and the types of conflicts associated with resource management

Land use type	Who has access?	Who does not have access?	Who can use resources for subsistence or business?	Who wishes to use resources but is excluded? Who has right to exclude?	Who decides about management according to (1.) local customs and (2.) formal rules	Who has right to sell, lease or leave this land as inheritance?	Are there conflicts about the use and management of the resources between stakeholders? What kind of conflicts? Between whom?
Field/ farmland	Villagers; families who hold customary rights over land (men and women)	Non-villagers unless they obtain a permit from the Village Council to "buy"[§] land in the village; for example in the uplands, migrant tea workers who wish to retire from tea picking and settle in the village. It is sometimes disputed whether these tea workers are "real villagers" or not, despite often being registered as inhabitants in official village records.	Field owners (families, men and women) grow food crops for subsistence and cash crops for income. The cash crops sold by men and women are somewhat different, with men usually dominating the sale of higher value crops. Anyone can hunt or gather wild foods on farms.	Non-villagers wish to use land, tree resources and harvest NTFPs but are excluded by the Village Council or private farm owners.	1.Farm owners; usually male household head 2. Village Council and Land Council	Farm owners, usually male (according to the Shambaa tradition) and Village Council concerning communal land	Boundary conflicts between neighbouring farmers; Conflicts within families on distribution of income from crop harvest and sale, sometimes also related to distribution of land to family members in case of inheritance

Land use type	**Who has access?**	**Who does not have access?**	**Who can use resources for subsistence or business?**	**Who wishes to use resources but is excluded? Who has right to exclude?**	**Who decides about management according to (1.) local customs and (2.) formal rules**	**Who has right to sell, lease or leave this land as inheritance?**	**Are there conflicts about the use and management of the resources between stakeholders? What kind of conflicts? Between whom?**
Agroforest, fallow land	Farm owners who have agroforest or land in fallow; other villagers if owners allow	Non-villagers; sometimes access of other villagers also restricted	In addition to farm owners, other villagers can usually collect wild foods (fruits, vegetables, mushrooms), firewood and other NFTPs. Owners can use or sell crops as well as NTFPs and timber, but the latter requires a permit from the Village Council. As above for hunting	Owners and Village Council can exclude other users (villagers, outsiders)	As above	As above	Boundary conflicts; Conflicts between fallow land owners and other farmers who complain that fallows are source of crop destroying animals; Between farm owners and intruders who take valuable resources without permission (thieves)

Land use type	**Who has access?**	**Who does not have access?**	**Who can use resources for subsistence or business?**	**Who wishes to use resources but is excluded? Who has right to exclude?**	**Who decides about management according to (1.) local customs and (2.) formal rules**	**Who has right to sell, lease or leave this land as inheritance?**	**Are there conflicts about the use and management of the resources between stakeholders? What kind of conflicts? Between whom?**
Forest on village land	In theory, all villagers have access; in practice, many do not have access due to fear and shame of being caught and thought to be doing something illegal	Non-villagers; for example visitors (tourists and researchers) should pay a fee for access according to forest bylaws	According to most village forest bylaws, villagers may collect wild foods (vegetables, fruit and mushrooms) for subsistence. Collection of dead firewood is allowed on certain days. NTFP harvesting for income (honey, butterflies, medicinal plants) requires a permit from village forest committee. Timber harvesting for business purposes is not allowed.	Some villagers would like to harvest timber, building materials, hunt and mine gold but have been excluded by the Village Council and forest committee through bylaws.	Previously open access, now Village Council and forest committee decide according to formal rules	No one has right to sell or lease this land but the community and Village Council can leave it as inheritance for future generations	Between forest committee and farmers whose land was included in the Village Forest Reserve (a few in each village); Between Village Council, forest committee and villagers/outsiders who break village forest bylaws by encroaching into the reserve, mining gold, harvesting timber or hunting
Lowland tree plantations (rubber, teak)	Plantation owners who have "bought" or leased the area from Village Council	Villagers	Plantation owners, for business. Some pieces of land are loaned to villagers for restricted agricultural use on the condition that they care for newly planted teak trees.	Villagers wish to use resources but are excluded by owners	Owners decide about management according to formal rules	Owners and Village Council have the right to lease, sell or leave as inheritance	Conflict between livestock keepers and rubber plantation owners (livestock can damage tree seedlings).

Land use type	**Who has access?**	**Who does not have access?**	**Who can use resources for subsistence or business?**	**Who wishes to use resources but is excluded? Who has right to exclude?**	**Who decides about management according to (1.) local customs and (2.) formal rules**	**Who has right to sell, lease or leave this land as inheritance?**	**Are there conflicts about the use and management of the resources between stakeholders? What kind of conflicts? Between whom?**
Wetland areas	Farm owners in wetland areas; other villagers	Non-villagers	Farm owners cultivate rice, sugarcane, tomatoes and yams for subsistence and income; other villagers may collect wild foods and hunt, e.g. birds for subsistence	Some villagers and outsiders wish to mine in the wetland areas but have been excluded by Village Council through environmental bylaws	As in the case of farmland	Owners and Village Council can leave this area as inheritance	Between owners, Village Council and people engaged in illegal mining activities: Between farm owners and intruders (thieves)
Residential area	All	-	Villagers by growing crops in home gardens	As in case of farmland	As in case of farmland	As in case of farmland	Boundary conflicts between neighbours
River	All	-	Villagers can use water, fish and collect crabs for subsistence as well as sand and stones for business	Some villagers and outsiders wish to mine in the river but have been excluded by Village Council through environmental bylaws	Village Council, and environment committee manage according to formal rules	-	Between Village Council, environment committee and people who are engaged in mining or fishing by using poison

Land use type	**Who has access?**	**Who does not have access?**	**Who can use resources for subsistence or business?**	**Who wishes to use resources but is excluded? Who has right to exclude?**	**Who decides about management according to (1.) local customs and (2.) formal rules**	**Who has right to sell, lease or leave this land as inheritance?**	**Are there conflicts about the use and management of the resources between stakeholders? What kind of conflicts? Between whom?**
Wells/ natural springs	Villagers		Villagers can use water for subsistence		Village Council, according to formal rules	-	Conflicts between water users in times of water shortage (dry season); Between water users and farmers cultivating close to water sources, affecting water quality negatively

§ No land can actually be bought in Tanzania since the soil, physically, is vested in the Central Government; what can be bought, traded, inherited, etc., are the *rights* to the land (Alden Wily 2003; see also Chapter 4.1).

4. Institutions and practices in the governance of natural resources

The central control over natural resources established during the colonial period and reinforced during the Tanzanian socialist era still characterizes the country's natural resource management (Kallonga et al. 2003). In the past two decades, a strong movement towards more decentralized and devolved forms of natural resource governance has occurred, with the aim of creating more direct benefits to the rural population and ultimately reducing poverty. Nevertheless, despite the shift towards more participatory and devolved national policies of forest management and conservation, there remain significant gaps between the formal institutions and the actual practices (Vihemäki 2005, Pflienger and Moshi 2007). The implementation of participatory management strategies remains a politicized process where the power relations between the various stakeholders play an important role. In the following, we first review the legal and institutional context of land and forest governance in Tanzania and then provide an account of the observed governance practices in the Landscape Mosaics study villages.

4.1 Land

4.1.1 Legislation governing land management

The Land Act (URT 1999a) and Village Land Act (URT 1999b) define land tenure in Tanzania. The President of the Republic is entrusted with the ownership of all the land (i.e. the soil) in Tanzania on behalf of the people, whilst citizens may own rights over the land (Alden Wily 2003). The land law recognizes two types of land tenure: (1) customary rights of occupancy that have no time limit and can be obtained by individuals or communities (of Tanzanian citizenship), and (2) granted rights of occupancy by the government to individuals, villages, companies, parastatal organizations and investors, with a time limit usually of 99 years. Legally the customary and granted rights of occupancy have the same status (Alden Wily 2003). In principle, the new land legislation should provide better recognition of customary rights compared to previous laws (Okoth-Ogendo 2000, 124), but opposing views have been presented (Sundet 2005).

In rural villages, the most common form of land tenure is through customary rights. In the Tanzanian context, however, customary does not necessarily equal 'traditional' like in

many other places in Africa. Since the villagization policies of the 1970s, which often involved shifting people or even entire communities, customary rules have been shaped by community-based decision-making and administration of land rights, not necessarily based on traditions but in response to directives from either central or local district government. Thus, 'customary practice' in many Tanzanian villages could be described as a snapshot of the 'prevailing norms' (Alden Wily 2003, 11), although the Village Land Act [URT 1999b, Section 20(2)] does stipulate that "any rule of customary law shall have regard to the customs, traditions and practices of the community". Yet, any such customs are to be followed only to the extent that they conform to the National Land Policy and "do not deny women, children or persons with disabilities lawful access to ownership, occupation and use of lands" (Alden Wily 2003, 12).

Land tenure continues to be a source of conflicts and disputes in many areas of Tanzania. Considerable uncertainty and confusion about land tenure prevails while the population continues to grow, the economy has been opened to investors and there is growing pressure on land. An overwhelming proportion of the rural population lacks the documentation to defend their customary rights to land, which can be revoked by the state for public benefit (Alden Wily 2003). The insecure land tenure situation in rural areas has been widely recognized as one of the key elements that stands in the way of sustainable rural development and natural resource management in Tanzania. The National Land Policy, National Forest Policy, and a draft Rural Development Strategy all explicitly recognize this (Kallonga et al. 2003).

The following types of land in Tanzania are recognized by the land laws:

- Reserved land, which is set aside for wildlife, forests, marine parks, etc. The ways these areas are managed is explained in the laws that regulate resource use in each sector (e.g. Wildlife Conservation Act, National Parks Ordinance, Marine Parks and Reserves Act, etc.).
- Village land, which includes all land inside the boundaries of registered villages. The Village Land Act defines the power of the Village Councils and Village Assemblies to manage this type of land.
- General land is land which is neither reserved land nor village land (such as urban areas) and is therefore managed by the National Commissioner of Lands.

Table 5 summarizes the formal levels of land governance in relation to the role and responsibilities that the various institutions hold.

Table 5: Formal levels of land governance

Institution	Role/responsibility
President of the Nation	Trustee of all land on behalf of the citizens Can revoke rights to occupy land Can take land for the benefit of the public, such as for investment or conservation
Minister of Lands	Assists the President and oversees the Commissioner on administration
Commissioner of Lands	Main person in charge of land matters Assists the President in putting land laws into practice Can delegate tasks to other people or institutions Makes important decisions on how land is distributed
District Councils	Help to inform relevant institutions about land management decisions
Village Councils	Manage village lands on behalf of Village Assemblies Make decisions about applications for land from villagers and outsiders Allocate village land after approval from Village Assemblies May give customary rights of occupancy to individual villagers, families, village organizations or non-village citizens who will be given a 'Certificate of Customary Title' Can enter into joint village land use agreements with one or more other Village Councils in neighbouring lands
Village Assemblies	Oversee that the Village Councils manage village lands properly Can veto or approve some decisions made by the Village Council
Village Adjudication Committees	Mark land boundaries Find out what land belongs to whom Settle disputes if people think a mistake has been made Report to the Village Council
Village Land Councils	Settle disputes over land matters in village lands
Individual villagers	If more than 100 villagers feel Village Council mismanages land, they can report to the District Council, which reports to the Commissioner who may set up an enquiry. As a result either the Commissioner or the District Council may become responsible for the land. An individual may sue the Village Council if he/she feels that land is being mismanaged

Source: Wildlife Working Group (2004, 3)

4.1.2 Local land management

The Village Land Act (URT 1999b) devolves authority over land administration, land management and dispute resolution to the village level. Village Councils are issued with *Certificates of Village Lands* by the Commissioner in the name of the President. The Certificate is proof of the customary rights of occupancy in a given area of village land and gives the Village Council the authority to manage the village land. It shows the boundaries of the village land that were agreed on and marked on the ground. Village

Councils are managers of the village land but do not own it. The Village Land Act (URT 1999b, WWG 2004) prompts the Village Councils to divide the land, under the approval of the Village Assembly, into three categories:

- Communal land, which may include forests, grazing pasture or other areas with natural resources managed by groups of people. Village Forest Reserves and Wildlife Management Areas can be established on communal land.
- Occupied land, which is already being used by individuals or families.
- Future land, which can be set aside for future use by individuals or the community.

Any person residing within the village holds customary rights of occupancy to the land, even when not registered. Although individual customary rights are found mainly on village land, people who are living in forest reserves, national parks, or in urban and peri-urban areas as customary occupants, will also be recognized as holding customary rights. In terms of registration, such customary rights to land outside village land can be registered as Granted Rights, rather than Customary Rights of Occupancy (Alden Wily 2003).

