

The importance of local traditional institutions in the management of natural resources in the highlands of Eastern Africa

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ABSTRACT

Traditional local institutions were studied in the highlands of Ethiopia and Tanzania to understand their role in natural resource management. Focus group discussions as well as individual interviews were conducted to identify the existing local institutions and their roles. Historical trend analyses were done to determine how the importance of local institutions has changed over the years. Results show that several local institutions with diverse objectives and varying levels of importance exist in the study sites. Suggestions are given on how they can contribute to effective natural resource management for sustainable social and economic development of highland communities in eastern Africa.

Key words: Natural resource governance, informal institutions, technologies uptake

1.0 INTRODUCTION

For sustainable development, institutions, especially at local level, are important for mobilizing resources and regulating their use with a view to maintaining a long-term base for productive activity (Uphoff n.d). In terms of natural resource management, William (1995) adds that sustainable use is conditioned by the strength of local institutions to involve the user of that resource in its rational management. Rural communities live in well-organized set-ups that structure their activities and interactions with the environment in their quest to eke a living out of available resources. Households, kin groups, hamlets and villages are the main actors through which local communities are organized (Singh 1994). Such structures are the local institutions through which diverse community aspirations are fulfilled. They are highly path-dependent (Olate 2003), dynamic and develop with society according to needs. They may last for a long time, accomplish their objectives, fade out, or transform to capitalize on emerging opportunities.

Local institutions differ based on their functions and objectives. According to Donnelly-Roark et al. (2001), they encompass many different types of indigenous organizations and functions such as village-level governance, acceptable methods of community resource mobilization, security arrangements, conflict resolution, asset management and lineage organization. In Mozambique, traditional leaders including spiritual ones were found to be important institutions with responsibilities such as land allocation, conflict resolution and mediation with spirits (Blom 2000; Virtanen 2000; Serra 2001); the latter being important where norms have been violated. Elsewhere, in Mali, Burkina Faso and Niger, Hilhorst (2008) noted that informal local governance institutions continue to play an important role in natural resources management including defining access and management of natural resources and in sanctioning trespassers. Ultimately, institutions encourage people to take a longer-term view by creating common expectations and a basis for cooperation that goes beyond individual interests, and to the extent institutions are regarded as legitimate, people comply without (or with fewer) inducements and sanctions (Uphoff n.d).

However, it is also recognized that local institutions have weaknesses when it comes to sustainable practices that favour sustainability. Hence, it is important to examine their roles, their issues and challenges, as well as their potential to achieve natural resource management outcomes. This paper summarizes findings of a study on ‘informal’ local institutions in three benchmark sites of the African Highlands Initiative (AHI) in Ethiopia and Tanzania. The study objectives were to identify local institutions, as well as identify opportunities with which to build environmentally sustainable, economically viable and socially acceptable natural resource management interventions. The study hypothesized that local institutions are important in mobilizing rural communities towards improved management of natural resources. The paper concludes with insights on how local institutions can be tapped for better natural resource management, and how in their roles could complement formal institutions.

2.0 CONCEPTUAL BACKGROUND

According to Singh (1994) institutions are formal or informal rules about who makes decisions, according to which procedures, what actions are permitted, what information must be provided and what payoffs will be assigned to individuals. Grace et al. (2000) emphasize this by arguing that institutions may either include or exclude an actor group (e.g. individual, households, ethnic groups) from access to resources. Formal institutions constitute the written or codified rules such as the constitution, judiciary laws, organized markets and property rights. Meanwhile, informal institutions are the rules governed by behavioural norms in society, family or community, and include sanctions, taboos, traditions and code of conduct. Local institutions fit into this category. They may take the shape of a formal organizational structure, but commonly consist of informal norms and practices within a community or ethnic group. However, formal institutions also abound and are important in the local setting.

In the study of institutions, it is important to distinguish local institutions from national institutions. Too often, the term "local" has been a residual category, equated with whatever is not national (Uphoff n.d.). But what is "local" has its own positive characteristics, providing a basis for collective action, for building consensus, for undertaking coordination and management responsibilities, for collecting, analyzing and evaluating information, energized by a degree of interpersonal solidarity (Uphoff n.d.). The fact that people at the local level know each other better, have more rapport and sense of belonging, provides opportunities for cooperation and collective action for managing natural resources on a self-ruling and self-sufficient basis.

In rural areas, local institutions usually include councils of elders, traditional midwives, rainmakers, and sacred forests and trees. Sacredness bestowed on some trees or forests has been found to reflect important ecological functions and to protect public goods and environmental services (Meliyo et al. 2006; Ramakrishnan 2004). Such trees or forests are therefore traditionally protected through norms and regulations and breaking the rules might attract severe punishment from the spirits (Laurrel and Nyberg 2000). Apart from being the warehouse for indigenous knowledge and beliefs, local institutions have the potential to effectively link service providers and the local communities. Working in Burkina Faso, Donnelly-Roark et al. (2001) observed that local institutions surround and connect communities and interact with other institutional systems such as the local government, to articulate community needs. Dixon and Wood (2007) argues that because they are dynamic, flexible, and responsive to societal and environmental change, local institutions are more efficient in promoting sustainability.

