

Protecting Traditional Health Knowledge in Kenya:

The role of Customary Laws and Practices



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PROTECTING COMMUNITY RIGHTS OVER TRADITIONAL KNOWLEDGE



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EXECUTIVE SUMMARY

This report presents the findings of community level research on customary laws and practices for the protection of traditional health systems in Kenya. It also explores the protection of community rights over traditional knowledge and Collective Biocultural Heritage within Kenya's policy and legislative framework. There is a new policy framework on traditional medicine and medicinal plants in Kenya; medicinal plants represent a sector with an established economic value, and related practices constitute part of a living culture among the Kenyan population. However, traditional health knowledge and healthcare is now facing significant threats. Given the lack of existing legal protection for the intellectual rights of traditional healers in Kenya, this study addressed the urgent need to develop a *sui generis* system for protecting the rights of communities over TK and related biological resources (BRs).

The study aimed to contribute to the formulation of laws and policies for the protection of Traditional Knowledge and Collective Biocultural Heritage (CBCH) of indigenous people and local communities at national and international levels; especially noting that modern Intellectual Property Rights (IPR) may not be appropriate for protecting the distinct knowledge systems and needs of traditional knowledge holders. The study explored customary protection systems for TK and BRs, including traditional values, ownership rights, transmission modes, and access and benefit-sharing. It sought to inform the development of Prior Informed Consent (PIC) and benefit-sharing mechanisms for improved livelihoods; and strengthen customary resource management systems that sustain TK and biodiversity. It also examined existing national policy and legal frameworks with an impact on TK systems and the interplay between traditional protection systems and national policies.

The study involved ethnic groups of extreme disparity in terms of socio-cultural background and geographical position to establish outmost similarities and differences for safe generalisation on the mid-way ethnic groups and to understand the range so it can be accommodated in national law. Two categories of ethnic groups including the Bantus represented by the Mijikenda and Nilotes represented by the Maasai were selected for this study. While the Mijikenda who are located adjacent to coastal forests have a comparatively diluted cultural system, the Maasai who live in the savanna grasslands of the rift valley region have a more intact cultural system. While the Mijikenda are largely sedentary agriculturalists, the Maasai are largely nomadic pastoralists. The following communities were involved: the Digo in Kwale County, the Chonyi and Giriama in Kilifi County, and Maasai in Kajiado County (171 respondents in total, including elders, healers, women and youth). Semi-structured interviews, open-ended discussions and focused group discussions were facilitated by researchers from the communities.

In the past, a set of uncoded and unwritten laws have governed the sharing of knowledge and the collection of resources in community forest landscapes. The three key customary law principles of Andean Quechua communities - Reciprocity, Equilibrium and Duality - which promote equity and ecological sustainability, applied in the traditional management of biocultural resources among both the Mijikenda and the Maasai, including knowledge protection and benefit sharing. The forest resources, language, knowledge and culture formed an intertwined network that is interdependent. The knowledge was for a very long time verbally transmitted from generation to generation. It was communally owned and freely shared amongst communities, except for specialized healing knowledge which was protected through rules for transmission and sanctions, and held by clans or individual spiritual healers. The Maasai knowledge and resources were more openly shared, as a means of survival in harsh conditions, even with third parties. The Mijikenda knowledge was not shared with non-Mijikenda.

In recent decades, a number of drivers of change have emerged which are threatening traditional knowledge, biological resources and culture, and which require mitigating actions to be taken. These threats include changes in governance from traditional to central governance, especially after independence, the spread of religions and modernisation. Analysis of policies and legislation reveal the development of frameworks that have for a long time systematically marginalized traditional knowledge and natural resource governance systems. While policies that previously sought to suppress traditional health knowledge have now given way to supportive policies, the centralization of forest governance under conservation laws has alienated the Mijikenda from forest resources.

Although previously, customary laws effectively conserved forest resources, with the transition to a central governance system, some of the sacred kaya forests have lost over 90 per cent of their vegetation due to encroachment by the local community. This is because the customary governance institutions and monitoring systems have broken down, while the resources are now viewed as belonging to the government. The marginalization of traditional institutions and culturally important forest resources are affecting the maintenance of traditional knowledge. In addition, land ownership has shifted from predominantly common to private ownership, and traditional healers have started practicing commercially for individual gain rather than community healthcare, charging higher prices. These trends are having an adverse impact on community livelihoods, particularly for the poor (the majority of whom are below the poverty line). While the elders are keen to bring back the customary governance institutions, the youth are not interested in the traditional systems.

The study recommends that the previously effective community institutions such as the ngambi be legally recognized and given a proper mandate and powers to ensure the conservation and sustainable use of kaya forests. In addition, prior informed consent of traditional elders needs to be institutionalized from community to national level to ensure the participation of indigenous communities in decisions on the use of their knowledge and biocultural resources. Policy, legal and institutional mechanisms should be developed which recognize both collective and individual rights and benefit-sharing. Priority needs to be given to strengthening existing customary law systems which are vital to the maintenance of the knowledge, biodiversity and cultures concerned. Capacity building to add value to community knowledge and products is important to enhance economic benefits for communities and strengthen incentives for sustaining TK and biodiversity. This may also help to engage the youth.

1. INTRODUCTION

1.1 Background

The Kenya component of the project “Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices” focused on knowledge systems for medicinal plants. It was implemented by the Southern Environmental and Agricultural Policy Research Institute (SEAPRI) of the International Centre of Insect Physiology and Ecology (ICIPE), and the Kenya Forestry Research Institute (KEFRI). This report presents the findings of community level research and a discourse on traditional knowledge within Kenya’s policy and legislative framework for the protection of community rights over their Collective Biocultural Heritage (CBCH). CBCH is defined as “knowledge, innovations and practices of indigenous peoples and local communities which are held collectively and are inextricably linked to traditional resources and territories; including the diversity of species and ecosystems; cultural and spiritual values; and customary laws shaped within the socio-ecological context of communities” (ANDES and IIED, 2005). In particular the report explores customary laws and practices as a source of principles that could strengthen existing legislative and management frameworks towards ensuring protection of CBCH and more equitable benefit sharing for improved community livelihoods.

The Biodiversity Convention recently adopted the Nagoya Protocol on Access to genetic resources and Benefit Sharing (2010). This Protocol requires countries to take measures to ensure that traditional knowledge held by indigenous and local communities is accessed with their Prior Informed Consent and that the benefits from its use are shared in a fair and equitable way with such communities. Such measures shall take into consideration indigenous and local communities’ customary laws, community protocols and procedures (Article 12).