Village Councils are responsible for allocating village lands but need the approval of the Village Assemblies. The Village Council may recognize customary rights of occupancy of individual villagers, families, village organizations or non-village citizens who are given a *Certificate of Customary Title*. Even though land itself cannot be bought or sold, the right to land (i.e. the right to use and occupy land) may be bought and sold. It may also be leased or mortgaged. However, individuals' land rights are conditional upon occupation and/or use. Land that is not occupied or used for five or more years can be considered abandoned land and the Village Council may reallocate this land (Alden Wily 2003). According to the law, the Village Council has to consider the circumstances before such a decision is made.

In case of land disputes, settlement can be sought at five levels of court as defined in the land law as follows:

- Village Land Council
- Ward Tribunal
- District Land and Housing Tribunal
- High Court (Land Division)
- Court of Appeal of Tanzania.

In terms of the rights to land for vulnerable individuals, the Village Land Act sets out provisions to protect children's rights to land (although there are no clear statements

regarding orphans). Furthermore, it indicates the Village Councils have the role of ensuring those rights through land administration. The most important statements regarding women's rights are found in the Land Act. They aim to guarantee equal rights of women and men to hold and deal with land, including divorcees and widows, and state that spouses own land jointly unless specifically defined otherwise in the certificate of customary title. Again, the village land institutions are meant to safeguard these rights. If customary rules of the community deny women access to ownership, occupation or use of land, these rules are void in the face of the law (Alden Wily 2003).

4.1.3 Roles of the district and national levels in land management

The Commissioner of Lands holds the ultimate authority of land, which manifests itself in regulations that must be followed by all village land managers. Aside from this, the Commissioner of Lands mainly plays a supervisory and advisory role (Alden Wily 2003). With respect to the general land, the District Council acts on behalf of the Commissioner of Lands. The District Council's role in the management of village land is clearly defined in the Village Land Act as that of a supporter and advisor, not implementer or controller. The District Council may intervene if requested by villagers and take over the management of village land (not ownership) if assigned by the Commissioner (see Table 5). The main role of District Land Officers is to help Village Councils to understand and implement their roles in land management. However, certificates of Customary Right of Occupancy need to be signed, sealed and registered by the District Land Officer before they may be issued by a Village Council (Alden Wily 2003). This means that in practice, the district authorities can exercise some power over the land management and tenure at the village level. Furthermore, the actual management of land is often influenced by non-transparent practices. The land allocation processes in Tanzania are sometimes affected by personal interests of the local leaders, and village land may be allocated to external actors without full consultation of the villagers.

4.1.4 Land management at local level

None of the three study villages in the East Usambaras had a Certificate of Village Land by the end of the project in May 2010. However, a village land use planning process was taking place in all of them. Normally, as part of the process, the boundaries of the villages are demarcated, which is a pre-requisite for being granted the Certificate of Village Land. This was completed in two of the villages, which were entitled to apply for the certificate. After the issuance of the certificate the Village Council will have the power to manage village land and to grant certificates of customary titles to the villagers. Private land is still

being ‘bought’ and ‘sold’ according to customary ownership. In all three villages the Village Adjudication Committees (generally known as ‘Land Committees’) have been elected. Kwatango village also has a Village Land Council for settlement of disputes.

Women’s land rights are potentially the area of village land management with the most discrepancies between the current legislation and prevailing practice. According to the customary rules of many Tanzanian tribes, women cannot own land, and the land law is unlikely to have yet significantly displaced customary practices. In many places the institutional capacities to implement the new legal structures will likely remain low and women’s access to state law in land disputes limited.

Feierman (1974) has described how descent among the Shambaa was traced through patrilineal kinship and men inherited the land of their fathers. According to Woodcock (2002), in pre-colonial times Shambaa women had access and use rights to the land of their clan, which they had to give up upon marrying into another clan and becoming members of the new clan. If the woman later divorced or became a widow, she could return to her father’s clan and regain her access and use rights to her father’s clan land.

Today, the people of the East Usambaras represent various ethnic groups, and the customary practices of each group regarding women’s land rights vary, leading to diverse land rights practices, especially in ethnically mixed villages. Yet, the practices do not strictly correlate with the distribution of the ethnic origins of the inhabitants. Our household survey confirmed the indications from focus group discussions that land accessed by households for farming is mostly owned by men. On average, 25% of the women reported owning land themselves as opposed to accessing land owned by a spouse, jointly owned or owned by another family member. In Misalai village, nearly 40% of the female respondents reported personally owning land. Women were more likely to own land personally if they were the head of a single-parent household than spouses of male-headed households. The most common way of obtaining the owned land for women of all ethnic groups was through inheritance. In Misalai, the Village Council reported that women born in the village may inherit their husbands’ land, while women who have become inhabitants of the village through marriage cannot. The household survey showed that this statement was not entirely true in practice. It seems that the conditions for recognizing women’s land rights vary from one family to another.

4.2 Forest resources

The decentralization of forest management was formalized in the National Forest Policy in 1998 (MNRT 1998). This policy outlines the guiding objectives of current and future forest management in Tanzania, including clearer definitions and strategies for devolving forest and tree tenure rights to the local level. The aim is to harness the potential of forest resources to contribute to the sustainable development of the nation. The legal framework for implementing the National Forest Policy is provided by the Forest Act of 2002. One of its objectives is "to encourage and facilitate the active participation of the citizens in the sustainable planning, management, use and conservation of forest resources through the development of individual and community rights, whether derived from customary law or under this Act, to use and manage forest resources" (URT 2002a).

Through the Forest Act, Participatory Forest Management (PFM) was introduced into the law, having been applied in Tanzania (including the East Usambara Mountains) through various pilot projects since the early 1990s. Since 2003, the Forestry and Beekeeping Division (FBD) of the Ministry of Natural Resources and Tourism has implemented PFM as part of the National Forest Program. Currently, there is an ongoing effort by the FBD to evaluate the performance of PFM, as well as numerous research projects undertaken by national and foreign institutions and individuals on the social, ecological and economic performance of PFM (see overview in *Arc Journal* Issue 21, 2007). The 1998 National Forest Policy is also presently being reviewed (M. Kagya, Assistant Director of the Forestry and Beekeeping Division, personal communication, 8th April 2009). Much of the above research has been concentrated on the Eastern Arc mountain range sites, including the East Usambara Mountains, due to their high conservation values.

In Tanzania, forests occur on reserved, general and village lands. Forests are classified into national forests, local authority forests, village forests and private forests. The sub-categories under each type of forest are presented in Table 6.

Table 6: Types of forests in Tanzania (URT 2002a)

Forest type	Includes
National forests	Forest reserves Nature forest reserves Unprotected forests on general land
Local authority forests	Local authority forest reserves Unprotected forests on general land
Village forests	Village land forest reserves Community forest reserves created out of village forests Forests, which are not reserved, which are on village land whose management is vested in the Village Council
Private forests	Forests on village land held by one or more individuals under a customary right of occupancy Forests on general or village land for which the rights of occupancy or lease have been granted to an individual, group or organization with the purpose of managing the forest

4.2.1 Local level forest management

Two types of Participatory Forest Management are nationally promoted and being scaled up in Tanzania: Community-based Forest Management (CBFM) on village land and Joint Forest Management (JFM) of protected and production forests. Accordingly, there are three ways through which communities can participate in forest management:

- As owner-manager in the case of Village Land Forest Reserves or Community Forest Reserves on village land under the management of the Village Council.
- As designated manager in the case of Village Forest Management Areas. Communities living next to National or Local Authority Forest Reserves can be given the right to manage a section, as long as there is an agreement between the village and the reserve's managing authority.
- As co-manager with the national government for National Forest Reserves or local government for Local Authority Forest Reserves. These co-management arrangements will be governed by Joint Management Agreements (WWG 2004).

Katila (2008) analysed the degree of devolution of various forest rights to community level in the cases of village land forest reserves (CBFM) and village forest management areas (JFM). Table 7 below is modified after her results.

Table 7: Devolution of forest rights in CBFM and JFM in Tanzania according to Katila (2008)

Forest right	CBFM	JFM
Right to use non-timber forest products	+++	++
Right to use timber	+++	+
Right to decide on the harvesting, management and transformation of the resource	+++	+
Rights to enforce rules, monitor resource use and sanction violators	+++	+++
Right to exclude	+++	++
Right to transfer – households	-	-
Right to transfer – communities	+++	+++
Duration of rights	+++	+
Security of rights	+++	++
Right to receive compensation if the rights are either fully or partly taken away	+++	+++

Key: +++ extensive, ++ moderate, + limited

Community-based forest management

As trustees of the common land on behalf of the villagers, Village Councils are responsible for the management of forests and woodlands on village lands. The duty can be allocated to a specific existing committee, such as the Village Forest Committee. Village Councils can mark out Village Land Forest Reserves (VFRs) that require a management plan and bylaws passed by the Village Assembly. The management plan describes the forest resources, rights to use of the forest, and the rights holders (subject to village membership). Rules regarding the forest are included in the plan, but it is the bylaws that make them legally binding. After approval by the Village Assembly, both need to be submitted to the district authorities for approval and registration (URT 2002a). Village Councils can also grant permits regarding harvesting of forest products, if required, and collect fees and fines. The Village Council is thus a key rights holder in case of VFRs.

Another type of forest reserve on village land is a Community Forest Reserve, set up by a sub-set of the village population. The Village Council must recognise the group and give it the management authority. This type of forest also requires a management plan (URT

2002a, WWG 2004). In the East Usambaras, a forest reserve established by members of a butterfly farming group in IBC Msasa village[2] represents such type.

Joint Forest Management

Villages may enter into Joint Forest Management Agreements with the FBD regarding national forests, or with District Councils regarding local authority forest reserves (URT 2002a). The purpose of JFM agreements is to involve local people in looking after the forests in exchange for certain use rights defined in the agreements. The management responsibilities, forest rules, sanctions and settlement of disputes are also defined in the agreement. The village is represented by the Village Council which may only enter into the agreement upon approval by the Village Assembly. Areas of reserves managed by villages are called Village Forest Management Areas. They can be created by the Director of Forestry once the Village Assemblies have sent an application to him. A specific Village Forest Management Committee must be created for the management of such areas (URT 2002a, WWG 2004).

4.2.2 District level forest management

Districts have the mandate to manage forests that are within the district boundaries and are not managed in another way (see above). Two officials in the district office have forest management responsibilities: the District Catchment Forest Officer manages the catchment forest reserves within a district, and the District Forest Officer or Natural Resource Management Officer manages forests on general land. The District Forest Officer is usually appointed as a PFM focal person.

Community-Based Forest Management policy has in theory changed the official role of district forestry staff from "policing" community forest resource use and excluding communities from management and use, to advising communities on how to best manage their forests. Foresters are meant to take the role of facilitators of CBFM and Village Land Forest Reserve (VFR) establishment and to guide communities through the process (URT 2007). As with other land management plans, the plans and bylaws for VFRs must be approved by the District Council. Districts hold a register book of all approved VFRs. District Councils are meant to supervise Village Councils in the management of VFRs, and can overtake the management functions if the Village Council fails in their management duties (as in land management) (URT 2002a, URT 2007).

[2] The village was named after a sawmill/logging company that operated in the area decades ago.

The Director of the FBD may decide that a district take up the responsibility of managing a local authority forest reserve or a national forest reserve, unless the management has been otherwise established. The FBD, local authorities, Village Councils, community groups, individuals holding concessions, companies, co-operatives or other organizations in the private sector, and NGOs all qualify to apply for managing a national forest reserve or local authority forest reserve, or a section of such reserves (URT 2002a).

4.2.3 Landscape level forest management

In spite of the fact that landscape approaches to forest management are not explicitly mentioned in either the National Forest Policy of Tanzania (1998) or the corresponding legislation (the Forest Act 2002), both emphasize the importance of cross-sectoral coordination of forestry and farm forestry, strengthening the linkages and coordination between the different levels of national, regional and local forest administration as well as the broad participation of a variety of stakeholders in forest management. Various types of forests, as presented above, with their corresponding managers can be found in a single forested landscape. To ensure sustainable management of the forests in a landscape so that it corresponds to the various stakeholders' social, cultural, environmental and economic needs, the managers would need to commit to a coordinated and coherent management strategy for the whole landscape.

The idea of landscape management has been introduced into the conservation rhetoric in Tanzania and is reflected, for example, in the Eastern Arc Mountain Forests Strategy (MNRT 2006) and in efforts to establish a UNESCO Man and Biosphere (MAB) Reserve, comprising the whole of the East Usambara Mountains (Hokkanen 2002). The East Usambara MAB process was initiated during the Finnish and EU funded 'East Usambara Conservation Area Management Program' (EUCAMP), which was a continuation of previous donor-supported projects in the forest sector[3]. At its closure in 2002, the EUCAMP called for efforts to develop and implement an East Usambara MAB reserve strategic plan which stipulates the zoning of the landscape for different degrees of conservation and livelihood activities, and points to a coordination framework between

[3]Prior to EUCAMP, the East Usambara Catchment Forest Project (EUCFP) supported forest conservation in the landscape and introduced participatory forest management approaches during the 1990s. In its third and final phase (1999-2002) EUCFP, and the parallel East Usambara Conservation and Agricultural Development Project (EUCADP) were merged to form the EUCAMP.

managers of nature reserves, catchment forests, village forests and farm forests (EUCAMP 2002). Balancing conservation and development functions of a landscape is central to the MAB approach (Hokkanen 2002).