Local institutions could be effective in engaging the energies and social relations of ordinary citizens and in increasing the willingness of the citizenry to invest in public goods. However, successful engagement with rural communities should start with recognizing that they have institutions through which they can practise or organize collective action (Heltberg 2001). In the past, local institutions were seldom considered as an important factor in sustainability. Rather, land management practices were emphasized. Gupta (1992) argues that the two, institutions and management practices, are organically related. Whereas technologies and land management practices enable the transformation of resources and determine the pace, cost and effectiveness of change, institutions determine whether and how the relationship between technologies, environment and people would be viewed now and in the future. Uphoff (n.d) argues that local

institutions are more likely to be successful in natural resource management where the resource is "bounded", that is, known and predictable rather than shifting and variable, and where the users themselves are an identifiable group or community with its own authority structure. To exploit the potential of local institutions in natural resource management (NRM), an in-depth understanding of their evolution, goals, operations, objectives, strengths and weaknesses is essential.

3.0 METHODOLOGY

The watersheds studied were Gununo in Areka and Galessa in Ginchi districts (Southern and Central Ethiopia respectively), and Baga in Lushoto District (Northeastern Tanzania). Figure 1 shows the location of the sites in the highlands of eastern Africa and Figure 2 shows the maps of the watersheds studied. The general characteristics of Areka, Ginchi and Lushoto districts are summarized in Table 1. Areka is highly populated (more than 400 people/km²) with small farm sizes averaging 0.25 hectares, and is intensively cultivated. Poverty levels are high and cash opportunities are few. Ginchi has a population density of 100-200 people/km², has long dry-spells and has high livestock population relative to its carrying capacity. Erosion and forest encroachment are major problems on the hillsides. Lushoto is one of the most populated districts in Tanzania with a population density of 100 people/km². Land degradation, deforestation and land fragmentation are major problems in the district. Farm sizes range from 0.2 to 0.9 hectares for an average household of eight members.