The Kenyan component of this project was prompted by the fact that, whereas there are global and national initiatives on traditional knowledge (TK), there is inadequate understanding of the kinds of mechanisms that are appropriate and effective for protecting the rights of indigenous communities over their traditional knowledge and associated biological resources at the local level. Although it is widely established that traditional knowledge systems play an important role in promoting sustainable management of natural and environmental resources (UNEP, 1992), the development of policies for TK protection is often led by natural scientists and intellectual property rights experts with limited participation of TK holders and consideration of their customary laws and values. Indeed, little research has been conducted on customary laws relating to TK and biological resources. There is also a danger that national policy processes tend to place more emphasis on national economic interests than on the rights and needs of the communities to which the TK owes its existence.

The Kenyan study focused on medicinal plants for several reasons. At the political level, medicinal plants are the focus of the policy framework on ‘traditional medicine and medicinal plants’ developed by the Inter-Ministerial Committee under the National Coordinating Agency for Population and Development (NCPAD) in the Ministry of Planning and National Development. The legislation to implement the policy ‘Traditional Medicine and Medicinal Plants Bill 2010’ has been drafted. Further, a new national policy on ‘Traditional Knowledge, Genetic Resources and Traditional Cultural Expressions’ has also been recently developed in 2010 by a national taskforce of the same name under the Attorney General’s Office.

At a practical level, for a number of years medicinal plants have been the subject of interest of several research institutions at national and international levels. Such institutions include the:

- Kenya Forestry Research Institute (KEFRI), which has undertaken a range of activities involving the cataloguing of medicinal plants in various regions of the country and has established on-farm medicinal plant nurseries, medicinal plants conservation groves and traditional knowledge registers;
- Kenya Medical Research Institute (KEMRI) which houses the Centre for Traditional Medicine and Drug Research has considerable experience in the development of phytomedicines and fully fledged pharmaceutical products; the University of Nairobi’s Department of Pharmacology and Pharmacognosy which has undertaken several projects aimed at the development of phytomedicines based on traditional knowledge;
- Kenyatta University College which has established a traditional medicine clinic that has served as a basis for developing phytomedicines from traditional medicine;
- ICIPE, which has conducted research into plants with insect repellent and attractant properties and is exploring the potential of phytomedicines and nutraceuticals as a source of alternative income for forest adjacent communities;
- World Agroforestry Centre (ICRAF) conducted projects considering medicinal plants as a potential source of alternative income for forest adjacent communities; and
- Kenya Resource Centre for Indigenous Knowledge (KENRIK) and Network on Medicinal Plants and Traditional Medicine Eastern Africa, hosted by the National Museums of Kenya (NMK), that seek to promote the use of traditional knowledge and traditional medicine to preserve culture.

Medicinal plants represent a sector with an established economic value that, while recognizing its interrelatedness with other aspects of traditional knowledge, is relatively easily dealt with discreetly due to its distinct nature and body of practitioners. Over the past few decades or so, biotechnology, pharmaceutical and human health care industries have increased their interest in natural products as sources of new biochemical compounds for drug, cosmetic, chemical and agro-products development. In some cases, this has been accompanied by an interest in traditional knowledge and medicine as a lead in new product development (Chemical Marketing Report, 1997; ten Kate and Laird, 1999).

Medicinal plants and related practices constitute part of a living culture among the Kenyan population. It is widely recognized that over 80 percent of the rural population in developing countries consults traditional medicine for their primary health care because of ease of access, cost effectiveness and efficacy (WHO, 2008). In rural coastal areas of Kenya, it is estimated that between 30 to 70 percent of disease burden is managed by traditional medicine practitioners (Mutta, 2003). The utilization, management and ownership of medicinal plants and related resources in Kenya have been traditionally governed by indigenous communities through customary laws and principles.

1.2 National Socio-Cultural Situation

Kenya has over 40 ethnic groups which, on the basis of linguistics and geographical origin, fall into four broad categories: Nilotic, Nilo-Hamitic, Hamitic and Bantu (Azevedo, 1993). However, the Kenyan government, as part of its processes of nation building, chose not to emphasize ethnicity in order not to accentuate ethnic differences. Despite this, many ethnic groups in Kenya consider ethnic affiliation as extremely important. Before the British colonisation in 1907, the common ethnic administrations were based on kinship, where elderly men made the decisions. Each of Kenya's ethnic groups has its customary law system, governing various aspects of community life, which limits the value of broad generalization about customary law systems. Nevertheless, it is still possible to point out some common features. These include the fact that rules governing access to Collective Biocultural Heritage (CBCH) are an integral part of the social structure, and are underpinned by some common underlying principles.

1.3 Customary Laws and their Role in the Community

Customary law refers to locally recognized principles, and more specific norms or rules, which are orally held and transmitted, and applied by community institutions to internally govern or guide all aspects of the lives and activities of indigenous and local communities. In this context, the term 'customary land law' has been used to describe land tenure systems practised by indigenous peoples, which is distinguished from the western land law. A common feature of customary land tenure in Africa is its traditional origin and its generally unwritten form. The most common form of tenure in Africa is communal tenure, whereby land belongs to no one individual in particular but to the community (i.e. clan or ethnic group) as a whole. Each person in the community has rights of access to the land dependent upon her/his specific needs at the time.

For instance, customary land ownership assumes many forms that order relationships between people, both the living and the dead. It structures relationships between groups within societies and between people and the supernatural world. In this sense communities perceive land as both sacred and profane and often it is linked with fertility and life - symbolically often represented as female. Land is therefore an entity perceived as belonging to the ancestors to be held in perpetuity for the unborn, the living and the dead.

By nature, customary land laws were 'procedural' and not codified. These laws did not define each person's rights, but the procedures by which access rights are obtained. In this way customary systems did not consist of rigid rights but maintained flexibility and could be altered according to changes in social relationships, conditions of production or when the pressure on resources increased. In this sense, there is no system that is 'traditional' or customary in itself, but there are forms of land management based on customary principles.

2. OBJECTIVES OF THE STUDY

The goal of the study is to contribute to the formulation of laws and policies relating to the protection of Traditional Knowledge and Collective Biocultural Heritage (CBCH) of local and indigenous communities at national and international levels. By examining their customary laws and practices for the management and protection of biological resources and related knowledge, and community priorities for TK protection, the study was designed to explore alternative *sui generis* intellectual property models that can better support local livelihood needs, cultural values and knowledge systems. Since existing intellectual property rights such as patents are designed to protect modern inventions through exclusive rights solely for commercial gain, they may not be appropriate for protecting the distinct traditional knowledge systems and livelihood needs of indigenous and local communities. Both the historical and contemporary principles and practices of the selected communities relating to TK were considered for broader understanding and interpretations to inform policy development options.