The MAB strategy for the East Usambara landscape remains unimplemented. According to regional and national representatives of the FBD, currently the main function of the MAB status is to raise the profile of the area nationally and internationally, whereas the management of the East Usambara Mountains landscape is to be guided by the Eastern Arc Mountain Forests (EAMF) Strategy (MNRT 2006). The EAMF Strategy is said to cover, not contradict, the MAB principles. The EAMF Strategy is, however, in essence a conservation strategy that does not include any development goals. Promotion of income generating activities, agroforestry and establishment of VFRs in the Eastern Arc Mountains are only referred to in the context of addressing the threats to biodiversity conservation such as illegal logging, unsustainable wood collection, hunting and poaching (MNRT 2006); not as deliberate efforts to integrate local livelihood needs in the management strategies.

4.2.4 Forest resources management at local level

Community-Based Forest Management

The three pilot villages participating in the Landscape Mosaics project have forest on village land, and all three have established VFRs (see Table 8). Only one of them, the Kwezimagati forest of Kwatango village, was officially registered in 2008, while the Shambangeda VFR was pending district approval. In Misalai, the VFR management plan was still being developed during the time of our field work. Kwatango and Shambangeda are already implementing their forest management plans and bylaws.

Table 8: CBFM and JFM in the Landscape Mosaics villages

Village	VFR process launched	VFR status	Adjacent Central Gov't Forest Reserves	JFM launched	JFM status	Other adjacent forest
Kwatango	2004‡	Approved and registered; mgment plan and bylaws being implemented	Manga, Kwamarimba	Manga Forest Reserve JFM process, 2000	Pending FBD approval (JFM agreement not signed)	Forest on neighbouring villages' land
Shambangeda	2002	Pending district approval; mgment plan and bylaws being implemented	-	-	-	Tea company forest
Misalai	2005	Mgment plan and bylaws being formulated; pending district approval	-	-	-	Tea company forest

‡ The establishment of a VFR was first initiated in 2002. This led to a conflict with the neighbouring Kiwanda village that claimed that some or all of the suggested VFR area fell within the boundaries of their village. The dispute was successfully settled with the district's mediation. In 2004, the village started a process of establishing a VFR in another location.

The establishment of VFRs in all cases has been initiated by the Tanzania Forest Conservation Group. This is not a coincidence since the promotion of VFRs as a means of safeguarding forest connectivity on village land between the forest protected areas and other forest fragments such as tea company forest is one of the key activities of the East Usambara Forest Landscape Restoration (EU FLR) project that TFCG is also implementing in partnership with WWF. The EU FLR initiative builds on the history of many NGO- or government-led conservation projects in the East Usambaras implemented since the 1980s, specifically the CBFM activities started by EUCAMP. Many of the earlier projects promoted forest conservation and tree planting on village land, and included environmental education or 'sensitization' activities.

Many local people are conversant with the direct and indirect benefits of forest conservation. The most commonly cited benefits of a healthy forest are a favourable climate, secure rainfall and provision of water. Fifty-nine percent (59%) of the respondents of the Landscape Mosaics project household survey named these as benefits of having a Village land Forest Reserve (Figure 3).

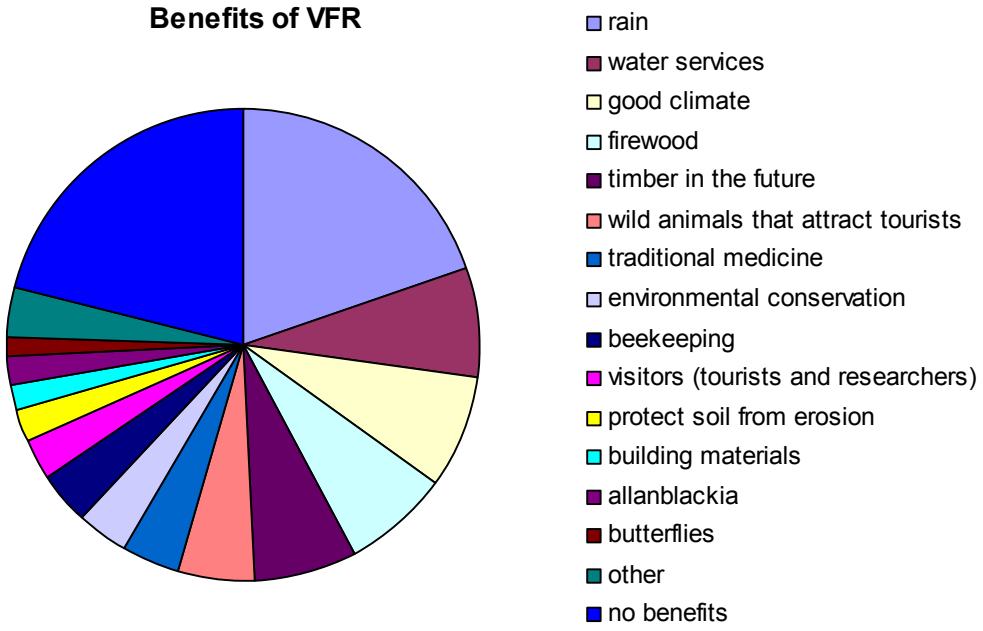

Fig. 3: Benefits of having a Village Land Forest Reserve according to respondents of the household survey (N=201) in Shambangeda, Misalai and Kwatango villages

It is noteworthy that most local values associated with VFRs are related to forest environmental services rather than direct use benefits. This is similar to the 'global values' motivating the external actors and interventions. Conservation is considered the main purpose of forests as land use by most villagers (Figures 4-6). This is reflected in the management plans of the VFRs that are mostly geared towards conservation, regeneration and replanting. Although one of the objectives of the National Forest Policy in promoting CBFM is to ensure sustainable use of forest resources and their contribution to the local livelihood needs, in the study village VFRs use of most forest resources is prohibited with the exception of collection of wild plant foods and some non-timber forest products (Table 8). Nevertheless, it is interesting that some of the direct livelihood support functions of forests are seen to become more important in the future (Figures 4-6). Villagers hope that after sufficient time for regeneration, timber harvesting could be allowed again. The potential future economic benefits from forest, in different forms, have been recognized as a reason to protect village forests in other parts of the Eastern Arc Mountains and in other locations of Tanzania (Woodcock et al. 2006, Mustalahti and Nathan 2007). Forests may also regain importance for harvesting of NTFPs in the future if other tree-based systems such as fallows and agroforests decline; in this sense the VFR with its strict current regulations may serve as a type of 'community savings bank'. Indeed, in all three villages the reason given by the forest committees for such strict regulations was that there are still ample forest products such as firewood, wild vegetables, medicines and building poles

available on village land outside the reserved area, and thus currently 'there is no need' to enter into the VFR for harvesting purposes.

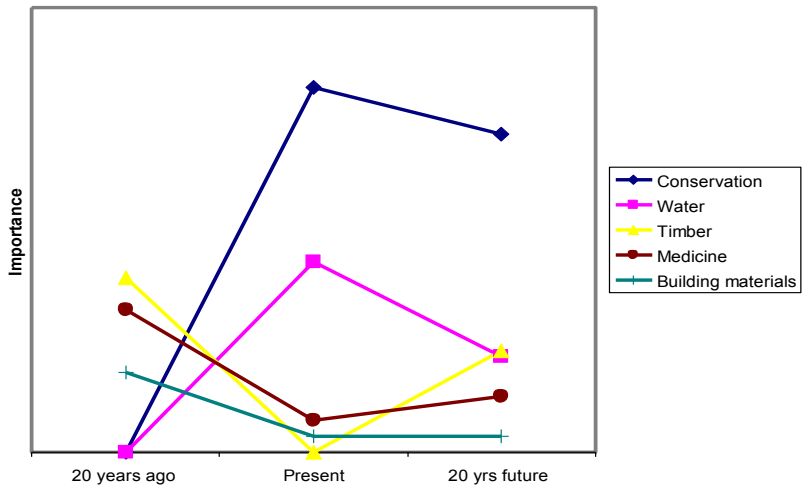

Fig. 4: Development of forest functions over time in Kwatango village. Average result of participatory analyses carried out by groups of women (<35yrs, >35yrs) and men (<35yrs, >35yrs)

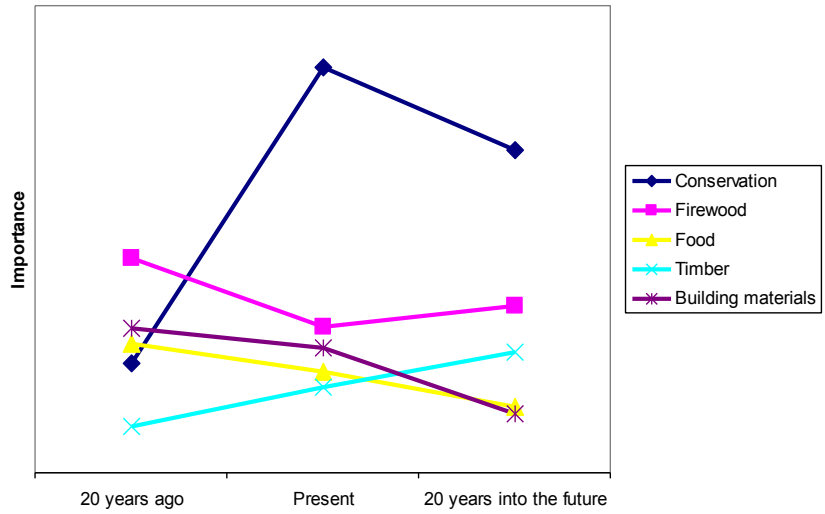

Fig. 5: Development of forest functions over time in Shambangeda village. Average result of participatory analyses carried out by groups of women (<35yrs, >35yrs) and men (<35yrs, >35yrs)

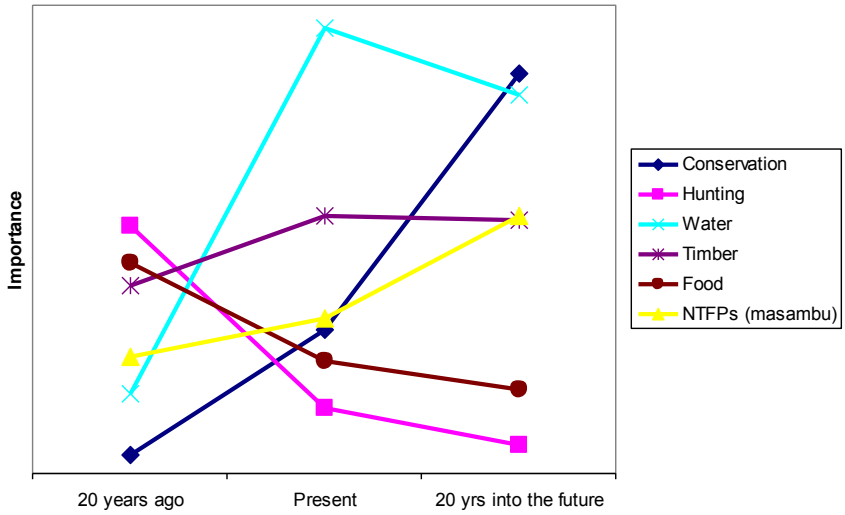

Fig. 6: Development of forest functions over time in Misalai village. Average result of participatory analyses carried out by groups of women (<35yrs, >35yrs) and men (<35yrs, >35yrs)

Table 9: Allowed and prohibited forest uses according to village forest bylaws in Shambangeda and Kwatango villages

Activity	Kwatango	Shambangeda
Cutting trees for timber	Strictly prohibited	Strictly prohibited Harvesting timber for public benefit such as a communal building project requires a permit from forest committee
Collecting firewood	Allowed	Cutting down fresh firewood strictly prohibited Collection of dead firewood allowed every Wednesday
Collecting vegetables and mushrooms	Allowed	Allowed
Collecting traditional medicine	Allowed for own use; for business requires a permit from forest committee	Requires a permit from forest committee
Beekeeping	Requires a permit from forest committee	Requires a permit from forest committee
Collecting butterflies	-	Requires a permit from forest committee
Charcoal making	Strictly prohibited	Strictly prohibited
Hunting	Strictly prohibited	Strictly prohibited
Grazing	Strictly prohibited	Strictly prohibited
Crop cultivation	Strictly prohibited	Strictly prohibited
Tourism	Requires a permit from forest committee	Requires a permit from forest committee
Research	Requires a permit from forest committee	Requires a permit from forest committee
Rituals, sacrifices	No mention	No mention

Source: Village Forest Management plans of the two villages

In interviews and informal discussions, villagers readily list several reasons for the establishment of VFRs and forest conservation in general. It is difficult to estimate how much it really reflects the innate local reasons for forest conservation. It is likely that many of the environmental conservation ideas that the communities have been exposed to for more than two decades have left their mark on local perceptions and ideologies, to the extent that local people no longer view many of these ideas and knowledge as foreign. It also seems likely that previous land appropriation exercises for establishment of strictly protected government forest reserves in other parts of the East Usambara landscape may have enhanced people's receptiveness to CBFM in many villages. In this sense, the CBFM activities promoted by TFCG may have found an exceptionally fertile ground in the East Usambara villages compared to other regions. Notwithstanding the history, by approaching the village leaders and the Village Council, who then introduced the proposal to the Village Assembly, TFCG may have provided the push for the actual initiation of the process for establishing the VFRs and village forest committees in all three Landscape Mosaics project study villages. In one village, the forest committee is also referred to as 'the TFCG group', suggesting that concrete conservation actions are still commonly associated with the external organizations that support them, as reflected also by the often heard reference to the nearby Amani Nature Reserve as FINNIDA[4].