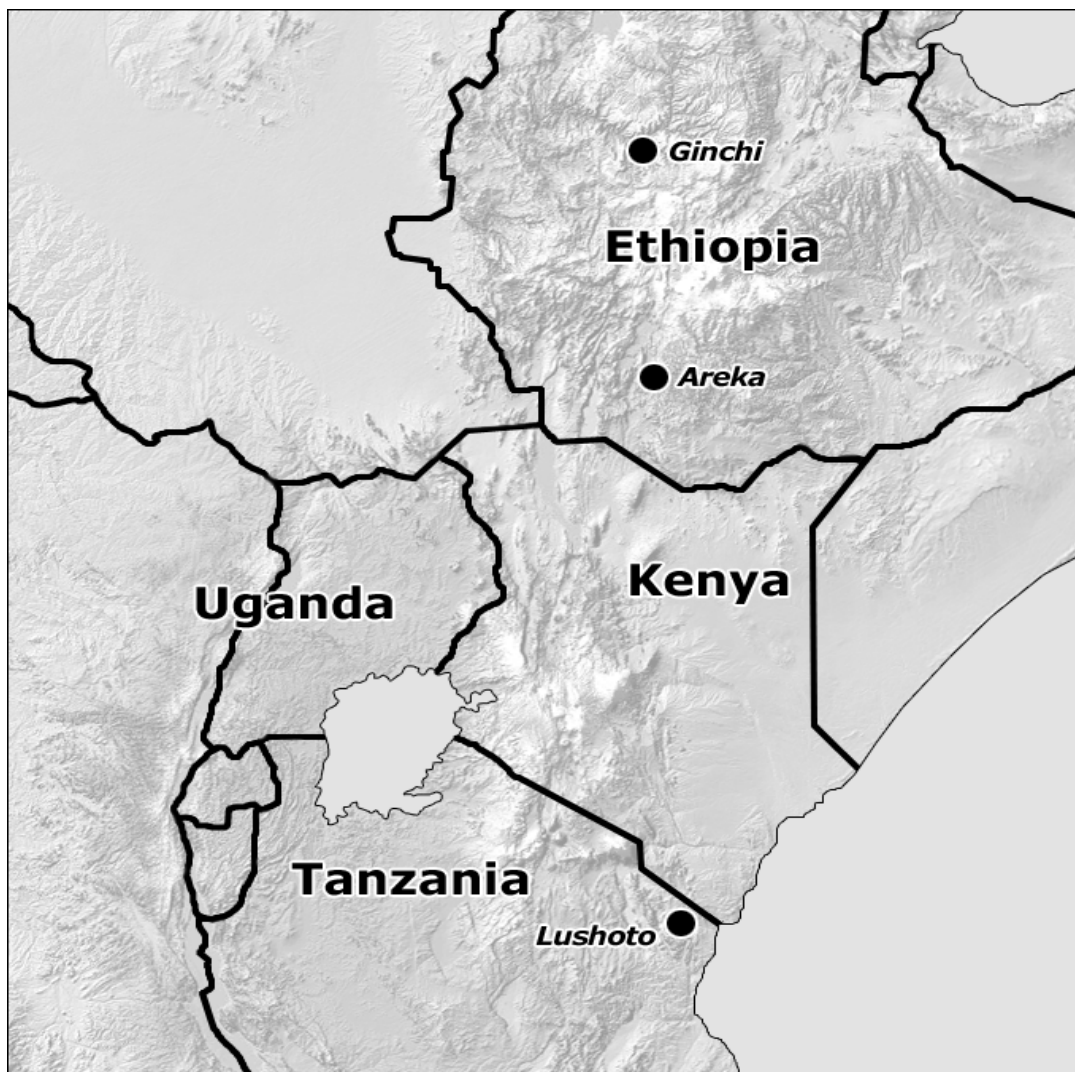
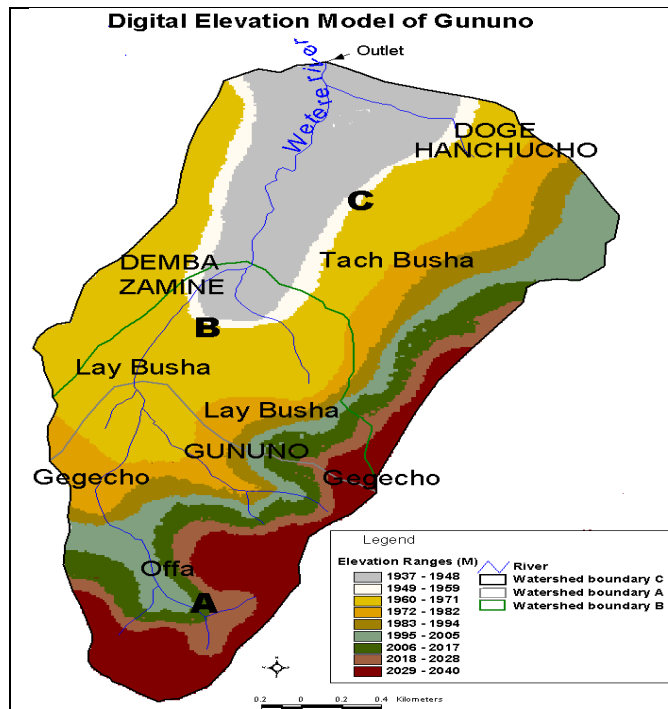
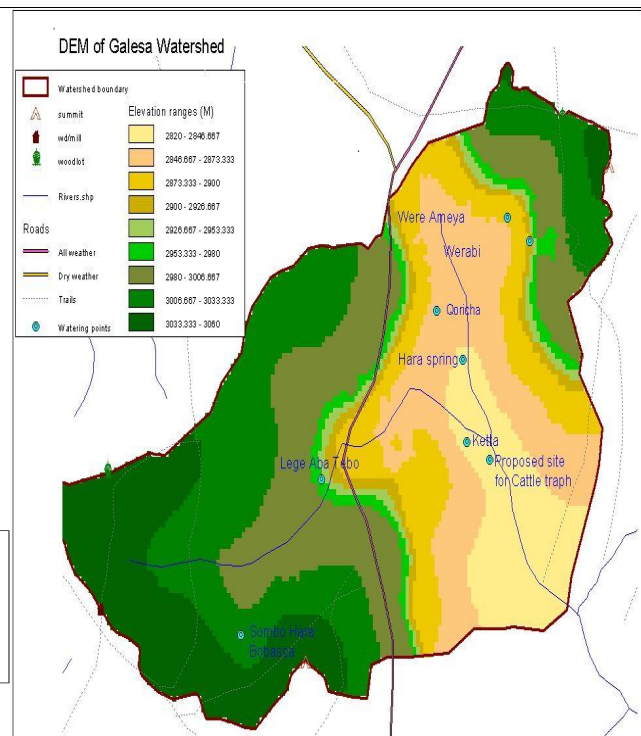