The study focused on knowledge systems regarding medicinal plants which constitute the biological resources and intellectual property of the knowledge holders. It considered the urgent need to develop a *sui generis* system for protecting the rights of communities over TK and access to biological resources (BRs). The study aimed to understand the nature of community rights and values relating to TK and Biological Resources to identify customary systems for TK protection, inform the development of Prior Informed Consent (PIC) and benefit-sharing mechanisms for improved livelihoods, and strengthen customary resource management systems that sustain TK and biodiversity.

The specific objectives of the study included to:

- a) examine existing national policy and legal frameworks that have an impact on TK systems regarding medicinal plants in Kenya;
- b) document existing traditional systems of management of TK and BRs so as to establish the extent of their existence;
- c) identify traditional protection systems for TK and BRs, and how they are transmitted from one generation to the next;
- d) identify ownership, access and benefit-sharing regimes for TK and BRs, and assess their potential use to improve the indigenous communities' lives.
- e) determine the interplay between traditional protection systems and national policies and laws for protection of TK and BRs.

3. THE TARGET COMMUNITY

The study involved ethnic groups of extreme disparity in terms of socio-cultural background and geographical position to establish utmost similarities and differences for safe generalisation on the mid-way ethnic groups and to understand the range so it can be accommodated in national law. Two categories of ethnic groups including the Bantus represented by the Mijikenda and Nilotes represented by the Maasai were selected. The two are distinctively comparative. While the Mijikenda who are located adjacent to coastal forests have a comparatively diluted cultural system, the Maasai who live in the savanna grasslands of the rift valley region have a more intact cultural system. While the Mijikenda are largely sedentary agriculturalists, the Maasai are largely nomadic pastoralists.

3.1 The Mijikenda

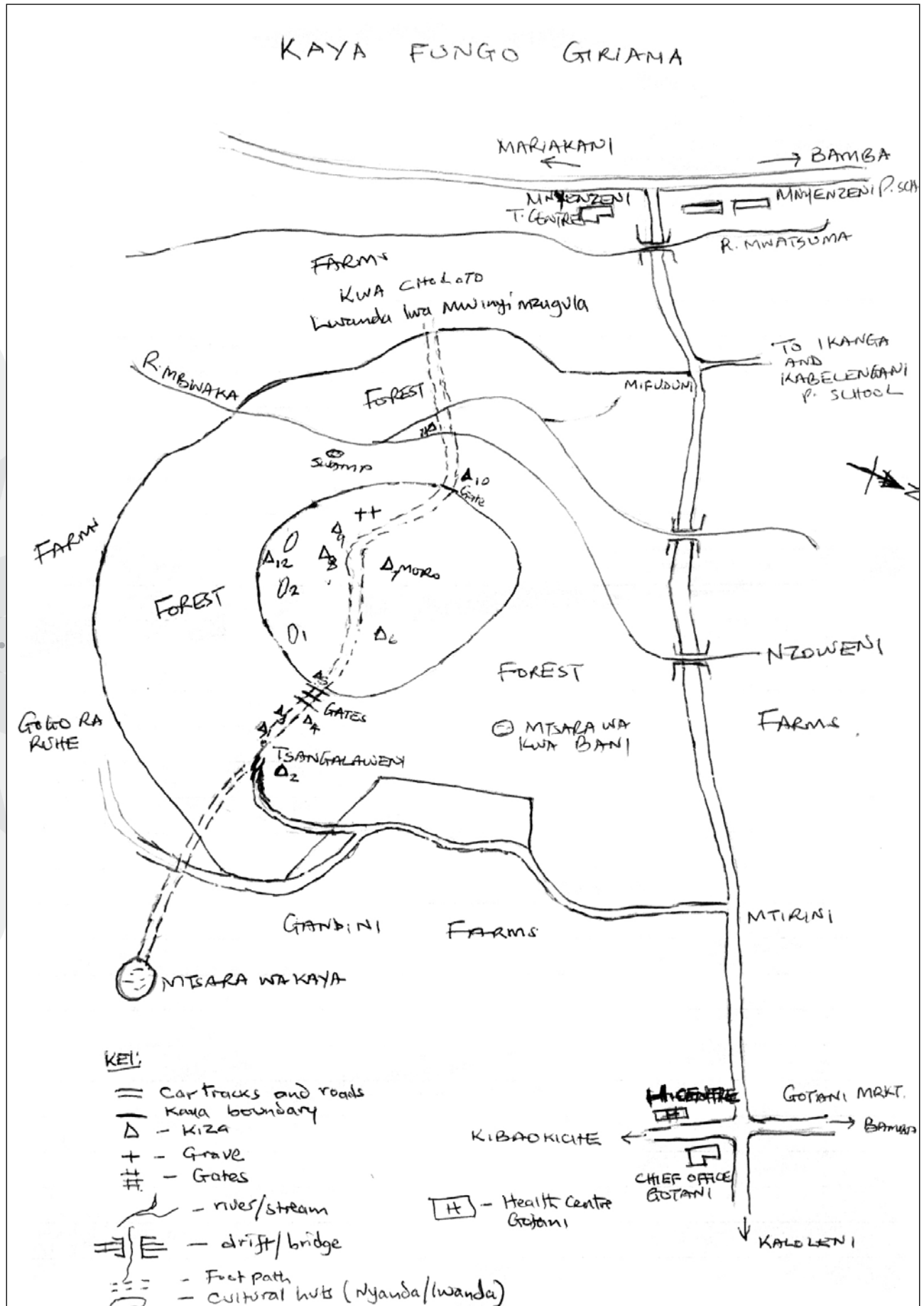
The Mijikenda are a Bantu-speaking people consisting of nine sub-communities namely, the Chonyi, Digo, Duruma, Giriama, Jibana, Kambe, Kauma, Rabai and Ribe that are linguistically and culturally closely related (Willis, 1996). The name Mijikenda is a Swahili derivative from the expression *midzi chenda* [nine homes] referring to the nine constituent sub-communities. The Mijikenda settled at the Kenya coast in the sixteenth century (Spear, 1978) or earlier (Morton, 1972, 1977; Wash, 1992, Willis, 1996), after emigrating from the north when war broke out between them and the Galla. On reaching the Kenya coast, they formed tribal groups that settled in fortified forest villages, the *kaya* (Spear, 1978; Willis, 1996). *Kaya* literally means 'home'. Each sub-community group formed a closely-knit society controlled by a council of elders, the *ngambi* spelled as *Kambi* by Spear (1978), and re-named *atumia alalo* in subsequent times. The *kaya* settlements are found in the current Kwale, Kilifi and Mombasa counties of the Coast Province, established in the 'ancient coastal forest' of eastern Africa, with a rich botanical diversity (Robertson and Luke, 1993; Burgess *et al.*, 1998). Spear (1978) gave a diagrammatic description of the appearance of a *kaya* as a large palisade village located in the midst of a dense forest, with two or more paths that cut through the surrounding forest (Fig. 1). At the last gate of a path there used to be an earthen pot [*chiza*] (Willis, 1996) with magical concoction used during the prayers. In the cleared circular glade there were houses grouped on clan basis, a central meeting place [*moro*] and a protective talisman [*fingo*] (Spear, 1978; Willis, 1996).