At the same time, genuine local motivation for forest conservation should not be downplayed or undermined. The association of forests with water and life in the pre-colonial Shambaa culture has been documented by several researchers, including Woodcock (2002, see also Part 7.1). There are also strong social and cultural connections between the East and West Usambara Mountains, and many villagers in the East Usambaras have seen or heard about the practical environmental problems that deforestation can trigger: decreased water availability is a highly contested issue in the West Usambaras. Already, some people are claiming to have experienced problems related to water availability due to deforestation in other villages in the East Usambaras.

Indeed, in each study village the people who are involved in forest and environmental management, such as the leaders and members of the forest committee, seem truly committed to the forest conservation agenda. However, while the feeling of ownership over the community-based institutions is strong among those directly involved in them, it does not reach throughout the whole community. The majority of the respondents to the household survey felt they had not participated in the decision-making about the VFR nor its rules. Some of the women were not even aware of the existence of a VFR in their

[4] The establishment of the Amani Nature Reserve was initiated in the 1990s with funding from the Finnish International Development Agency, also known as FINNIDA by that time.

village. The majority of people, however, knew about the rules. They were generally considered to be fair and important for forest conservation. The responses regarding the obedience of the rules by the communities were more divided.

Knowledge about the actual contents of the VFR management plans and bylaws was quite low and a lot of confusion prevailed. Many seem to think that all activities in the forest are forbidden. Entering the forest is perceived as shameful; a strong association of the forest with many types of illegal activity remains. The members of the forest committee who patrol the VFR are generally referred to as *askari* (policemen or guards). It appears as if the VFRs continue to promote the earlier tradition in the forest policies, that of alienating people from the forest. This is contrary to the explicit goals of the participatory forest policy.

One-third of the respondents of the household survey could not name any benefits of VFRs (Figure 3); on the other hand, the majority could not name any problems. Those who mentioned problems perceived that there was an increase in the number of animals coming from the forest to destroy farm crops (c.f. Chapter 6); or that some people's farms were appropriated for inclusion in the VFR; or that access to forest products had become restricted. Only a handful of respondents had experienced these problems personally.

While the survey results suggest a prevailing indifference of many villagers towards forest management and conservation, the situation is likely to change in the future if the predicted decline of other tree-based land use systems occurs. Currently, many people collect forest products in their own farm, as well as on lands of their fellow villagers and on general land. But people may attempt to restrict access to resources by others if these become scarcer. In the two upland villages that border tea estates, the tea estate forests are an important source of firewood and building materials. Dead firewood collection in these forests is to some extent tolerated by the company. Yet, unauthorized harvesting of other forest products is said to have already led to minor conflicts with the company.

Village Councils make the management decisions regarding VFRs. Practical management tasks, such as boundary marking and patrolling, are allocated to the forest committees. Each VFR is to be surveyed 1-4 times a month for signs of disturbance. Forest committees have established nurseries to grow native tree seedlings for replanting in the forest. Planting trees on farms is also encouraged. The forest committees have the mandate to encourage other villagers to participate in communal tree planting activities. Nevertheless, most respondents to the household survey stated that they had not participated in any forest management activities. Only those who were members of the forest committee, or

whose family members were, considered that they *'participated'* (as per formulation of the survey question) in forest management.

Joint Forest Management

Kwatango village is located between two national forest reserves, Manga and Kwamarimba. Vihemäki (2005) has described the developments regarding the initiative to establish a JFM agreement between the FBD and three villages, including Kwatango, for the management of Manga Forest Reserve. The process was initiated in 2001 but later interrupted, after the phasing out of EUCAMP. The lack of progress in this JFM process can be partly attributed to the regional forest authorities' lack of trust in the concept of PFM (Vihemäki 2005). Other reasons for the lack of progress in the JFM initiatives of the East Usambaras and in other areas include the slowness to settle benefit sharing arrangements at the central government level. Overall, the process of formalizing JFM agreements across the country has a tendency to proceed very slowly. Underlying this is probably also the unwillingness of some actors within the government to actually devolve powers over valuable resources (cf. Kajembe et al. 2005, Mustalahti and Lund 2009, Reuterswärd and Vihemäki 2007, Vihemäki 2009).

In an interview in April 2008, Kwatango village forest committee members stated that since 2001, they have been part of a JFM agreement on one of the Government Forest Reserves and implementing the forest management duties assigned to them with two other villages. They explained that according to the bylaws of this JFM area, all extractive uses are forbidden and it is the duty of the forest committee to survey the area once a week. The only activity allowed in the JFM area is beekeeping, and this is subject to taking part in protecting the forest from fire. The bylaws also state that violators of the rules should first be punished in the village in the form of a fine ranging between Tsh 5,000-20,000 (approx. USD 4-15) depending on the offence; however, if they behaved disrespectfully towards the village authorities, they could be sent to the district court. The forest committee reported that there had been no offences so far. Nevertheless, the interviewees had a hard time remembering the name of the forest reserve under JFM, and there was a lot of confusion around the dates of establishment of JFM and the VFR as well as the history and functions of the various committees set up to deal with forest management. Back in 2003, the divisional forester argued that it was difficult to involve the villagers in the management of the JFM reserve, and the then village chairman considered that there were no benefits to community participation (Vihemäki, unpublished data). In light of the contradictory information, it is difficult to assess to what degree JFM is operational in Kwatango.

Village leaders and the FBD regional representatives confirmed that the JFM agreement for Manga Forest Reserve remains unsigned. The latter complain of lack of follow-up by the central level of the FBD and lack of clarity of procedures, for example, who is to sign the agreement on behalf of the government. The national JFM guidelines have still not been officially launched although they have been approved by the FBD. The National Treasury (Ministry of Finance) remains hesitant to confirm the benefit-sharing ratio between the government and the communities in JFM agreements[5].

Forest and tree management on village land outside reserves

An important characteristic of land use in the highlands of the East Usambaras is the gradual clearing of primary rainforest for farming land through agroforestry systems that especially in the early stages are tree-dominated and resemble a lightly disturbed rainforest. Spice crops are cultivated under the shade of the rainforest trees that are gradually cleared as the fertility of the soil is exhausted and a shift to subsistence crops occurs. Sometimes a spice agroforestry system is left fallow to recover soil fertility. Village land may thus consist of a mosaic of different land uses including tree-based land covers. But whenever a tree-dominated area is privately owned, even if it has not been cleared but left in the original forest state, it is still called *shamba*, i.e. farm – not forest. In the study villages, the Swahili word for forest, *msitu*, is commonly used only when referring to the reserved area. This is a highly relevant observation for understanding the governance arrangements in the landscape, since distinct management rules and practices apply to these areas that to an outsider may resemble the protected forest. It probably also reflects a landscape history of alienation of local people from forests within the central government reserves (see Chapter 6.1); thus calling an area 'forest' might be associated with disrupted rights to that area.

Firewood, wild vegetables, medicines and building poles are commonly harvested in farms. There are no regulations concerning forest product harvesting outside the reserves with the exception of timber harvesting, especially regarding the so-called reserved tree species. The reserved tree species include species of commercial or conservation value specifically declared reserved upon decision by the Minister (responsible for forests); harvesting these species requires a permit from the District Forest Officer and is reportedly difficult to obtain (see Chapter 5 for a case study of *Milicia excelsa*). Local forestry officials interpret the forest law in such a way that the reserved trees are owned by the government regardless of the tenure of the land they stand on. The only exception to the rule is when the reserved trees grow within an established VFR, in which case the rights to

[5] As of April 2009

these trees are reallocated from the government to the Village Council. This interpretation is also presented by Blomley (2006, 4). The Forest Act 2002 in Section 65 (4) actually states that "… no person may, without a licence or other lawful authority (a) fell, cut, lop, damage or remove any reserved tree or any part thereof *on any general land*…" and Section 65 (3) that "if any general land […] ceases to be general land the provisions of any such order shall cease to apply in respect of such land". This suggests that if the land is not general land but, e.g. village land, the provision ceases to apply; thus the reserved trees on *any* village land, including outside of declared VFRs, are managed by the Village Council. The only complication, then, is how to define where village land starts and general land ends. Whereas according to the Village Land Act (URT 1999b) village land includes any land within the surveyed village boundaries, Alden Wily (2003, 10) sees a caveat in the Land Act (URT 1999a) where 'general land' is defined to also include unused or unoccupied village land. The Land Act definition could be used as a pretext to exclude villagers from considerable areas of common property, including the reserved trees.

In principle, the Village Councils regulate timber harvesting on communal as well as private village land. Felling of mature indigenous trees is not allowed according to the village bylaws even on private land. In one village, the rule is formulated as follows: trees that cannot be cut with a *panga* (knife) but require an axe have to be left standing. If the rule is violated, the offender has to plant 20 tree seedlings per mature tree felled on his farm. One such case was reported.

It is possible to obtain a permit from the Village Council to cut a tree on one's farm for own use. In Kwatango village, a farmer has to pay a seating allowance of Tsh 5,000 (approx. US$ 4) to the 25-person Village Council to discuss his application for a timber harvesting permit. We witnessed one such case where the permit was granted because the farmer was able to justify his application. Harvesting timber for sale requires a permit from the district, subject to Village Council approval. If a farmer wishes to take the harvested timber to the market himself/herself, he/she needs a licence to transport and sell the product. In most cases, however, traders buy timber from villagers directly at farm gate for re-sale at market, in which case these traders are responsible for the relevant permits.

Villagers claim that harvesting of timber on communal village land is rarely allowed. In Misalai, a permit can be obtained from the Village Council, if the applicant (subject to village membership) can demonstrate that he or she has no other means of getting the needed timber (for own use). The application is directed to the Village Council and reviewed by the Forest Committee. In case of a successful application, the council determines the number of logs the applicant is allowed to take from *dead trees* upon a

payment to the council of Tsh 5,000-10,000 (approx. US$ 4-8). The revenue is meant to be used for forest management activities such as paying the forest guards for patrolling or boundary clearing.

The strict rules concerning timber harvesting on private land seem to work as a strong disincentive for retaining trees on farms, although there is no doubt that the purpose of the law-makers was exactly the opposite. When explaining the common aversion to allowing new trees to grow on farms, farmers complain of lack of knowledge of application procedures and difficulty in obtaining permits to utilize the trees once mature. Other recent studies have made similar observations about difficulties in obtaining permits to harvest timber trees in the West and East Usambaras (Reuterswärd and Vihemäki 2007, Vihemäki 2009). The difficulties in obtaining permits can be partly explained by the transaction costs, e.g. need to travel to town to apply for a permit to harvest timber for sale, and the payment itself. At least in the past, the difficulties were also related to the unclear status of previous bans on timber harvesting and which government authority would issue the permits (Vihemäki 2009). Villagers report that as a result of such strict regulations, many people get rid of the trees on their farms 'illegally' or without following the official procedures.

Another factor which may discourage villagers from growing trees on farms while subsequently not being able to utilize them is the alleged illegal logging on general (and possibly reserved) land. During a Village Council meeting where the issue was discussed extensively, villagers expressed strong discontent and concern over the issue, making repeated references to the involvement of 'high level people' in illegal logging. "The same people who come to conduct seminars on forest conservation later return to harvest, and the village does not benefit at all", we were told. "If you see a lorry with timber, they can even shoot you". They narrated how lorries come at night and are loaded with timber on the bottom, then bananas on top, so that only bananas are visible. Villagers wondered why these trucks were not stopped at the Amani Nature Reserve gate on the road to Muheza where all vehicles are supposed to stop for inspection.

5. Links between governing bodies at local and district Levels

As described previously, the formal role of the district is mainly to facilitate the villages on their development, following the decentralized policies. The reforms are considered to have removed some of the powers of district officials and placed them in the position of technical advisors to the communities.

Venn diagrams compiled by community groups (Figures 7-9) reflect the relationships among different institutions with the community. Internal institutions of the village are placed within a large circle that represents the community, with external institutions outside; the closer an institution is to the centre of the big circle, the stronger the cooperation and commitment with the community. The size of an institution circle reflects its importance for the community.