Figure 1: Map of Eastern Africa showing the study sites



Gununo Watershed, Areka - Ethiopia



Galessa Watershed, Ginchi - Ethiopia

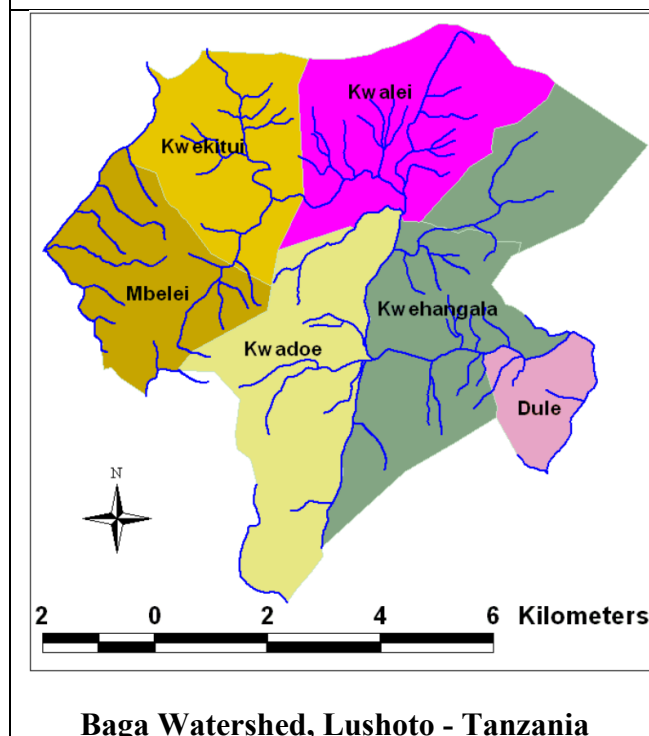


Figure 2: Maps of the study watersheds

Table 1: General characteristics of Areka, Ginchi and Lushoto districts

Site attributes	Areka, Ethiopia	Ginchi, Ethiopia	Lushoto, Tanzania
Altitude (metres above sea level)	1800-2600	>2200	1100-1450
Population density (/km ²)	400-600	100-200	200-300
Enterprises	Enset, wheat, pea, maize, barley, sorghum, sweet potato, faba bean horticulture, communal grazing	Barley, pulses, Irish potato, wheat, oilseeds, seasonal rotation from individual cropland to communal grazing	Maize, banana, tea, coffee, horticulture in valley bottoms, high-value trees, zero grazed livestock
Irrigation	None	None	Seasonal
Livestock trends	Low numbers and decreasing; intensive management	High numbers yet decreasing; access to grazing land good	Low numbers and decreasing; zero grazing mostly
Forest/woodlot access	Medium (tree planting common)	Limited (planting limited; remnant forest is distant)	Medium to high (mostly cultivated; natural forests are protected)
Market integration	Limited; some off-farm employment	Medium	Medium to good (tea, vegetables)

Key informants were identified in consideration of gender balance, resource endowment and location in the landscape. Key informants were necessary to obtain information from an informed audience familiar with the organization of their communities. Local leaders were purposely selected as key informants because they were more informed on community affairs, were relatively better trained, and they use local institutions in their leadership roles. The roles, strengths and weaknesses of local institutions were discussed in focus groups.

Historical trend analysis was used to understand how the importance of local institutions has changed overtime. For all sites, three time periods were considered. In Lushoto these were before 1930s (during the colonial period), 1960s (after independence) and after 1990 (liberalization period) while in Areka and Ginchi local institutions were assessed during the feudal period (before 1974), during the *Derg* regime (1974–1991) and after 1991. The three time periods were characterized by major changes that affected the performance of most of the local institutions. This is important given the dynamic nature of institutions, if one were to understand the reasons for their change in importance. Information generated was synthesized and cross-checked with available secondary data.

4.0 RESULTS

4.1 Typology of local institutions

The diversity of local traditional institutions in the studied watersheds was found to be similar across sites when contrasted on the basis of their function, with slightly greater divergence in the institutions found in Gununo (Areka) and Baga (Lushoto) (Table 2). Nine types of local institutions were identified with some having more than one function.

Table 2: Typology of local institutions in the watersheds

Function-based local institution	Gununo Watershed (Areka, Ethiopia)	Galessa Watershed (Ginchi, Ethiopia)	Baga Watershed (Lushoto, Tanzania)
Land institutions	Sharecropping (<i>yekul</i>), contracting and renting	Sharecropping (<i>yekul</i>), contracting and renting	-
Livestock institutions	<i>Kota, Missa-kotta, Ulo – kottaa, Hara and Gatuwa</i>	<i>Ribi (Horsisa)</i>	Rotational livestock groups (<i>kopa ng'ombe, lipa ng'ombe</i>)
Labour institution	Debo and Zaye	<i>Debo (Jige)</i>	<i>Kiwili, Ngemo</i>
Mutual assistance institutions	<i>Iddir</i> , (sub – institutions: <i>Amba Iddir, Hera Iddir, Dabua Iddir</i> and Church <i>Iddir</i>), <i>Iqube</i> , and <i>Meskel Banking</i>	<i>Iddir, Ekub,</i>	<i>Kibati</i>
Health institutions	Traditional midwives	Traditional midwives Traditional healers	Traditional healers, Traditional midwives <i>Hunguza</i> , Devil cleansing (<i>Mbungwa</i>)
Traditional beliefs	<i>Mahiber, Senbete</i>	Mahiber, Senbete <i>Qaalluu</i> (Holy man), <i>Qaallitti</i> (Holy woman)	Sacred trees/sacred forests, <i>Wakilindi</i>
Traditional leaders	-	<i>Jabir, Gadu, Qaalluu, Qaallitti</i>	Zumbe Council of elders
Recreation	-	-	Traditional dances, <i>Kidembwa</i> (kitchen parties (women only)), sports
Conflict resolution	Council of elders	<i>Jabir, Gada, Qaalluu</i> , council of elders	<i>Zumbe</i> , council of elders

4.1.1 Land-based institutions

These types of institutions are more prominent in Gununo (Areka) and Galessa (Ginchi) Watersheds, where the government owns the land and farmers have the right to use and bequeath to their sons once they get married. In Gununo, land can be accessed through three types of institutional arrangements namely, sharecropping, contracting and renting (Table 2). Under sharecropping, one farmer provides land while the other brings the oxen, but both provide all other inputs including labour, seeds and fertilizers. Contracting involves a person transferring land use rights to another person through cash payments covering a period of 5-10 years. Few households are involved in annual land renting arrangements. Similar institutions exist in Galessa where the sharecropping institution is referred to as *Yekul*. In some contract arrangements, the contractor is allowed to remove the cost of seeds and fertilizer before sharing the rest of the produce equally. In both watersheds, renting is time bound and is not transferable. Similar arrangements did not come out strongly in the Baga Watershed (Lushoto) although it is known that farmers do rent land.