Evidently, spiritual belief and magical practices were important aspects in Mijikenda life. In the past, the *kaya* forests were protective premises, i.e. hideouts, as well as a resource base for wild plants which were, and continue to be, important for most of the Mijikenda basic needs (Pakia and Cooke, 2003a), including health care (Pakia and Cooke, 2003b). Like many other indigenous communities, the Mijikenda developed a wealth of knowledge concerning the specific biological resources (flora and fauna) found in the region they inhabited. Thus, over the centuries, the Mijikenda accumulated a wealth of concepts in traditional knowledge and associated practices and customs, related to the forest (Pakia, 2006), the land and sea, and these formed their unique culture.

Generally, the Mijikenda historical accounts indicate a strong intimacy with their plant world, forests, land and sea. In historical *kaya* life, the Mijikenda social institutions were at their most highly developed stage, and biological resources were managed under the traditional regime in accordance with customary laws. Due to increased population in the forest villages, compounded by prevailing peaceful conditions outside the forest areas, the Mijikenda started to move out of the *kaya* villages in the nineteenth century (Spear, 1978), to occupy vacant land outside, where extensive farming started (Robertson and Luke, 1993). However, the *kaya* forests continued to be revered as sacred ancestral landscapes and revisited for rituals and traditional prayers. The historical *kaya* sociopolitical life formed the reference point for the traditional governance and sociopolitical life outside the forests.

The Mijikenda history also reflects considerable contacts with the outside world through colonization and trade. Persian and Arab communities established trade in coastal Kenya as early as the second century, trading in slaves, timber, cloth, pottery, tools made of iron, gold and ivory (Azevedo, 1993). In addition to their socioeconomic impact, the Arabs converted the South Coast Mijikenda (Digo) to Islam, hence introducing a new set of rules. Christian missionaries thereafter from the nineteenth century converted the northern Mijikenda tribes, including the Giriama and Chonyi, to Christianity. Today, the main socioeconomic activities of the Mijikenda include farming and fishing, and petty trade. Of the nine Mijikenda the Digo, Giriama and Chonyi subtribes were selected for the study.

Fig.1: Sketch diagram of a kaya



3.2 The Maasai

The Maasai named after their Maa speech are Nilotic speaking people, who are among the few ethnic groups that traverse the East African region in the Rift Valley - from Laikipia in the north, Kilgoris in the west, to southern Tanzania. In Kenya, the Maasai inhabit northwestern Kenya to as far south as near Lake Victoria (Azevedo, 1993), from the centre to the far south of the Rift Valley.

They are a pastoral people, herding cattle, sheep and goats, and donkeys (Fedders and Salvadori, 1979). A very small percentage has turned to cultivation. According to Maasai's mystical beliefs, tilling of the land is prohibited. This belief stems from their traditional religion and their attitude towards cattle (that *Engai* [God] sent down all the cattle to the Maasai, and any other pursuit is demeaning and insulting to *Engai*. Cultivation is unacceptable, probably because cattle are associated with grass and grass with the ground (Fedders and Salvadori, 1979).

The Maasai, unlike many other communities in Kenya, have managed to maintain most of their traditional lifestyle. Their nomadic life allowed them to have access to diverse biological resources, which in turn led to an accumulation of traditional knowledge on their landscape. To the Maasai, life is a celebration from birth (but not including death) and every event and significant change in an individual's life is a cause for celebration, which inevitably affects the entire community (Fedders and Salvadori, 1979). Other aspects of their lifestyle that characterize the Maasai are the age sets grouping system and the superficial traits that include the lavish application of red ochre to their bodies, the long hair worn by the junior warriors, the coils of wire worn on the limbs of the women, and the low, bread loaf-shaped houses forming circular settlements in scattered locations across grasslands (Fedders and Salvadori, 1979).

The Maasai traditional administrative system is through elders, headed by an individual who has extensive influence in the community, the *oloiboni*. The *oloiboni* is considered a priest–prophet–soothsayer, and is seen as an intercessor between *Engai* [God] and the Maasai. Therefore, his power and advice are believed to come from God, thus, his status is primarily spiritual and not political.

4. METHODOLOGY

4.1 General Research Strategy

A desk-top review of national policies and legislation relating to traditional knowledge and biological resources was first undertaken to examine the extent to which the traditional knowledge system is recognized in Kenya. Subsequently, field work was undertaken to document and examine traditional knowledge for the management of biocultural heritage including customary laws and practices of the Mijikenda and the Maasai and issues relating to ownership, control and associated access rights.

The field work was carried out by Field Researchers who were selected from the indigenous communities, over several months in 2005 and 2007. Data was collected on the Digo in Kwale County, the Chonyi and Giriama in Kilifi County, and Maasai in Kajiado County. Elderly persons and healers were the key informants for discussions on customary laws and traditional practice. However, in each target community some stratification along gender, age and sociopolitical status was considered to capture diverse views and opinions. A snowball method was also used to reach unfamiliar but reliable respondents in the community. Both individual and group interviews were conducted. In total, 171 respondents (31 Digo, 40 Giriama, 40 Chonyi and 60 Maasai) were involved.

Data collection was done through semi-structured interviews, open-ended discussions and focused group discussions with experts, with a strong emphasis on active community participation. Guiding thematic questions were used to develop a questionnaire that helped in the semi-structured interviews and open-ended discussions. Focused group discussions were used to capture collective opinions of the experts (eg. healers). Respondent categories included healers, kaya elders (including some women), village elders, traditional birth attendants who are mostly women, opinion leaders, administrators and youth. Table 4.1 provides the details.