When the Venn exercises were carried out in the study villages, the District Council was mentioned during only one exercise, in Kwatango (Figure 9). In the other villages, more emphasis was put on other organizations, including the private sector and NGOs. In Misalai, it was commented that "the central government [operating through the district at local level] does not care about the everyday troubles of normal people". In Kwatango, however, the District Council was viewed in a positive light, and a villager commented that there was "good collaboration, especially in matters related to education, land and improvement of infrastructure".

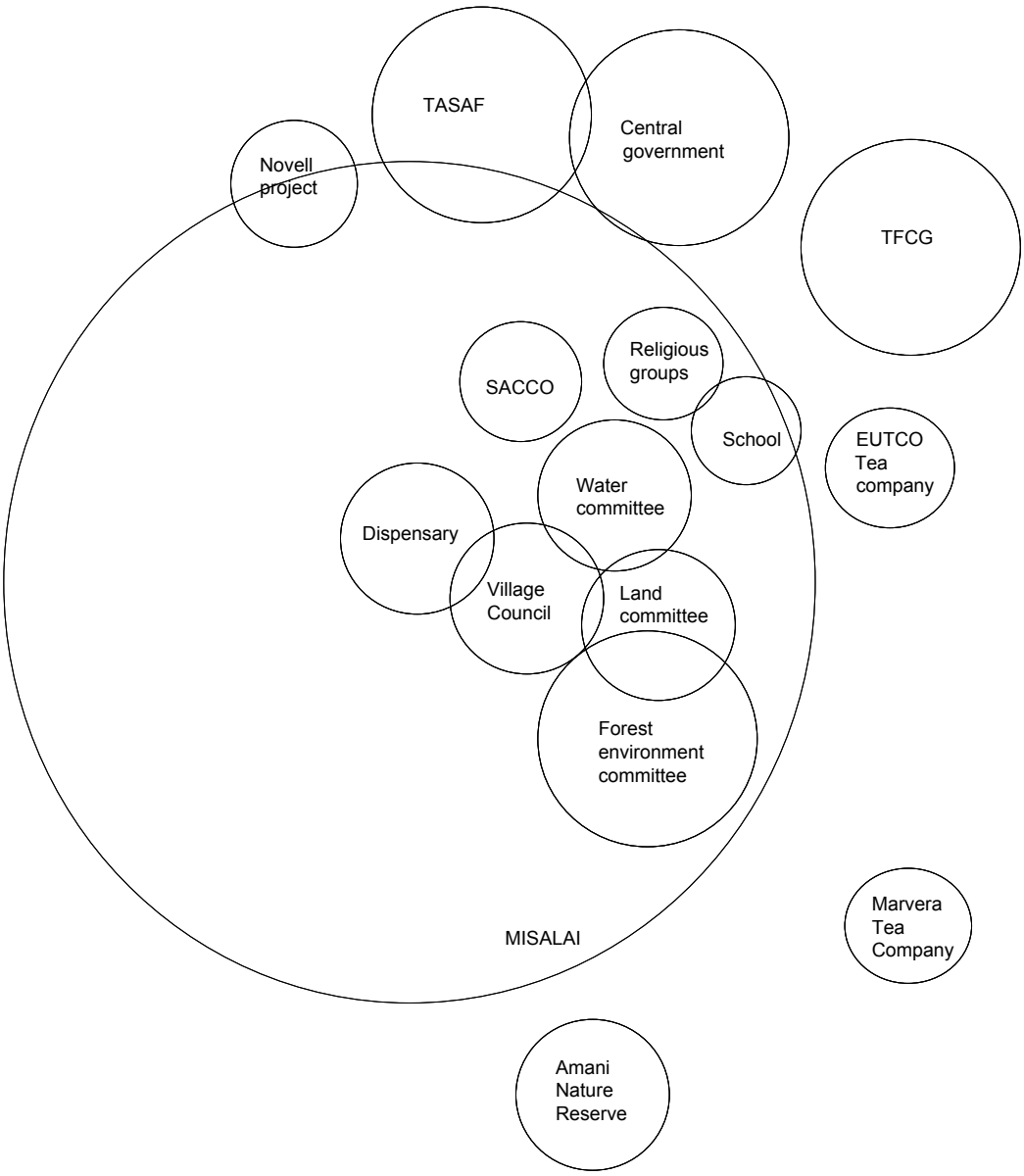

Fig. 7: Venn Diagram, Misalai village

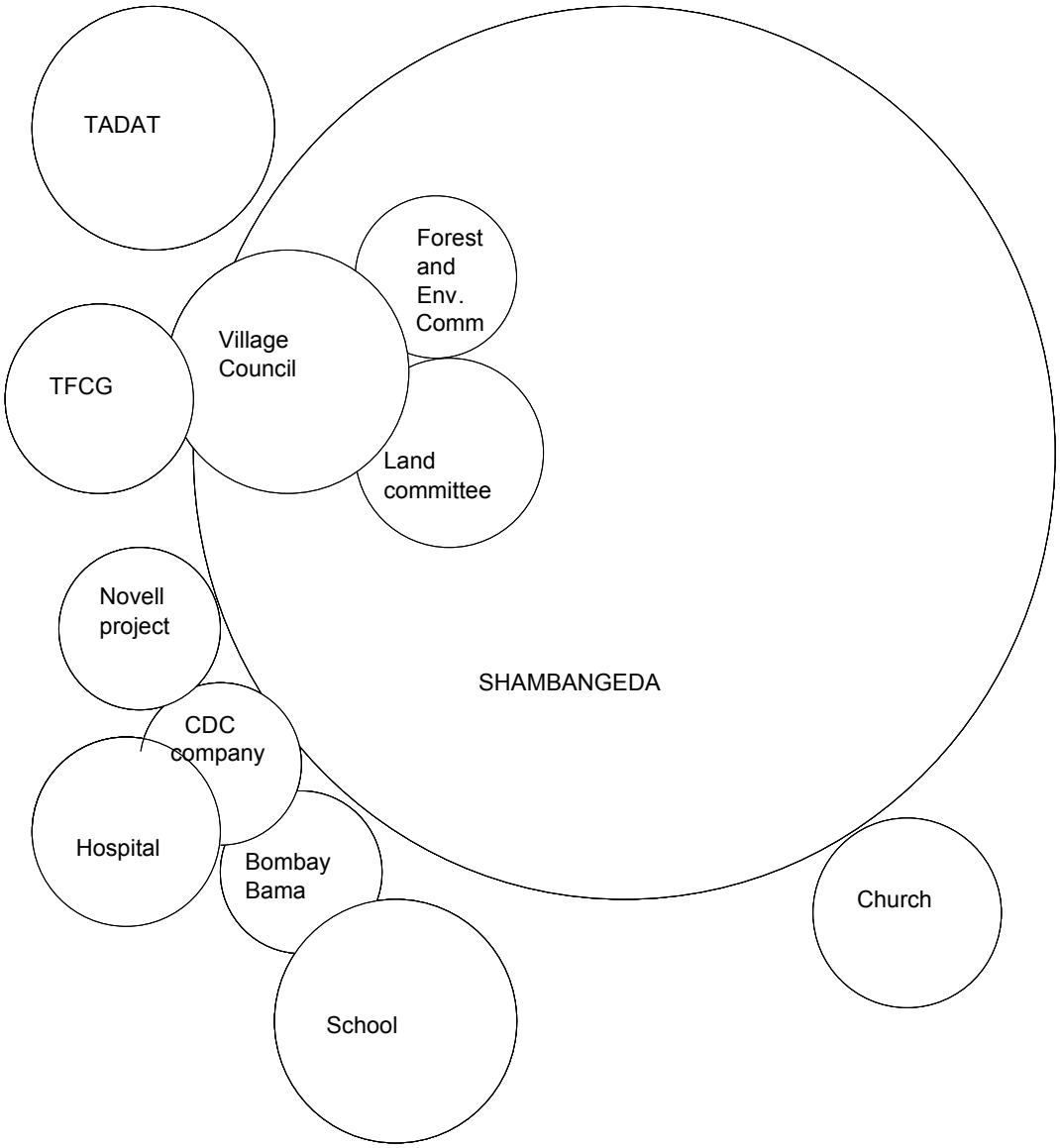

Fig. 8: Venn Diagram, Shambangeda village

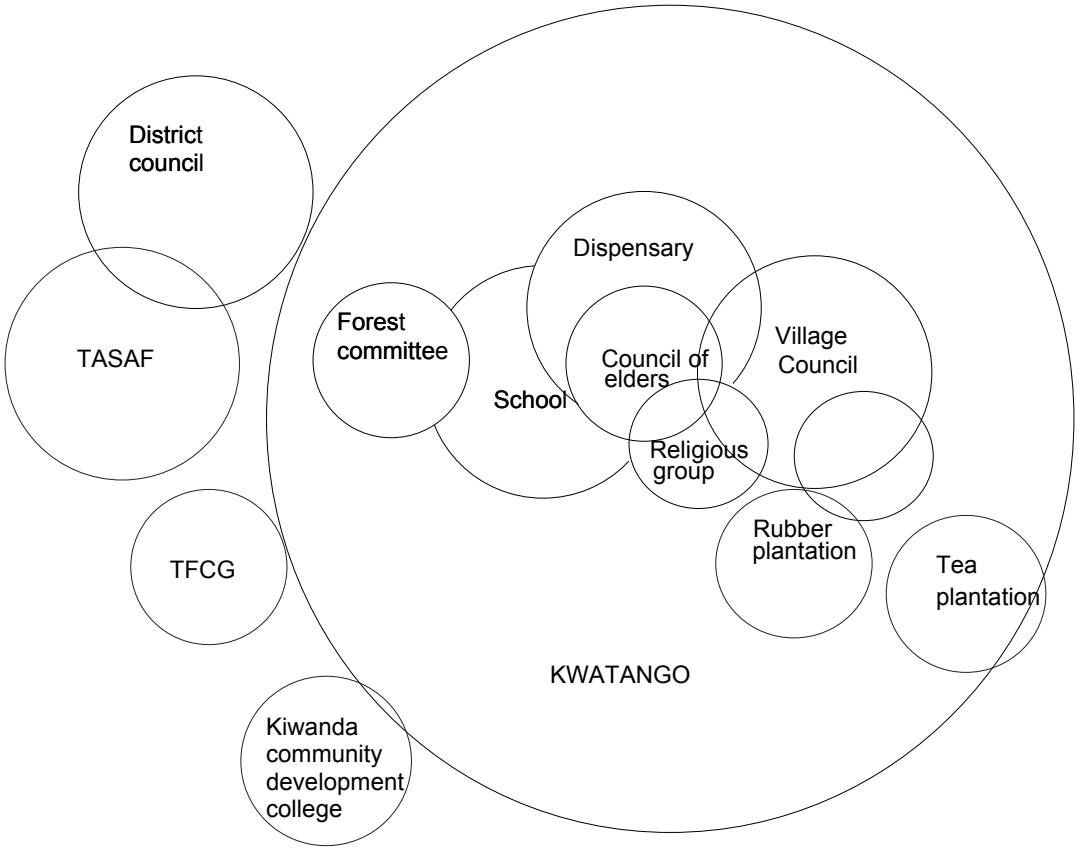

Fig. 9 : Venn Diagram, Kwatango village

In the upland villages, the role of the tea companies in providing services and infrastructure, in addition to employment, is notable (Figures 7 and 8). In Misalai and Shambangeda, the tea companies have constructed and maintain the roads that the villages depend on for transport. They also offer health services, at least to those villagers directly employed by the companies. The children from Shambangeda village attend school constructed by the Marvera tea company ("Bombay Bama", Figure 8).

A study on the institutions and policies affecting management of farmland trees and forests outside of protected areas was carried out by a student affiliated with the Landscape Mosaics project. It concluded that compared to NGOs, the district plays a minor role at village level (Bwagalilo 2009). In addition to TFCG and WWF, one of the

active NGOs operating in the study area is Faida Mali, a national NGO that seeks to link local farmers to markets. In the East Usambaras, it collaborates with the Novella Africa project that has created a market for the Allanblackia tree seeds collected by villagers. According to focus group discussions, the District Forest Officers have been involved with NGOs in awareness-raising activities related to agroforestry and forest management, mainly discouraging tree cutting on farms and promoting tree planting. They have also supplied some villages with tree seeds, e.g. teak in the lowland villages.

District Officers also suggest that the interactions between district authorities and the East Usambara communities are sporadic and limited by the available resources, especially in terms of human resources (e.g. one officer is responsible for all the villages in a district) and transport. Therefore, they are willing to engage the private sector and especially NGOs to partially take over or at least financially support the district functions related to natural resource governance.