4.1.2 Livestock based institutions

In Gununo, livestock is an important farm enterprise. Five institutions related to livestock ownership and management exist. These include *Kota*, *Missa-kota*, *Ulo-kottaa*, *Hara* and *Gatuwa* (Table 2) all of which come under different benefit-sharing arrangements. For example, under *Kota*, the arrangement is half-sharing of livestock ownership between two individuals or households. The aim is to pool limited resources and own the animals together. The offspring, milk, manure and use for traction are shared on an equal basis between the parties. During lactation, cows are moved from one house to the other to share the milk. *Missa-kota* is similar to *Kota*, but one of the partners shares only a quarter of the benefits. *Hara* is a share rearing arrangement and is practised by those with no livestock. The offspring remain the property of the livestock owner while the one managing the animal benefits from milk, draught power and manure. *Gatuwa* is the pairing of oxen owned by different individuals when each person owns only one ox.

In Ginchi, *Ribi (Horsisa)* is the only livestock-based institution in which partners share the offspring while other benefits (milk and manure) belongs to the livestock keeper. In Baga, there are rotational livestock groups introduced by the Department of Livestock Development in a project called *kopa ng'ombe lipa ng'ombe* where a farmer is given a pregnant cow on condition that (s)he passes on the offspring if it is a heifer, to the next farmer in the group. The process goes on until all farmers in the group have cows. To belong to a group, the farmer must provide good livestock shelter and established pasture.

4.1.3 Labour-sharing institutions

Labour-sharing institutions are more prominent in Gununo and Baga. In Gununo, two labour institutions, *Debo* and *Zaye* were identified. *Debo (Jige)* is collective action consisting of 70-80 people who work together in return for a large feast of food and drink. It is also practised in Galessa, especially during periods of heavy workloads. *Debo* is mainly used in agricultural activities and house construction. This is similar to the collective action in Baga under the name

Ngemo where community members contribute their labour during land preparation, manure transport, harvesting and house construction, and feast after the task. An additional labour-sharing institution, *Kiwili*, which has diverse roles, was identified in Baga. Under *Kiwili*, members share farm labour and assist each other financially in times of difficulties. *Debo* and *Zaye* in Gununo and *Ngemo* and *Kiwili* in Baga are what Olate (2003) refers to as linking social capital—a type of social capital, which draws members from the family, close friends and neighbours.

4.1.4 Mutual assistance institutions (financial, social)

Mutual assistance institutions are *Kibati* in Baga Watershed and *Iddir* and *Ekub* in Galessa Watershed. Several others specialized in providing social insurance such as mortuary services, and financial aid to cover religious and cultural ceremonies. In Gununo, two institutions *Iqub* or *Shufuw*, and *Meskel* provide banking services. The former is essentially a rotating fund scheme where members contribute some money for a certain period (usually a week). Under *Meskel* banking, members contribute a specific amount (about 0.5 birr per week) to be used during *Meskel* celebrations. The *Iddir* in Gununo and Galessa is a social unit formed through voluntary membership of between 20 to 100 individuals to provide social insurance. In Gununo, four types of *Iddir* were identified. These are *Amba Iddir*, *Hera Iddir*, *Dabua Iddir* and Church *Iddir*. *Amba Iddir* is concerned with assistance related to deaths such as meeting funeral expenses. *Hera Iddir* is similar to *Amba Iddir* but is confined to the youth and apart from assistance for funeral expenses, they also exchange labour for house construction. *Dabua Iddir* is based on kinship with the main purpose of helping relatives during crises and ceremonies while Church *Iddir* is church-mediated (the Orthodox Church) where members support each other by contributing labour or money. The system is similar to labour-sharing institutions. Similar to the *Iddir*, *Senbete* in Galessa assists members in times of funeral. However, it is a men's group whose sole purpose is to strengthen ties amongst men. Similarly in Baga, a mutual assistance institution called *Kibati* assists members in meeting expenses related to funeral and other crises.

4.1.5 Health institutions

Health institutions promoting traditional medicine, purification from evil spirits, and invoking supernatural powers of traditional spiritual leaders were found in all three sites. In Baga Watershed, cleansing from evil spirits (*Mbungwa*) is done in a small hut constructed by men at the base of a sacred tree such as *Ficus thonningii* (Figure 3). Many people fear going near such places. Traditional midwives are an important health institution in all the three sites especially for the poor and those far from health services. Their role is recognized by the government in Tanzania, which provides support for training in integrating modern medicine. Fortune-telling and calamity prevention against diseases are also considered health-related institutions in Baga Watershed, Lushoto. One such belief is *Hunguza*, mainly practised against human diseases such as measles.