Table 4.1. Categories and number of respondents among the Digo, Giriama and Chonyi

Respondent category	Number
Kaya elders	21
Healers	22
Traditional birth attendants (TBAs)	18
Opinion leaders	26
Youth	24

Unlike the Mijikenda, the Maasai do not have 'typical' healers, as most of the traditional health care knowledge is common knowledge to community members, and is described here as 'general knowledge'. However, specialists in specific areas of traditional health care are recognized, and these are described here as 'specialists'. The Field Researchers who were identified among the local communities were fortunate to get audience with the Maasai spiritual leader. Some individual members of the Maasai choose to sell medicinal plants to persons who cannot visit the collection areas, and these have in this report been designated as 'medicine men'. In total 60 Maasai respondents in different social groups including elders, youth and medicine men were involved. Table 4.2 gives details of respondent categories and numbers involved among the Maasai community.

Table 4.2 Categories and number of respondents among the Maasai

Respondent category	Number
Elderly men and women	16
Specialists	9
Medicine men	10
Morans (young men)	12
Female youths	13

The Field Researchers participated both as active and sometimes as passive observers, thus taking both internal and external views of the activities. As a method, observation allows for uncovering in detail the practical part of the day-to-day life of a community. This method was also useful in ensuring that both verbal and non-verbal knowledge aspects such as hierarchy, social arrangements, unquestionable authority etc could be captured and recorded.

4.2 The Questionnaire

The questionnaire (see Annex 1) comprised guiding thematic questions that were structured for consistency in data collection across the study sites. The questionnaire was developed then first tested by the Field Researchers during the rapid appraisal exercise to establish its potential in capturing the data and was subsequently refined before a comprehensive survey was conducted. Although structured, the questionnaire was used as a guide for the semi-structured interviews and open-ended discussions focusing on specific areas of coverage targeted for capture. It targeted qualitative data on different aspects of CBCH. The responses were sorted out and discussed under related subject matters and concepts of respective sections of the questionnaire regardless of the sequence of the questions. The following broad areas were investigated:

- a) Existing customary laws and their application in the use and access to biological resources and related traditional knowledge.
- b) The criteria of ownership and sharing of biological resources, and transmission of traditional knowledge.
- c) Traditional systems used for the protection, conservation and maintenance of CBCH.
- d) The change processes, from traditional to modern lifestyles, their implications and the associated perceptions of the indigenous communities.

4.3 Interviews and Focused Group Discussions

The respondents were visited at their homes for interviewing. Although most respondents were interviewed individually, a few sessions involved group discussions, and others were focused group discussions (FGD) which involved experts (healers). Some respondents were re-visited to confirm previously collected information or to seek new information where deemed necessary.

To capture most of the targeted information and to create a level platform for the respondents, the interviews were conducted in the language of the target population. Thus, among the Mijikenda, *Chidigo*, *Kichonyi* and *Kigirima* languages were used for the respective tribes. For the Maasai, the national language in Kenya, Kiswahili, was used. Observations showed that the Maasai respondents were conversant with Kiswahili, thus its use during the interviews and discussions was adequate.

Meetings and discussions with selected traditional health practitioners (THPs) and other knowledge holders were held, where specific aspects including utilization, ownership and access regimes, etc relevant to collective biocultural heritage were subjected to detailed discussions. Local politicians and administrators were also involved to capture the interaction between traditional and modern management and governance systems. The views and interests of the experts captured in these meetings supplemented the results captured from individuals and focused groups. Subsequent interviews to document the wealth of knowledge on collective biocultural heritage were conducted to initiate the development of community traditional knowledge registers as a protection mechanism.

5. RESULTS AND FINDINGS

5.1 Analysis of National Policies and Legislation on TK and Resource Rights

Analyses of national policies and legislation reveal that for a long time, national development policies and strategies assumed that indigenous communities were primitive and mismanage their natural environment. This attitude principally led to development of the western top-down management systems where local communities are seen merely as recipients of instructions to protect rather than as participants (Mumma, 2004). This is evidenced by the policy and legislative framework on traditional medicine, intellectual property rights and forest management, that systematically increased central governance and diminished the role of local communities in the decision making process.

5.1.1 Traditional Medicine: From marginalisation to recognition

From the beginning of colonial occupation the official health policy was the introduction of modern health services leading to the rapid marginalisation of traditional medicine and medicinal plants. This negative disposition towards the practice was attributed mainly to cultural imperialism that had little understanding of traditional technologies. The authorities viewed traditional medicine as primitive. It was clear that the official morality of the colonial power did not approve of traditional medicine and sought to crush it. Two main methods were used to crush the practice: orchestrated campaigns of a cultural-imperialist variety, and criminal law. The colonial administration did not develop a legal and institutional framework for regulating traditional medicine and harnessing its benefits. Nor were the practitioners accorded any professional status. A specific legal instrument was chosen to deal with the practice, which simultaneously recognised and tried to stifle it. For instance the Witchcraft Act Chapter (Cap) 62 of 1962 was used to criminalise the practice and discredit its practitioners (Mutungi, 1977). Throughout colonialism therefore, with the exception of traditional midwifery, traditional medicine was unlawful. The practice thus existed at the periphery of modern medicine and health care arrangements. The decade following independence in 1963, was marked by official indifference towards traditional medicine. During this period, infrastructure development excluded the development of traditional medicine. It wasn't until the late 1970s when it became officially accepted that the contribution of traditional medicine to health delivery arrangements was positive, at least potentially. Traditional medicine was thereafter first comprehensively documented in the 1979-83 Development Plan which subsequently led to the introduction of administrative regulation of traditional medicine practitioners in the 1970s. From this time it was accepted that traditional medicine was not illegal. Subsequent development plans continued to recognise traditional medicine but the legislation continued to abstain from the regulation of traditional medicine.

In the subsequent decades many national institutions and scientists such as ethnobotanists, ethnopharmacologists, agriculturists, foresters and food technologists focussed on research and development of traditional medicine and medicinal plants (Kokwaro 1976, 1983; Pakia, 2003a, 2003b; Mutta 1996, 2003). This body of knowledge has informed the development of national policies and legislation on traditional medicine and medicinal plants notably the Traditional Medicine and Medicinal Plants Bill and the national policy framework on Traditional Knowledge, Genetic Resources and Traditional Cultural Expressions. These are valuable instruments that provide the opportunity for enhanced integration of traditional approaches in health care and biodiversity management including protection of traditional knowledge.