During the Landscape Mosaics, the EU FLR project was supporting a Village Land Use Planning (VLUP) process in four East Usambara villages, including the three study villages. The process was facilitated by district staff and led by a consultant from the Mlingano Agricultural Research Institute. The consultant was involved in the process in order to increase efficiency after progress in the first round of VLUP in 2007 in three pilot villages was perceived to be slow. The Landscape Mosaics project added a Participatory Action Research (PAR) component to the VLUP process in the three study villages through capacity-building and training of the district and Mlingano staff in facilitation skills and participatory research and planning techniques. The project also promoted the application of certain participatory techniques, such as visioning and pathways analysis in the diagnostic phase of the planning, and the active participation by a broad range of community members in the process. In addition, the Landscape Mosaics project supported the village and district land use planning teams in all steps of the planning by hiring a full-time PAR facilitator.

Subsequently, district members of the VLUP team visited the study villages more frequently together with the PAR facilitator and jointly carried out training for the village-based VLUP teams on land rights and implementation of the land use plans. Despite this positive engagement, which seems to have been consistent with the intent of decentralized laws and policies in bringing together District Officials and involved communities, the two projects have so far financed all the District Officers' visits to the communities in terms of providing the transport and daily allowances. Therefore, the sustainability of more

frequent interaction between the officials and the communities beyond the projects' interventions remains questionable.

The donor-funded National Forestry and Beekeeping Program of Tanzania (2001-2010) had a strong focus on PFM, and resources were directed to the regional and district forest offices to support CBFM and JFM activities, including those in Tanga region (G. Batulaine, Embassy of Finland, personal communication, 7th April 2009). The Muheza District Forest Officer agreed that this program support had enabled them to acquire a vehicle for PFM activities, used for quarterly forest patrols and awareness-raising in the villages. However, most (if not all) CBFM activities in the East Usambaras initiated since 2004[6] had been launched by the EU FLR project with which Muheza district was partnering. A full-time TFCG project coordinator was mainly in charge of initiating CBFM in the villages.

The TFCG project coordinator reported to the district quarterly. Yet, the point in the process of establishing a VFR where district staff actually became involved was when a VFR management plan and bylaws, already formulated in collaboration with the TFCG project coordinator and the involved community, needed to be reviewed by the district lawyer for coherence with land and forest laws. Each management plan and related bylaws were then to be approved by the District Council. At this stage, the District Council could suggest possible changes, and if necessary, the plan was sent back to the community for discussion and approval again by the Village Assembly. An approved VFR management plan and bylaws were to be signed by the District Executive Officer and District Council chairperson. Nine new VFRs with the final district approval had been established in the landscape between 2006 and 2009, with support from the EU FRL. The project had also assisted the district to acquire register books for keeping records of the VFRs. According to the TFCG project coordinator, acquiring the final District Council approval for VFRs was a major bottleneck in the beginning of the project. Approval of VFRs did not appear at the top of the District Council's meeting agendas. To tackle this, the project coordinator tried to schedule the introduction of several VFR management plans at the same time for approval at one go in one District Council meeting.

In spite of the move away from district 'policing' towards partnering in CBFM according to the current forest policy dating to 1998 (c.f. Section 4.2.2 above), the district officials seem to be mostly preoccupied with maintaining and implementing government control over tree harvesting. This is experienced by community level stakeholders as massive bureaucracy from village to district level related to obtaining the relevant permits for

[6] Pilot activities in the 1990s were launched by the EUCAMP program.

harvesting on-farm trees. Extensive confusion regarding the rights to trees and harvesting rules and regulations at village level further impede villagers' control over local resources. Vihemäki (2005) notes that some of the contradictory advice-giving may be deliberate; when interpretations of rules and regulations are unclear, it leaves some actors room to manoeuvre the system to their benefit. However, there are several undesired consequences at village level. The difficulties of utilizing timber for livelihoods may a) function as a disincentive for planting or keeping trees on farms where they are seen to compete with other crops, over which farmers have more control; or b) result in resorting to illegal means to acquire the needed timber and black market timber sales. Perceived corruption related to the government forest administration and distrust of the village leadership amongst some groups may also weaken people's trust in diverse conservation initiatives and willingness to participate in tree and forest management (Vihemäki 2005, Vihemäki 2009).

In summary, district officials welcome collaboration by NGOs in the implementation of the decentralized natural resource policies and to some degree this involvement may have resulted in improved efficiency and accountability in the desired actions. On the other hand, the district administration has become increasingly dependent on these well-meaning outsiders and project-based funding to carry out their duties in natural resource governance. It is therefore questionable whether the positive changes towards implementing the decentralized policies that have taken place in the East Usambara landscape in recent years are at all sustainable. Some academics also question the genuineness of government officials' motivations to promote decentralized natural resource governance (cf. Kajembe et al. 2005, Mustalahti and Lund 2009, Reuterswärd and Vihemäki 2007, Vihemäki 2009), as have done some NGO actors during informal discussions. Whatever the case, even the best of intentions may fall short if district level implementation of natural resource policies requires an external financial and political 'motor' to remain operational.

6. Cases that bring regulations to life

6.1 *Msambu* as a locally important commercial and well-managed species

Villagers in the East Usambaras obtain income from the sale of a variety of forest products. The oil-yielding seeds of the tree *Allanblackia stuhlmannii* (Clusiaceae), locally known as *msambu*, are among the most important (Figure 10). Although *Allanblackia* is common throughout much of the higher elevation of the East Usambaras, prior to World War I, the tree had limited local use as timber and medicine. Villagers recall their first introduction to commercialization of the seeds, when an Indian man began purchasing the seeds on a small scale in the 1970s. In the 1980s, seeds were bought by a company and exported to Kenya (Ruffo 1989). More recently, a partnership called the Novella Africa Initiative, involving the international company Unilever, International Union for Conservation of Nature (IUCN), World Agroforestry Centre (ICRAF), Tanzania Forest Conservation Group (TFCG), Faida MaLi and various other NGOs, has led to the significant development of this product. When asked about traditional beliefs or stories surrounding this tree, people recount the story of the development of Faida MaLi and its trade.

Novella now buys *Allanblackia stuhlmannii* nuts for TSh 250 (about US$ 0.20) per kilogram. Both men and women collect seeds from fallen fruit, sometimes with the help of children. Most of the trees are found in tea company forests (from which anyone can harvest) or on individual farmland. Harvest is seasonal, from February to May.

The importance of *Allanblackia* as a source of income has led to the development of clear rules governing its use. Despite the absence of traditional management rules for *Allanblackia,* the strength of local government systems has allowed for new rules to be determined and disseminated efficiently. In Tanzania, every village government has a forest or natural resource committee responsible for both setting new and enforcing old rules regarding the use and management of trees. This has allowed previously unmanaged *Allanblackia* to become a success story for local community-based management. Marco Mgunga of Misalai village told us, “There used to be many [*Allanblackia* trees], but now there are less after many were cut for timber by the saw mill company in 1949.” The contrast between unrestricted historical harvesting and current practice couldn’t be greater.

Musa Omar Kipingu of Shambangeda explained the situation under current rules, "Cutting of *msambu* is not allowed under any circumstances … if you cut one young tree, you will be fined TSh 5,000 (about US$ 4.50) and you have to plant ten trees. If you cut a mature tree, you will be sent to court." Although these new rules are restrictive, most local people seem to support the current regulations. Margaret Chilambo commented, "Now *[msambu]* is a more valuable tree than in the past. It is a tree that should be taken care of."

Fig. 10: Benjamin Njiku shows an immature fruit on one of six msambu trees on his farm

6.2 *Mchunga* as a species central to local subsistence

Launaea cornuta is a highly valued leafy vegetable in the East Usambara Mountains: it is the region's most famous food. Local people call it by its Shambaa name, *mchunga,* which means 'bitter'. The species grows wild in fields and disturbed areas across much of Africa. Knowledge of its use as a leafy vegetable has been recorded in many tribes, but its consumption is limited outside coastal regions of northern Tanzania and southern Kenya (Maundu et al. 1999). Here, women are proud of their knowledge of correct preparation methods; lack of this knowledge may be the reason it is less commonly consumed in other areas.

Food plays a central role in defining both individual and collective identity (Fischler 1988); *mchunga* and the culinary system of which it is a part is an excellent example of this. Outsiders and local people alike consider *mchunga* the 'traditional' vegetable of the Shambaa, Bondei, Zigua and Digo tribes who live in and around the East Usambara Mountains. One key component of the local cuisine is the contrast between bitter and slimy vegetables. As the meaning of its name suggests, *mchunga* is the prototypical bitter vegetable. As is often the case with culturally important foods, there are a number of taboos on the use of *mchunga*. One of the primary taboos is against pregnant women consuming it. Other less widespread taboos, usually against eating all bitter vegetables, are often prescribed by witchdoctors to prevent or treat illnesses or curses.

In comparative nutrient composition studies, *L. cornuta* has been shown to have higher levels of many micronutrients than many other leafy vegetables consumed in East Africa (Lyimo et al. 2003, Msuya et al. 2008). Despite strong cultural importance, excellent nutritional composition and widely reported medicinal properties, *mchunga* is praised primarily for its superior taste. Josephina Lukindo told us, "*Mchunga* is better than [other leafy vegetables]. We eat it because of its excellent flavour and not because it helps bodies to grow."

Because *mchunga* is so common, there seems to be a low risk of overutilization. In Kwatango village, *L. cornuta* is plentiful enough that women reported sometimes harvesting it in groups. *Mchunga* is sometimes sold on the market. Mary Vincent explained that, unlike in Kwatango, in areas closest to markets one cannot pick *mchunga* from someone else's field. Women are aware that their harvesting methods may affect conservation. Mwanahamis Ayub told us, "You must instruct your daughter how to harvest *mchunga* because some harvest by pulling up the whole plant". Although there is no evidence of a need to conserve *L. cornuta* itself, the agricultural and fallow land it grows on is important for landscape-based management and biodiversity conservation in the East Usambara Mountains. The cultural and nutritional importance of this and other traditional food plants may provide impetus to local people to conserve the ecosystems in which they grow.

6.3 Pest species – *nguruwe* and *kima*

Dependent on subsistence agriculture, the Shambaa people of the Usambara Mountains have struggled with pest mammals for as long as oral history recounts. Local people report

the three most important pest species to be: *Panya buku* (Giant Pouched Rat, *Cricetomys spp.*), *Kima* (Blue Monkey, *Cercopithecus mitis*), and *Nguruwe pori* (Bush pig, *Potamochoerus porcus*).

When asked to compare the cost vis-à-vis the benefit of living with these pest species, villagers unanimously voiced the opinion that the damage caused by these species far outweighed any benefits. For example, despite the fact that hunting is a culturally important activity – an important way through which men gain social status – villagers in Kwatango hunt as an endeavour to exterminate the species. Despite reported falls in the pig population, significant crop losses are still said to occur. There was a strong perception that fields close to homes suffered less damage than those near forest reserves; some farmers even reported abandoning fields close to reserved forests.

For more than 50 years, a group of men in Kwatango village has been cooperating to hunt bush pigs with dogs and spears; local people refer to the group as a cooperative. The men pay close attention to patterns of crop damage, have detailed knowledge of behaviour and ecology and are proud of their successes: "We go to hunt in groups, we select people [to join us] who are brave. It is too dangerous an animal to go alone." (a hunter from Kwatango, March 2009). Discussion about hunting *kima* has a very different tone; it is a practice viewed as a necessity, with much less bravado or glory associated with it than bush pig hunting. There is a strong cultural taboo against eating *kima*, and thus a fear of being seen as 'one-who-eats-*kima*' limits boasting about hunting skills. Despite these taboos, both *kima* and *nguruwe pori* are likely eaten frequently enough to be an important source of often lacking micronutrients in the local diets. Previous research in the East Usambara Mountains has reported households hunting 1-2 times per week in nine out of ten villages surveyed (Woodcock 2002). Although much less marketed than in most other parts of Africa, bush meat has the potential to quickly become a valuable commodity in East Africa as well. Given that hunting the pig remains legal in Tanzania and simultaneously provides meat for consumption and rids the area of pests, the view that this is an appropriate solution is no surprise.

Feierman (1974) asserts that the bush pig is central to the Shambaa people's representation and understanding of their local environment. Many magical uses are reported, and bush pigs frequently appear in local stories and myths (see Appendix 3). Feierman (1974) recounts the story of the first king of the Shambaa people, the great hunter Mbegha, who was made king because of his powers as a bush pig hunter, both giving the people meat and killing the age-old agricultural threat. Children play "bush pig hunting"; clearly hunting bush pigs is a culturally important tradition. Conversely, hunting Blue Monkey is

not considered of cultural importance since it is an agricultural necessity. Dialogue about local agriculture almost always includes the problems farmers face in dealing with *kima*.

Although scientific information on actual populations is sparse, bush pigs are undoubtedly threatened. Whereas all hunting is strictly prohibited in neighbouring Kenya, the hunting of many species is only prohibited in reserves in Tanzania. No government policies currently protect these species, and traditional local practices offer only limited support for their conservation. The social and cultural importance of hunting the bush pig and the value of its meat may prove key to developing a sustainable relationship between the Shambaa people and one species that has raided their fields for generations.