Figure 3: *Ficus thonningii* (left) one of the sacred trees in Lushoto at the base of which (right) rituals are performed

4.1.6 Traditional beliefs (including rituals, spiritual leaders and sacred areas)

Institutions in this sector came out strongly in Galessa (Ginchi) and Baga (Lushoto). In Galessa, the *Mehiber* is mainly an elders' club of mixed gender, strong in expressing traditional religious beliefs. Membership is voluntary, and members prepare food and drinks during sessions. The *Qaalluu* (holy man) and *Qaallitti* (holy woman) among the Oromos in Ethiopia were believed to be the media through which their god (*Waaqaa*) made contact with his people. People would go to these institutions to fulfill religious obligations, meet friends and kinsmen, witness a spectacle, sing, dance and be fed. The *Qaalluu* were also known as councillors. In Galessa and Baga Watersheds, traditional rituals are performed in sacred areas at the base of sacred trees such as *Ficus thonningii* (Figure 3) or in sacred forests (Figure 4). Trees considered sacred in the Baga Watershed are predominant in the agricultural landscape as giant trees, and unauthorized people are not allowed to approach or cut such trees.



Figure 4: Sacred forest (The ‘Adbar’) in Galessa Watershed, Ginchi, Ethiopia

In Baga, *hande* is practised as part of crop protection against pests. This is a belief based on the application of a botanical pesticide derived from *Tephrosia spp.* According to this practice, no one is allowed to go to the field after application for the next seven days, believing that doing so, will render the treatment ineffective. Based on this belief, farmers are required to apply the pesticide at the same time and severe punishment befalls those who break the rules. In Baga, there are also rain-makers (*Wakilindi*), believed to have powers to plead for and predict the rainfall pattern.

4.1.7 Traditional leaders

This institution is found in Galessa and Baga —they are called *Jabir*, *Gadu*, *Qaalluu* (Men) in Galessa and *Zumbe* in Baga. The *Jabirs* are persons with high status in the traditional belief system and serve as the ultimate authority in traditional beliefs. Among the Oromos, *Gadu* and *Qaalluu* were the primary means through which economic, political and legal systems were controlled and governed. Individuals as well as groups would therefore go to these institutions to settle disputes.

4.1.8 Recreational institutions

In Baga Watershed, several recreational groups were identified, including traditional dance and sports groups, mainly football. *Kidemwa* is a special traditional dance group for women only and is used to enlighten young prospective brides on what they should expect, should do and should not do in marriage. Meanwhile, *Mdumange* is a popular dancing group in Lushoto commonly

hired to create awareness and support political campaigns. Share drinking is a prominent recreation institution in Gununo Watershed where it is more common during harvest. The local institution, *Mahber*, involves households sharing the same religion organizing parties every month in rotation, particularly in memory of the Christian Saints.

4.1.9 Conflict resolution

Several local institutions responsible for conflict resolution exist in the study areas but their importance is fading (see below). Conflicts over management and use of resources and household disputes were generally resolved by traditional leaders and the council of elders. In Baga, the *Zumbe* and in Galessa, *Jabir*, *Gada*, *Qaalluu*, *Qaallitti* were frequently contacted to settle disputes. Some of these institutions of leadership are no longer in place. An example is the *Zumbe* in Lushoto, which ceased to exist when all the chiefdoms were abolished after independence. Others have been weakened by different factors including civil unrest in Ethiopia and colonialism in Tanzania.

4.2 Historical trend of importance of local institutions

Changes in importance for some local institutions were assessed over three time periods. These were before the 1930s, 1960s and after the 1990s for Tanzania, and the feudal period (before 1974), during the *Derg* regime (1974-1991) and after 1991 in Ethiopia. In Baga Watershed, most institutions have existed for a long time except for mutual assistance institutions (especially for fundraising) which came into existence only in the 1970s. Sports institutions started in the 1960s. Most of the local institutions dealing with traditional beliefs and rituals are fading in importance (Figure 5). According to the informants interviewed, this is due to modern education, exposure to new religions and changes in administrative governance. In-migration of other tribal groups into the community and commercialization of services by outside institutions have also downplayed their importance. For example, *Hande*, rain-makers, devil cleansing, fortune tellers and sacred areas for rituals are all becoming less important due to modern religion (Christianity and Islam), influx of outside cultures and policies. Some spiritual undertakings like cleansing from evil spirits are at best seen as devil worshipping; both practitioners and those seeking their assistance do so secretly (Mama Asha Kassim and Zainab Zuberi; pers. comm.).