5.1.2 Management of Forest Resources: Centralising governance

When Kenya became a British Protectorate in 1886, the Colonial Government developed an interest in forests resources for their economic benefit. The first forest policy was published in 1957 and then updated in 1968 (Ludeki, Wamukoya and Walubengo, 2006). Both policies focused on strengthening central governance of natural resources, including forests, an important source of medicinal plants. For example since the beginning of the colonial rule, most natural forests have been gazetted as protected areas, thus eliminating the role of indigenous people and forest adjacent communities in the administration and management (Mumma, 2004). As from 1992, kaya forests were targeted for gazettement as national monuments under the Antiquities and Monuments Act, by the National Museums of Kenya (NMK). The management of kaya forests was thus co-shared between communities and NMK. The traditional kaya forest landscapes gazetted as protected areas include Marenje, Dzombo, Mrima and Chonyi that were gazetted as Forest Reserves under the Forest Act (CAP 385) (revised to Forest Act 2005) and manned by the Kenya Forest Services. A total of 37 kaya forests were gazetted as National Monuments under the Antiquities and Monuments Act (CAP 216) (revised to National Museums and Heritage Act of 2006) and manned by the National Museums of Kenya (NMK). More recently, 10 of the Kaya forests were listed as World Heritage Sites and are under the management of NMK and the stewardship of United Nations Educational and Scientific and Cultural Organization (UNESCO). These include the Giriama kaya, kaya Fungo; others are kaya Kauma, Jibana, Ribe, Kambe, Bomu, Fimboni, Mudzi-muvya, Gandini, and Mtswakara.

The forests gazetted as Forest Reserves are under direct Government management and the Mijikenda have been alienated in management, access and use, and traditional rituals and prayers. The communal ownership of these forests has also gradually reduced. Forest Reserves also include Mangrove forest stands, a highly valued resource for the local communities.

Notably, the above changes have partly revoked historic rights derived from community based legal systems, and opened up community rights to exploitation and use by persons considered outsiders by the community. In governance, community based traditional leaders and authorities have been invalidated and replaced by state appointed leaders. The effect has been to alienate indigenous communities from their heritage and reduce their traditional governance system to a peripheral management system, which is often ineffective and secondary in status (Mumma, 2004). Communal ownership and the concept of CBCH has also gradually reduced.

5.1.3 Intellectual Property Rights: Inadequate protection for TK

Policy support is necessary to stimulate the development of traditional medicine technologies. In particular the protection of intellectual property rights of traditional knowledge holders has been wanting. The current policies governing IPR are inappropriate for the protection of traditional knowledge and related resources and the mechanisms for the protection, access to and benefit sharing arising from traditional knowledge and related resources are inadequate. For example while the government is keen to enforce intellectual property rights - patents, plant breeders rights, copyright, trademarks for innovations and creations produced through modern science - there has been no effective legal instrument to protect the intellectual property of traditional innovators. The Industrial Property Act Cap 509 of the Laws of Kenya, that could protect the intellectual integrity of traditional people disqualifies traditional knowledge and products from patenting because of the criteria used to define innovations. For example, patents, which are founded on capitalistic principles of economic monopoly, fail to take into account the informal contribution of local communities to the maintenance of genetic resources and their ancestral rights over traditional knowledge. The Laws of Kenya do not recognise communities as legal entities and consequently communal ownership is not honored or recognised by patents and cannot therefore protect traditional knowledge. As a result of the lack of recognition and protection of traditional knowledge indigenous and local peoples do not share in, at least in a fair and equitable manner, benefits arising from the appropriation of their medicinal knowledge and its subsequent use in drug development. Hence the need to strengthen the existing mechanisms with appropriate measures to develop alternative protection mechanisms. Although in the new constitution of 2010 culture is recognised and appreciated, and the state made a policy statement 'to support, promote and protect indigenous knowledge and the intellectual property rights of the people of Kenya' – the procedures for the protection of IPRs specifically from an IK perspective are lacking.

Box 1 - The role and uncertain future of TK

Traditional knowledge including indigenous knowledge and related practices have and continue to have a role in the life of the indigenous and local people, as a means of survival and sustainability of resource supply. However, due to national and global forces e.g. new governance, education, religion and modernity, this knowledge and related practices are threatened, and the transmission from older to younger generations may not be guaranteed in the long run.

The Government has relented the colonial approach of suppressing TK to embracing it, as indicated by various 'TK-friendly' Bills, for example the Traditional Medicine and Medicinal Plants Bill 2010. However, the resilience of TK so far observed does not guarantee its existence if more is not done. The loss of TK may lead to gaps in survival of the local communities and sustainability of the resources. This study points to potential mitigations for this problem.

5.2 Recognition of Customary Law and Land Tenure in National Legislation

Historically, colonialists did not undertake a whole-scale adoption of local African practices and their customary laws but the practices have continued to be practiced by the communities in the traditional set up. Traditionally the rights of access to land were granted by the political authority of a given community. Such authority did not own the land but exercised management and access control over it. The political control facilitated the procedures for granting rights of access and maintained an equitable balance between the availability of land and the needs of individual members of the community. Thus, there was no ownership either by individuals or the political authorities in the sense of ownership under English law. Nevertheless, the customary land tenure types, rigor of control and degree of communalism differed from community to community. The social formations of people in relation to the prevalent land use at the time (hunting, gathering, herding, and settled farming) were important influences on the land tenure system in each community. Many of the challenges arising from land reform in Kenya stem from the historical systems and authority related to land. The **Registered Land Act** (Cap. 300 of the Laws of Kenya – in the old Constitution) enhanced the individualization of tenure among the indigenous communities. Thus, the duality of statutory and customary law constitutes the main divide with competing jurisdiction which is an ever present element.

The African property system in contrast to the Western model traditionally constitutes a collective responsibility, which ensures that rights are equitably distributed among all members of society. The control authority is either vested in the grandfather, descendent or clan but the exercise of this power does not involve exclusive appropriation or distribution “upon whim and will”. In this sense to describe tenure systems as simply communal and usufructory obviously distorts the very complex relations between the rule of the customary property law and the manner in which they function.

However where central governance dominated and traditional governance institutions were marginalized, customary laws only applied in cases where advice was sought to arbitrate in land disputes. In this regard, customary law is provided for in the current legal arrangement albeit to a limited extent.

The application of Customary Law in Kenya is governed by the **Judicature Act Cap. 8**. Section 3 (2) provides the circumstances and conditions under which customary law shall be applied by Kenyan courts. *“The High Court and all subordinate courts shall be guided by African Customary Law in civil cases in which one or more of the parties is subject to it or affected by it, so far as it is applicable and is not repugnant to justice and morality or inconsistent with any written law, and shall decide all such cases according to substantial justice without undue regard to technicalities of procedure and without undue delay.” — The application clause.*

This provision may be dissected to a number of elements comprising conditions and circumstances for its application in Kenya including:

- i. It can only apply in civil cases excluding Contract and Tort. What amounts to civil cases in customary law is elucidated in the Magistrate's Courts Act Cap. 10 Sec. 2 of the laws of Kenya, and include land held under customary tenure.
- ii. It is only applicable if it is not repugnant to justice and morality.
- iii. Customary law applies only as a guide, i.e. the courts are not bound to apply it.
- iv. Customary law applies only in respect of cases where one or both parties is either subject to customary law or affected by customary law.
- v. Customary law applies only if it is not inconsistent with any written law.