6.4 *Mvule* – a locally endangered species

Milicia excelsa (Moraceae), locally known as *mvule,* yields some of the most valuable timber in East Africa. In addition to its importance as an income generating timber species, *M. excelsa* is used locally for building materials, household items and agricultural tools (Figure 11); provides firewood; and is used locally for magic. "Ashes [from burnt leaves] are placed on the skin so that you do not feel pain when you are beaten. You can even be beaten to death but you will feel no pain", Amina Njiku explained.

This tree was originally common throughout forests and farmlands of the East Usambara Mountains. However, its slow growth rate, high value as timber and the long and extensive history of logging in the area have, in combination, led to overharvesting. *M. excelsa* is on Tanzania's list of nationally conserved trees. Special regulations govern its harvesting, whether the trees are found on private, public or reserved land. To cut a tree, the forest committee of the Village Council must grant permission and a permit from the District Forest Officer must be obtained. For the most part, local villagers seem to understand the importance of these regulations; however, illegal harvesting of *M. excelsa* is common and not concealed. Corruption is likely to be an alternative, easier and cheaper route to obtaining the appropriate paperwork required to cut down *M. excelsa* trees.

In addition to the strict government regulations surrounding the tree, there is a rich collection of traditional beliefs that may have historically mediated its use and conservation (see Appendix 3). One such belief, which seems to have originated long before any environmental education efforts in the area, is the association of *mvule* with the creation of thunderstorms. In the past the tree was avoided as firewood because it was believed that it would attract lightning to the house. Another belief tells that some *mvule*

trees have ‘stones’ inside, created when the tree was hit by lightning. A further Shambaa belief is that the trees house ghosts. “*Mvule* is the place to put ghosts. A platform is built under the tree and eggs and ripe bananas are placed on it. They put a piece of red or black cloth [on the platform] … people sing this song: *Dakwea kwemzue nadiona dinga dienge swamanga swamanga* [It is climbing the *mvule,* it looks like a bird, like a dove].” According to Ramadhani Salim of Misalai, “After 7 p.m. in the Kisiwani area, people stop going near *mvule* trees because it is the time when ghosts come out”.

Fig. 11: A piece of mvule timber being used to make a stool for local use

7. Local management of environmental and cultural services

7.1 Customary management of environmental and cultural services

In the East Usambaras, the customary rules and practices of natural resource management have been shaped by several social and economic changes since the pre-colonial era. *Ujamaa*-era policies and immigration waves fuelled by livelihood opportunities in the logging industry and tea plantations, along with favourable agricultural conditions, have created communities which are mixed in terms of ethnicity and origin. According to the

Landscape Mosaics project household survey, on average half of the present population belongs to the Shambaa group[7] and the rest represent a variety of other groups. The Kilindi rulers of the Shambaa developed an extensive kingdom in the Usambara Mountains, including the eastern part over the course of the 19th century (Feierman 1974, 1990). Some of the present-day inhabitants are descended from ancestors in the East Usambara Mountains, while many are newcomers from other areas.

Today, the 'customary' rules regarding management of natural resources are a mixture of Shambaa traditions with influences of later immigrants and community-based decision-making that has been influenced by directives from colonial and post-independence governments. Market fluctuations of agricultural commodities and timber, and conservation narratives that have dominated forest management policies of the East Usambara since the late 1980s, have also affected the local population's conceptions and practices regarding natural resource management.

An account of the customary management of environmental and cultural services by the Shambaa is provided below. It derives mainly from the comprehensive works by Feierman (1974) and Woodcock (2002), followed by a brief reflection on the traditional practices against a history of external governance influences and the extent to which these practices can still be observed.

Woodcock (2002, 93) provides a classification of land cover in the pre-colonial era (1740-1892), deriving from accounts given by elders. Land was differentiated into wilderness areas that were uncultivated, further divided into subcategories of different types of forest and bush land, as well as various cultivated land covers. Wilderness areas held regenerative and healing powers associated with water or rain. In addition, several areas were associated with rituals for making rain, typically on forested hilltops or ridges. Some forests were managed by specific clans.

The Kilindi, the ruling class, held most of the rights over the ritual forests, while other Shambaa leaders had access and use rights for ritual purposes and the responsibility to enforce rules. To community members, ritual forests offered a place for private initiation ceremonies and regulated access to some forest products. Although the Kilindi king 'owned' all land in the sense of political authority, ritual and clan forests were under communal tenure (Woodcock 2002, 102). Leaders of clans held the rights to make and enforce rules over the clan forests, distribute land to clan members and control the felling

[7] There is evidence of human settlements in the northern zone of the East Usambaras, which has been dated to the Early Iron Age. The *Shambaa* arrived later, probably from other parts of what now forms the United Republic of Tanzania.

of trees. Clan members had the rights to access and use forest products and services, including land and trees upon permission from the leaders. Before trees could be felled, sacrifices were to be performed in order to calm the spirits of ancestors who resided in the forest trees. Parcels of land allocated to community members – whether cleared or uncleared forest – were managed privately; likewise, rights to use and manage the land could be bought and sold privately, though not the land itself (Woodcock 2002).

Tree tenure was strong and tied to land rights; individuals had rights to use and dispose of both planted and retained trees on their parcels. On communal land, the one who planted trees had the right to use them whereas wild trees were communally owned. Clan members had access to trees on individual fallow land (Woodcock 2002, 105). This custom is still observed in the study villages, where it is common to collect firewood or building materials on other villagers' fallows or farms. Women's rights to trees correlated with their land rights, revocable upon marriage or divorce (Woodcock 2002, 106). Today, women or any others who access land by borrowing feel they do not have the right to make a decision about planting trees on it.

Feierman's (1974) study reflects a kind of a dualism in the relationship of the Shambaa to their environment. The men not only inherited their fathers' property but also their fathers' skills and knowledge related to agriculture, soils, rainfall, medicinal plants and traditions regarding forests. They learnt these skills to be able to provide for their families but it was also believed that without knowledge of the rites and spells, men would die (Feierman 1974, 32). Thus on the one hand, the close relationship with wilderness as a provider of life was emphasized and nurtured. Yet, on the other hand, there were more material concerns; each man was supposed to marry as many wives as possible and provide for each of them and the children.

Feierman (1974, 33) notes that in pre-colonial times, young men could acquire additional land by clearing forest fairly easily. Based on archaeological findings and species composition in landscape patterns, Hamilton (1989) suspects that virtually all forest on the East Usambara Mountains have been influenced by human beings to some extent over time.

The colonial era in the East Usambaras, first with the Germans, then the British ruptured the traditional land and forest tenure system (Hamilton and Mwasha 1989a, b). Land was divided into forest reserves, private commercial estates and to a lesser extent, public land for the 'public' (Hamilton and Mwasha 1989a). The British colonial government was interested in enforcing top-down, exclusionary conservation of forest for provision of

water, climate regulation and soil erosion control (Hamilton and Mwasha 1989b). After independence, new policies were introduced to reverse the 'alienation of the local population from land in estates and reserves', leading to expansion of public land and agricultural encroachment into the forest reserves, as observed by Hamilton and Mwasha (1989c).

On public land, local people continued to hold access and use rights to forests with the exception of the reserved trees – but without management responsibilities (Woodcock 2002, 113). Woodcock (2002) argues that much of the customary management of forests was eroded during the colonial period. By the 1950s, traditional leaders had lost much of their authority, and people no longer sought their consent for felling trees. During this time, immigrants from other parts of Tanzania also started pouring into the area. Many of the newcomers lacked any social, cultural or spiritual relationship to the forests. In practice, forests, even in the reserves, were often converted into *de facto* open access regimes (Woodcock 2002, 126).

Woodcock (2002) observed the same phenomenon in the 1990s that we have observed today; that most local people do not consider that they own the forest, such as Village Forest Reserves. In fact, anyone seen entering such areas is considered a 'thief' – despite the fact that VFRs have been established as part of the PFM movement to devolve forest management rights and responsibilities to the communities. The same applies to the government forest reserves, to which people still feel they have a right to access albeit recognizing that it is 'illegal'. However, contrasting a decade of PFM implementation with a hundred years of disruption of customary tenure might be unfair; to truly return ownership of forest and land to the communities will probably take many more decades.

Another point of congruence between ours and Woodcock's research is the observation of a growing readiness of local people to discuss the environmental benefits of forest conservation, included in the environmental education packages of many conservation projects started in the 1980s and 1990s (Woodcock 2002, 131). Nevertheless, the management of environmental services in the East Usambaras has a much longer history. As noted above, the British were concerned over the matter, but the role of forests as provider of water, rain and diverse products was also central to the Shambaa and influenced their customary forest management practices. Yet, we do not know to what extent traditional management rules had to give way to more material needs or to what extent they led to unsustainable management of the landscape in pre-colonial times – but perhaps some insight can be gained from the fact that today, water and rain are overwhelmingly agreed to be the most important benefits of forest conservation. Some of

the current village bylaws and community procedures of management of forest, geared towards conservation of environmental services, have strong resemblance to some of the customary Shambaa traditions. However, the rules of today seem to be more severe – whether due to an influence of recent conservation policies and external conservation actors, or as a response to an escalating environmental crisis experienced by the communities themselves – or a combination of both factors.

7.2 Enhancing local management of water services through participatory action research

East Usambara Mountains are the major source of water to the communities surrounding the area, towns (Maramba and Muheza) and the city of Tanga. One big river, the Sigi River, and a number of streams and natural springs all originate from the East Usambaras forest and run out over the landscape. The Sigi River is the primary water source for Tanga city with over 200,000 inhabitants. In addition to being the source of domestic water, it also provides water for many of the industries, such as sisal, soap and cement factories and irrigation water for the lowland agriculture in the Tanga area. Misalai and Shambangeda villages are located in the upper catchment of Sigi where smaller streams feed the river, while the river runs straight through Kwatango village in the lower elevations.

The current state of water availability in the landscape is a matter of concern and is increasingly central to village level environmental management. During the community visioning exercises as part of the Village Land Use Planning process facilitated by the Landscape Mosaics project, this concern ranked high in all three participating villages. As a result, the focus of the Participatory Action Research (PAR) component of the Landscape Mosaics project has evolved around local management of water sources and river banks in these villages. This last section of the report describes the early stages of the PAR process as an example of current local management of environmental services through a facilitated bottom-up process building on the opportunities of village level governance of natural resources. Monitoring of the PAR is expected to provide us with more information on how communities can develop agreeable strategies (accepted by all groups) for local management of environmental services, and help understand the key elements (policies, institutional practices, negotiations or other) for the required collective action.

A group of volunteers in each village (hereafter, 'PAR groups') started the process facilitated by the project field coordinator to come up with action plans for improved community management of water sources and river banks. As some of the first steps, the community PAR groups visited all water sources in the village territories and carried out a problem and stakeholder analysis (Table 10). The main causes for the declining water sources that they identified for urgent attention by the communities included environmentally unsustainable farming activities at water sources, tree cutting, planting of heavy feeder trees and stone and sand quarries at water sources. Some of the underlying causes that the villagers identified included inadequate capacity to deal with environment concerns, coupled with lack of financial and personnel resources for water source management at local level, and population growth creating a high demand for arable land.

Table 10: Summary of the main stakeholders in the management of water sources and river banks in Shambangeda, Misalai and Kwatango villages

Problems related to management of water sources and river banks	**Stakeholders**	**Stakeholder interests**	**Who should be involved in a process aiming at a collective solution to the problem?**	**How should they be brought together?**
1. Farming on river banks, near water sources and in wetland areas	a) Farmers b) Water users	a) Food, income b) Clean and safe water	- Farmers - Village Council - Tanzania Forest Conservation Group	Involving them in negotiation for an action plan through - communal meetings - meetings with individuals - visits to water sources
2. Planting of heavy feeder exotic trees such as eucalyptus near the water sources	a) Tea company (EUTCO) b) Villagers	a) Firewood b) Firewood, building materials vs. safe and clean water	- Tea company - Villagers	Involving them in negotiation for an action plan through meetings
3. Mining at the river bank and near the water sources	a) Miners b) Water users	a) income b) Clean and safe water	- Artisanal miners - Villagers - Village Council - Amani Nature Reserve	Involving them in negotiation for an action plan through - meetings - education
4. Human settlement at the river bank and near the water source	- Villagers	- Getting water easily	- Villagers - Village Council	
5. Grazing near the water sources	- Livestock keepers	- Pastures	- Livestock keepers	
7.Cutting down trees at the river banks	a) Farmers b) Timber harvesters c) Miners	a) Building materials b) Income	- Farmers - Miners - Timber harvesters	Involving them in negotiation for an action plan through - communal meetings - visits to water sources
8.Bush fires	a) Hunters b) Farmers c) Miners	- Income - Food	- Hunters - Farmers - Miners - Government	

To address these problems, the PAR groups identified strategies to serve as the core of action plans for improved water source management. First of all, best management practices for agriculture to control soil erosion and prevent contamination from pesticides and fertilizers were to be adopted by farmers. It was envisaged that cultivation should be allowed no closer than three metres from the river and wetlands, as farming activities within the wetland area contribute to the drying of the wetlands. The government and the tea company were to be involved in the removal of all eucalyptus trees in the landscape due to their excessive of use ground water. Furthermore, environmental education and promotion of tree planting activities around the water sources were conceived as important. It was also suggested that the PAR groups would need to conduct regular monitoring of all water sources to make sure that they are protected as planned.