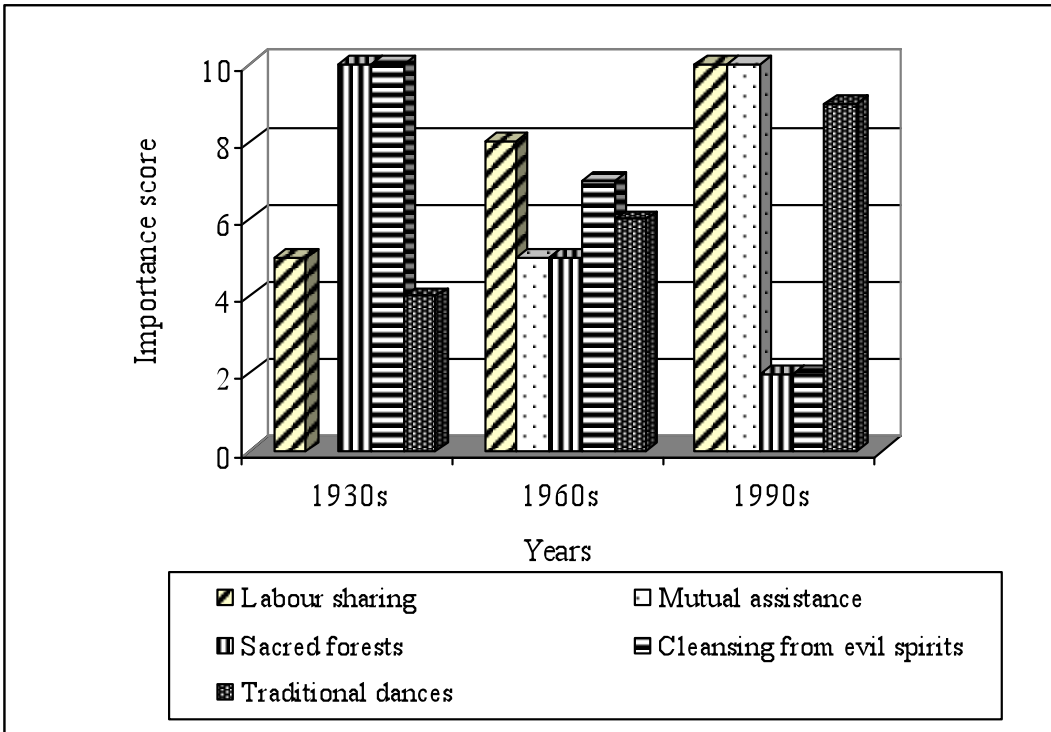


Figure 5: Changing importance of some of the local institutions in the Baga Watershed, Lushoto

Traditional healers are becoming more important although some have over-commercialized their services. The importance of institutions for labour-sharing (*Kiwili, Ngemo*), mutual assistance (financial) (*Kibati*) and traditional dances are increasing while sacred forests and cleansing from evil spirits has decreased overtime. The importance and power balance of local institutions in Ethiopia have been evolving together with the political evolution of the country. During the feudal times (before the 1974 revolution), most of the rural people were dependent on local institutions for conflict resolution, social coherence and local education using religious establishments. However, the importance of these institutions declined during the *Derg* regime (1974-91) and from 1991 onwards for example, tenure arrangements in relation to land and other natural resources. Changes in the political landscape saw the coming of different institutions like the *Baito* system, which has a significant role in relation to natural resource issues. Civil unrest in Ethiopia has also contributed to erosion of the roles of some of the local institutions in natural resource management (Chisholm 1998).

Changes in importance of local institutions do not differ appreciably between the different sites. Some institutions have disappeared from the scene. Traditional leadership structures have been replaced by a formal system under the local government structures where leaders are democratically elected. Under the current leadership system the enforcement of bylaws is weak, as leaders tend to protect their relationship with the rest of the community members. In Lushoto, respondents observed that village leaders were weak, corrupt and often favour offenders who are their close relatives.

5.0 DISCUSSIONS

Sustainable management of natural resources in the highlands of eastern Africa is a major concern because of the diversity of products emanating from these highlands and the impending threats to natural resources due to increasing human population. It is recognized that in order to balance livelihood and conservation objectives, it is essential to engage local communities in the management of natural resources. For successful engagement of local communities, project implementers need to recognize and work with local institutions. This is because of their role as custodians of local knowledge (Donnelly-Roarck 2001), in mobilizing collective action (Gupta 1992; Olate 2003) and connecting members of different communities (Donnelly-Roarck 2001)—all of which are fundamental to effective NRM.

A variety of local institutions directly involved in NRM exist in the watersheds. Local institutions whose major function is NRM include land, livestock, and labour-sharing institutions. Traditional leaders, traditional beliefs and rituals, and mutual assistance institutions play an indirect but essential role in NRM through conflict resolution, natural resource governance and risk reduction. Health and recreational institutions can be sensitized to include NRM in their activities given the reliance of traditional healers on local biodiversity and the reliance of recreational institutions on the natural resource base for fundraising.

In Ethiopia, prominent land institutions have greatly influenced land management. Where long lease is practised, the renter is motivated to make long-term investments in NRM such as soil conservation and agroforestry. On the contrary, short-term leases discourage farmers from taking long-term land improvements, thus greatly contributing to land degradation. Farmers and government policymakers should therefore be encouraged to consider leasehold terms in relation to the long-term productivity of the land. Livestock-based institutions in Ethiopia represent an important social capital with respect to NRM. These institutions enable farmers with no livestock to access manure, which is an important ingredient in soil fertility improvement in the highlands where soil nutrient levels are very low. Meanwhile, labour-sharing institutions common in the three sites, are a form of social capital that enable members to accomplish difficult tasks that would otherwise be impossible to do by one individual.