Working under the Provincial administration, community elders today can give guidance in land allocation and arbitrate in land disputes, more or less from a customary point of view, but their decisions are only subordinate to those supported by the national legal systems. In addition the elders are presented with situations different from the historical, e.g. land ownership at individual rather than communal level. Furthermore, national recognition of customary law is characterized by some limitations and some sources of the law disapprove customary laws (e.g. modern global religions).

As a result of the exclusion of local communities in decision making, due to the dominance of English Law, there has been increased insensitivity towards traditional management approaches, customary laws and practices, forest conservation and increased encroachment of cultural forests. In summary it can be deduced that customary laws have been weakened since independence due to extension of central government control to the village level and implementation of national laws for natural resources and intellectual property rights based on western models.

On the other hand, it is important to recognize that the imposition of English law during colonization did not completely extinguish the existence of customary legal systems, as in the independent Kenya, legal pluralism was legitimized by providing for the applicability of several bodies of legal rules contemporaneously. Further, after independence, attempts to do away with customary land tenure were not completely successful given that the government could not exert *de facto* control over land management and allocation with complete displacement of the traditional system. Thus, the customary principles by and large remained important to the communities on a day-to-day basis in terms of land allocation, inheritance and succession; and the authority and the role of elders in land management, allocation and arbitration continued albeit to a limited extent.

At the same time, the persistence of these customary laws can be attributed to the will of the people at the grassroots level. The fact that these laws are important to them could provide valuable pointers to approaches or mechanisms that offer space for indigenous communities in decision making processes. This study therefore sought to undertake field research among indigenous communities with a view to understanding their customary laws for management of collective biocultural heritage.

5.3 Analysis of the Customary Laws of Mijikenda and Maasai communities

5.3.1 Basic Customary Laws and Principles

The discussions with the indigenous communities focused on collective biocultural heritage whereby the documentation was undertaken on various aspects of the traditional knowledge system. The nature of the bio-cultural knowledge was also diverse and covered for example, literary, artistic or scientific works, rituals, song, dance, medical treatments, divination, rain making and practices in agricultural technologies and techniques. The documentation was valuable in establishing the extent of traditional knowledge and thus initiated the establishment of community traditional knowledge registers as a form of protection.

The study results reveal a wide range of principles and customs governing various aspects of the biocultural resources. The respondents narrated a set of uncoded and unwritten laws that governed the collection of resources that occur in the community forests landscapes. Some were recognised informally though still very active and part of the day to day life of the populace, and others were not actively observed.

An analysis of the customary laws found that the three key customary law principles of Andean Quechua communities – Reciprocity, Equilibrium and Duality – apply in traditional management of biocultural resources including knowledge protection and benefit sharing among both the Mijikenda and the Maasai. Reciprocity means equal exchange, Equilibrium means balance or harmony in nature and society, and Duality means the use of complementary systems.

The principle of Reciprocity is notable among the Mijikenda, for example in their kaya rituals where sacrifice materials include seven seed grain types (the commonly cultivated crops) during the prayers for adequate rains needed in the crop-farming season. This manifests in the belief that some spirits help in getting a good harvest and must be offered part thereof in return. In their traditional healthcare, bird or animal life is sacrificed to save human life in the treatment rites, which is also in line with the principle of Duality (animal and human). The Mijikenda believe in three spiritual beings: natural spirits (*pepho*), spirits of the dead ancestors (the living-dead) (*koma*) and evil spirits (*shetani*).

Pepho and *koma* are believed to bless when entertained and curse when angered, and these can also counter the evil power of *shetani* in protection of humans. The belief in the spiritual world as a source of social and environmental harmony, including good health, is based on the principle of Equilibrium. The principle of Duality is reflected in the belief that there are good and bad spirits.

Among the **Maasai** the indigenous view is based on Brotherhood, Unity and Reciprocity. Thus the Maasai can teach their general traditional knowledge to anyone for free. A knowledge holder is expected to share all his general knowledge to a knowledge seeker, which is a Reciprocity principle. This is based on the understanding that the knowledge is essential for surviving the challenges of life which are common in the environmental area that they live. Respect for customary values, the order of elders and the power of spirits, is a reflection of the principle of Equilibrium in the Maasai customary life. The principle of Duality among the Maasai is depicted in the belief that the Maasai worship one God (*Engai*) who is said to dwell in all things, and is good or bad depending on the conduct of the community. He may send prosperity and happiness, in which case he is called *Engai norok*, the black God; but when he is angered by the community, then in retaliation, they believe he sends famine and death and he is then referred to as *Engai na-nokie*, the red God.

5.3.2 Traditional Governance and resource management systems

Traditionally, the Mijikenda governed the kaya forests as collective biocultural heritage (CBCH). The governance system constituted the *ngambi*, who were Kaya elders. During the historical Mijikenda life when they lived in close-knit community systems, the traditional regime (*ngambi*) was responsible for rule-making and enforcement, including management, control and access to biological resources and traditional knowledge, and agricultural activities. Resource base areas such as the kaya forests and the sea were subjected to traditional rules and rituals, which were organised and led by the elders, under the advice of a seer who communicated with the spiritual world to explain the immediate future, including prediction of the weather and breakout of diseases. Permission to use biological resources was gauged on whether the use entertained or angered the spirits. Consequently, rituals and ceremonies for appeasing the spirits were done where the use was infuriating to the spirits. Unsustainable uses of the forests were part of the causes that angered the spirits. Essentially, the existence of CBCH (i.e. traditional knowledge and related biological resources) suggests the existence of associated customary law or practice.

The *ngambi* governing system was traditionally developed through progressive initiations into the senior positions. At each initiation level, the trainee received secretive knowledge that equipped them to be managers and advisors of the subjects. A fee was paid to the senior *ngambi* who conducted the initiation, and the training culminated with a 'graduation' ceremony. The various *ngambi* levels were designated by the type of stick they carried around the community. The secrets that were known only to the graduands enhanced trust from the rest of the community.