The community PAR groups also identified challenges to the management of local water sources. A big challenge to the sustainable management of water sources felt by the PAR groups in the two upland villages bordering the tea company forest was the planting of eucalyptus by the company to produce firewood for tea curing. The tea company highly depends on this fast growing species so it will probably be difficult to convince them to change the species. The challenge ahead is illustrated by the comment by one of the PAR group members from Shambangeda village: *"*A strong committee like the Sigi River Basin Conservation Committee failed to convince the company to change the tree species planted in their forest, so how can a small committee like us convince them to change?"

Another big problem was the high demand for cultivable land in the densely populated upland villages. Many farmers have small plots of land and depend on the wetlands where they can cultivate throughout the year; for some a parcel at the water sources is the only farming land they have. These farmers would be especially affected by restrictions on cultivation near water sources. This issue turned out to be a real bottleneck during the early community discussions. Therefore, the facilitators decided to give the wetland issue less attention in the early negotiations and return to it at a later stage of the PAR process. The group members also raised the issue of climate change which may have significant impacts on water sources around the landscape, and hinder the positive outcomes of implementing the management plan.

During the Landscape Mosaics, the three villages took important steps to launch a process for improved management of water sources locally. Yet, the local people were also fully aware of the challenges and the complexities which needed to be addressed at the landscape scale to achieve sustainability in the provisioning of water services. The links

between levels of governance and cooperation among the different stakeholders, communities, government, NGOs and private sector appeared as increasingly crucial.

8. Conclusion

In the East Usambara landscape, the current formal institutional framework provides a relatively conducive setting for promoting negotiated, collaborative landscape governance. This holds especially in the areas where management rights and responsibilities are devolved to the communities, such as the VFRs or other village lands. The governance framework gives Village Councils and Assemblies real decision-making power on many issues related to natural resource management. They can also execute actions devolved to the village level. In the Landscape Mosaics project study villages, the individuals who are most involved in the village decision-making bodies, or have connections to them, seem committed to the forest and environmental conservation agenda. In addition, the experiences from Participatory Action Research indicate that mobilization of people around issues that are considered important by most villagers, such as access to safe water, may occur even in the absence of financial support.

Yet, the level of participation in natural resource management activities and related decision-making often remains low for those who are not involved and connected to the village council or relevant committees. It is often difficult to include representatives from the private sector in discussions about collaborative governance at the landscape level. Poor representation of private sector in the meetings of the project limited the extent to which the decisions made and strategies developed to improve natural resource management reflected all the important stakeholders' interests. Thus, there is much scope to improve the governance of natural resources in this landscape by making it more inclusive to different community groups and other stakeholders. In addition, it remains to be seen whether the activities launched under the PAR element of the Landscape Mosaics and facilitation by the project staff spread into new areas, and how actively those who were involved continue to conduct meetings and activities independently of the external facilitation. The short time frame of the project may make it difficult to institutionalize the new innovations developed to water source management in the study villages, and more broadly, the use of the new participatory methods by those responsible for coordinating and facilitating Village Land Use Planning processes.

In addition to questions on the scope of impacts of the processes facilitated by the project and other external actors such as the EU FRL, we identify challenges to collaborative landscape management in the existing governance structures, e.g. inadequate funding and lack of capacity at the level of local government. The support from the district to the villages to improve natural resource management seems weak if there is no external intervention, in the form of funding or facilitation support. This renders the sustainability of the initiatives that aim to improve natural resource management questionable, and may result in poor coordination between the local initiatives in different villages. It is not clear who should fill the gap in coordinating and supporting local initiatives – districts, wards or NGOs. A potential risk related to the central role played by NGOs in supporting or facilitating natural resource management initiatives is that their own agendas may dominate agenda setting. Another key challenge in the operation of the governance mechanisms is the lack of clarity and confusion over the locus of decision-making authority and rules and regulations related to commercial timber harvesting. This increases the scope of misuse of position by the actors involved in regulating the business and feeds mistrust among the villagers towards the forest authorities.

In relation to the effectiveness of governance innovations in reconciling diverse interests in landscape management, we had some inspiring experiences from visioning and PAR. New approaches or strategies would probably be useful to try and engage district and private sector more in collaborative efforts on improving natural resource management at the landscape level. Yet, the success of innovations is likely to be limited by structural factors that are difficult to address through local innovations or experiments.

Appendix 1. Governance theme cross-site study: main topics as defined in the project's field methods guide

1. Stakeholder identification

In general, the information needed will include who the stakeholders are, their relative power, rights and responsibilities. This process will include observations, interviews and/or focus group discussions with knowledgeable people, and the use of the Who Counts Matrix (Colfer et al. 1999). Additional important issues, which can be represented in tabular form, will include determination of which stakeholders use local resources in what ways and obtain which benefits, which stakeholders have which decision-making rights and powers, and the nature of interactions among stakeholders (e.g., nature of their interaction, conflicts and possible solutions).

2. Formal levels of government

This is a simple description of how the government is designed to work. There should be a discussion relating to the local, district, provincial/state, and national governments (or whatever hierarchy applies in your country), with a short and general description of their responsibilities that affect the people and natural resources in the landscape. Give a sense of the 'reach' of these government levels into the community (How powerful are they? How segregated is the community from government intervention?). Identify briefly any pertinent historical background and important trends.

3. Governance of natural resources

This is one of the most important parts of this study, and will require efforts at several levels, in each case differentiating between the *ideal* (how things are supposed to be done) and the *real* (how things really happen):

- *Local*: Examine and describe the local tenure situation (including any differences in land and tree tenure and social differences in access/ownership, such as gender, ethnicity, social class), keeping in mind possible differences related to landscape patches. Document important management regulations and possible environmental ethics. Explain mechanisms for and attitudes toward enforcement (including assessment of effectiveness and any social differentiation). Explain the sanctions that can be and are applied (including possible supernatural sanctions). Identify any disincentives that interfere with sustainable management. Explain local conflict resolution mechanisms, with examples of how they work.

- *Districts or landscape*: Explain the views of district-level participants about local tenure (land and tree, if relevant). Again, explain pertinent regulations, enforcement procedures and effectiveness; existing sanctions and how effective they are; and conflict resolution mechanisms. Explain disincentives for sustainable management and possible corruption problems that may interfere with good management. Address any prejudicial attitudes and behaviour toward particular social groups or categories of people.

4. Links between governing bodies at local and district levels

Identify important issues, conflicts, and existing collaboration between the two levels of governance. Describe communication patterns and trust levels between the two levels. Identify (through appreciative inquiry) opportunities for improvement in the relationship/collaboration (e.g. opportunities that could lead to increasing trust, strengthened communication, greater self-confidence on the part of local communities or marginalized groups, attitudinal change on the part of bureaucrats toward openness, etc.).

5. Cases that bring these regulations to life

The project will be identifying several species of importance locally for both livelihood and ecological uses. Select five of those cases, and explain their management:

- A species that is commercially important
- A species that is central for subsistence
- An endangered species (locally at least)
- A well managed species
- A 'pest' species.

In selecting the species, it will be important to consider and document the nature and condition of the patches in which they grow and the social categories of individuals who manage and benefit from the species. For each species, we need to answer the following questions:

- Who collects (women, men, young….)? Who decides how the species is used? Who arranges the price with traders? Who transports the product to the trader? Who sells? Who gets the money?
- What determines the harvesting? (Do they arrange a contract with a trader prior to collecting, or do they collect, then try to sell their product? Do they simply collect when they run out of the product?)
- Are there seasons for the harvesting of the species?

- How does the harvesting occur? (In groups of people or individually? Do they cut everything or only with a certain DBH?....etc.)
- What regulations apply to that species? Are there cultural beliefs about this species that protect it or encourage over-harvest?
- Where do they harvest? (along trails, away from trails, in family owned portions of forests, common property forests…?)
- Who owns or manages the areas harvested (Is it at the family level, at the village level…?)
- How are rights to manage or own enforced? What are the sanctions and how often/consistently are they applied?
- Who has the right to harvest? Who gives the right to harvest?
- Is their any type of organization of harvesters at the village level (formal or informal)? If not, do people share information about the harvesting? What kind of information? Or is the harvesting an individual activity with a kind of competition among villagers…? Are there categories or groups of people who do not have access to the species? Why?
- Are they organized with other villages? How? Why?

6. Local management of environmental and cultural services

In some places local people also manage their resources for environmental services (such as water availability or quality, erosion control, biodiversity, etc.) and cultural services (such as aesthetic beauty, sacred sites, cemeteries, etc.). Management such as this is of interest to the project, though we do not have a uniform way in which to investigate such matters. Please use your descriptive talents to explain how such management works.

Appendix 2. An example of the operation of local government structures at the village level in the case of Shambangeda village, the East Usambara Mountains

The Village Council comprises 25 members, elected every five years. The members are proposed by villagers in the general Village Assembly. The assembly discusses the proposed persons and if approved by all participants, they become members. Under the Village Council there are three committees: Finance and Planning Committee (8 members), Social Welfare Service Committee (9 members) and Security Committee (8 members). There are also smaller committees such as the Environment and Forest Committee and Land Committee.

In each of the three sub-villages (*vitongoji*) there are sub-village committees that help the Village Council to solve small problems at sub-village level, except any conflicts related to land. Land conflicts are handled directly by the village land committee.

The committees are supposed to meet once a month but in reality often fail to do so. Sometimes it may take over two months before a committee meets, and it is usually to address a specific problem. The committee members often claim to be too busy or have other activities outside the village that prevent them from meeting more frequently.

The Village Council meets once a month to discuss the issues that have arisen at the sub-village level and general issues related to the village. Many decisions have to be approved by the Village Assembly, which is usually held every three months. The Assembly is valid only if the number of participants is at least 50% of the total number of adults in the village. If the required 50% is not reached, the Village Assembly is postponed by a few days. If the second attempt to hold the Assembly also does not attract the required 50% of the villagers, the assembly is not postponed again but the following procedure takes place: the participant lists of the two attempted assemblies are combined (even if the same names are repeated on both lists) to reach an adequate number, and the assembly is conducted as normal with the participants who showed up for the second meeting.

Appendix 3. Traditional stories on bush pig and *mvule* tree recorded in the study area

A traditional story about the bush pig

Once there was an old man who had a farm that had been damaged by a bush pig. He decided to borrow a spear from his friend in order to stab the wild pig. Really! He succeeded in spearing it, but the bush pig ran away with the spear. After he lost the spear, the man decided to leave his farm and go home. When he arrived at home, he met his friend who had lent him the spear and explained what had happened. His friend became very angry and demanded his spear back. The man decided to go deep into the forests in search of the bush pig in order to return the spear. When he arrived in the forest he met the ghost of his long-dead father lying on the ground with the spear piercing his body. The ghost told him: "I am your father. I came to your farm to eat. Why did you stab me with a spear?" After that day the man was always aware that people could turn into bush pigs. This is why bush pigs have been associated with ghosts.

(Hassan Konga of Kwatango village)

A story about the *mvule* tree

There was a beautiful girl who refused to marry any of the young men in the village. Every man who came to her she turned down, asking him, "Are you shining like a moon?" One day a young man, more handsome than all the other young men in the village, came to her asking for her hand. But the young man was actually a hyena. She agreed and went to his home. Her younger sister escorted them. So, when they reached the handsome young man's home they rested a little bit and then he told them that he was going to inform his friends about the wedding party. Before he left he instructed them to visit a certain woman who was a neighbour. On the way to the woman's house they met a very old woman at her house in the wilderness. She asked them, "What are you doing in this place?" The girl replied, "I have been married to a young man here." The old woman told her she had actually been married to a hyena and that he had gone to get his hyena friends to kill them and eat them. Then the old woman asked them to lick the oozing mucous that had stuck her eyes shut with their tongues so that she could save them from death. The girls agreed to do so. After they had licked away all the mucous, she gave them a winnow basket [*ungo*] and asked them to sit in it and to start singing this song: *Kitundu nige kwa mame, kitundu pee pepe, kitundu nige kwa tate kitundu pee pepe*, which means 'winnow

basket take me to my mother, winnow basket pee pepe, winnow basket take me to my father, winnow basket pee pepe'. Then the winnow basket rose up to the top of a *mvule* tree with the girls inside it. There were many tall *mvule* trees in the forest and the winnow basket jumped from one *mvule* to another all the way to their home. When they reached their home they told everyone what had happened to them and the girl swore that she would never marry again.

(Asha Ally of Misalai village)

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