Mutual assistance institutions in Gununo (Areka), Galessa (Ginchi) and Baga (Lushoto) are effective in raising financial capital within the communities, and enabling members to acquire goods and services that are highly priced. Given the tough official bank lending regulations, institutions like *Iddir* and *Kube* in Gununo and Galessa (Ginchi) can contribute to NRM. With the increased capital made possible through these institutions, farmers can hire labour for land preparation and soil conservation, buy food and drinks to support traditional collective action activities, or invest in new enterprises.

Traditional beliefs and rituals as well as traditional leaders have strong linkages with NRM. Comparing current NRM practices in the presence of state-backed bylaws with those of the past when traditional beliefs played an important role in preserving common pool resources, noticeable differences may be seen. Since NRM practices were reinforced through spirituality, sacred forests and trees were highly respected (Laurrel and Nyberg 2000). The association of sacred tree species with important water conservation functions suggests that scientific

explanations may be found for some of these traditional practices. Delineation of sacred forests in critical parts of the landscape (hilltops, catchments) was likely to have had a positive influence on water conservation and watershed functions (Gerden and Mtallo 1990). Using 'indigenous knowledge' encoded in traditional beliefs, and through experience, local communities were aware of which forests contributed to their wellbeing; so they would impose restrictions and ensure that they were adhered to, by invoking spiritual powers.

Traditional leaders are also considered spiritual leaders, integrating spirituality with natural resource governance. Because they had legitimate powers bestowed on them by the community, social harmony and the spirit of unity was ensured and this could be exploited to include aspects of NRM in their activities. In both countries, the imposition of a new system of administration saw the emergence of new titles (*Fetawavari* in Ethiopia and *Mwenyekiti wa Kijiji* or Village Chairperson in Tanzania). Although legitimate according to the formal system, their performance leaves much to be desired. In the first place, the new leaders do not necessarily come from the original ruling clans who were traditionally believed to be God's appointees to look after the spiritual and material welfare of their people. One of the major setbacks resulting from the weakening of the institutions of traditional beliefs and traditional leaders is the enforcement of NRM bylaws. In Lushoto, taking an offender to the official courts might attract wrath and could result in the breakdown of community relations, especially if the offender is a relative or friend. In the past, the traditional legal system worked without the members harbouring grudges. One might argue that it is primitive to adhere to traditional beliefs, but good aspects of the tradition should be upheld.

Recreational institutions offer an opportunity to bring individuals with similar interests together. As a means of raising funds to meet costs related to their groups, members of these institutions are involved in various production activities including cultivation of high-value crops. NRM issues such as soil conservation and managing irrigation water can be done through such groups if sensitized and backed up by appropriate technological, policy and institutional innovations. One way of backing up traditional institutions is to encourage interaction between them and formal institutions involved in NRM. In Tanzania for example, each village has an Environmental Management Committee under the Village Government. Such committees make use of institutions like traditional dance groups in creating awareness on management of natural resources including water sources, forests and soil conservation.

The decreasing importance of traditional beliefs, rituals, sacred forests and trees is disadvantageous to the management of natural resources. But guardians of these institutions failed to provide scientific explanations on their belief system, so they were deemed primitive. Systematic studies directed towards decoding the 'indigenous knowledge' embedded in some useful traditional beliefs are therefore necessary to provide the guardians of local institutions with necessary information which they could use to defend some of these beliefs in a more scientific way. Furthermore, the study revealed that some local institutions discriminate against some genders or other groups (e.g. for men only or for youth only) and effective use of such institutions in NRM should take this into consideration.

6.0 CONCLUSION

Many local institutions exist in the study area, most of them with diverse functions, but all seem to relate directly or indirectly to natural resource management. Clearly, local institutions are important structures that guide the lives of local communities. Some of them are directly engaged in, and have been successful in natural resource management. Some institutions have faded away while others remained relevant overtime; others discriminated against certain genders, admitting only certain types of members. The historical trend analysis shows a decline in importance of institutions on traditional beliefs and sacredness and an increase in importance of labour-sharing, mutual assistance and traditional dance institutions due to influences from new or modern religion, exposure to other cultures and practices, as well as to new technologies. However, it is evident in the sites that despite the advent of modernity, local traditional institutions remain important and their relevance to natural resource management provides a basis for harnessing their potential to complement modern and formal institutions. It is clear that local leadership from these institutions remain strong, and can influence key decisions that could help enforce formal institutions. There is therefore a need, to better understand how informal legal systems have worked well in the past, and how strategies can be fostered to integrate aspects of traditional governance system into the formal system. It would be interesting to understand which local institutions could be harnessed for natural resource management, given their sphere of influence in the area. Finally, judicious management of natural resources in the mountains of eastern Africa depends on recognition of local institutions and working with them directly, in conjunction with modern formal institutions. Without their willing participation through incorporation of traditional rules into modern and formal systems of natural resource governance, local institutions will just be a thing of the past.

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