The Maasai traditional knowledge is derived from the harsh climatic conditions they live in. The Maasai have less rigid rules in terms of access and use of the CBCH, some of which are seasonal e.g. the medicinal plants, pasture and water. This is because the traditional knowledge and resources are considered in survival items. From an external view, the customary rules for the use of CBCH can be described as excessively generous; but the internal view is that the rules are focused towards the survival of the community. Living in a dry, hilly landscape and practising pastoral life, the Maasai require effective resource management practices to ensure a healthy environment where pasture and water are available throughout the year, and equitable distribution to the community members is maintained. The Maasai use a rotational system to manage their landscape, guided by customary institutions headed by Maasai elders as advisers who specify the schedules to move to new grazing fields. Although the Maasai do not have chiefs (Fedders and Salvadori, 1979), selected elders have political and spiritual power (Ole Sankan, 1971) and these supervise the day-to-day actions of the Maasai.

5.3.3 Customary laws for decision-making and Prior Informed Consent (PIC)

Traditionally, the Mijikenda governance organ represented the community as a whole. Therefore, on behalf of the community, the *ngambi* made all the decisions regarding internal access to traditional knowledge and biological resources. A *ngambi* was formed for a given kaya and with population expansion and breakups of the groups (Spear 1978), new kayas were found and new *ngambi* structures were formed. Taking kaya forest management as an example, the community members had to seek the consent of the *ngambi* as a group or as an individual prior to accessing a resource in the forest. The decision of the *ngambi* on access was based on the necessity of access to the applicant and the consequence of that access to the health of the forest or the integrity of the culture. Thus prior informed consent (PIC) was the primary system used for access to resources in the kaya forest. Access to healing, both the knowledge and the resource material, was a bit different, and to an extent more complex. Access to some healing knowledge by an applicant was determined by the *ngambi* through a rating process that assessed the personal conduct and motive of the applicant. But in other situations, i.e. recruitment, an individual healer selected a relative or friend as a helper, who ultimately accessed the knowledge. However, in spiritual healing, which was viewed as a clan property, the knowledge was selectively inherited, and this can be before or after the life of a practising healer. The decision on access in this arrangement was spiritually guided, for example, a selected heir falls sick until he takes up the practice (*mkoba*).

There are exceptional situations where PIC is not necessary. The customary policy makers seem to have prioritized the health of its community, thus exempting access to medicinal plants by healers, probably fearing that the time needed for the consent processing might prove fatal to the patients. However, this exemption is not applicable for prohibited collection areas, such as sacred parts of a kaya, where collection is likely to anger the spiritual world and result in more suffering instead.

The study could not immediately establish the actual traditional rule for third party access, but through inference some responses indicate that the PIC systematic mechanism for internal access is an applicable principle for third party access. The third party application probably was supposed to be more extensively scrutinized by the entire *ngambi*, who probably would need to consult with the entire ethnic group at that locality. Some third party access incidents were noted to have brought in undesirable effects on conservation (see Box 2).

Box 2- Examples of Unauthorised Access to CBCH, leading to over-exploitation

In kaya Muhaka of the Digo, a research organisation, through the Kwale County Council, accessed part of the kaya for research purposes. Since the community/elders were not involved through the traditional PIC system, the community understanding was that the kaya was in the process of changing ownership. This led to mass extraction and exploitation of the plant resource, creating clearings in and around the forest, which through bush fires resulted in vegetation gaps dominated by the invasive species *Lantana camara*, at the expense of the biodiversity-rich vegetation.

In Kinondo, Kwale, a respondent complained over a film documentary that she saw much later in a seminar in Nairobi. The respondent and colleagues were videotaped performing some healing practices but were not aware of the implications of the recording. They later saw themselves in the film, which was shown to a wider audience without their consent.

5.3.4 Customary laws for ownership, sharing and transmission of CBCH

Traditionally, both the Mijikenda and the Maasai consider CBCH as communal possessions. For the Mijikenda, whilst knowledge in the *ngambi* was to specific individuals, the custodians of the CBCH may be individuals, a group of individuals or groups of communities. Communal ownership is either at clan (extended family groups) or community (e.g. entire Digo group) level. Land and materials of wealth were owned at clan level while forest, sea and medicinal plants were owned at community level. However, there are internal differences between the Mijikenda nine ethnic groups, and this may also be true on the clan ownership arrangement. While the Digo are matrilineal, the Giriama and Chonyi are patrilineal in terms of inheritance.

Sharing of a clan resource, such as land, was a permanent transaction between the members involved and their future descendants even though these may be free awards, with no documentation or formal agreements involved. The strength and authenticity of such sharing was ensured by the presence of the elders as witnesses.

Community biological resources were viewed as heritage from the past generations, with the current generation having an obligation to maintain and leave them in usable condition for future generations. Clan-owned resources are inherited accordingly as per the customs of the community, whether matrilineal or patrilineal. On the other hand, the **Maasai** view trees and plants as signs of the Supreme Being, *Engai*, meaning that no one can claim proprietary rights over them. The same is true for wildlife. Traditionally, therefore, all Maasai have unregulated access to the botanical life in the area of habitation.

However, both the Mijikenda and the Maasai recognise two types of knowledge: 'common' and 'specialized'. The Mijikenda traditional knowledge ownership patterns are similar to those for biological resources discussed above. The 'general' knowledge, that includes a part of healing knowledge (knowledge for everyday healthcare) is owned at community level, while spiritual healing and seer/ divining knowledge is owned at clan level. Accordingly, specific Mijikenda clans produce seers/diviners and spiritual healers, while other clans specialize in other ailments (e.g. fever, children's diseases, snake bites or madness).

The transmission of specialized knowledge involves payment of a predetermined token (*kadzama*) by the apprentice. However, the general knowledge is shared freely among tribal members, including other Mijikenda communities, but excluding non-Mijikenda communities. Like in many other African communities, the Mijikenda and Maasai traditional knowledge is transmitted orally in discussions or group gatherings, and through active participation in traditional events such as initiations, rituals and ceremonies. Although most Mijikenda collective bio-cultural knowledge was passed on orally, some medicinal knowledge was codified.

Among the **Mijikenda**, the traditional sharing strategy is based on equity at either clan or tribal level, or at the highest level, the super-tribe level (i.e. Mijikenda-wide). Thus, associated resources, forest, land and sea were shared equitably for the benefit of the entire community, and the general knowledge viewed as a related tool was shared as per the same customary sharing patterns. The rules for the internal sharing were clear among the Mijikenda. But where the traditional knowledge was perceived as belonging to the individual seer or healer, community control and management was limited to divinely rules (i.e. wrongs punished by spiritual powers). Overall, therefore, both the knowledge base and the resource base were under the management of the council of elders (*ngambi*), who vetted the seekers and instructed the healers on what to do and who to have dealings with. To the Mijikenda, third party access was considered to be access by tribes other than the Mijikenda. The historical accounts indicate that was hardly any sharing of traditional knowledge and biological resources with third parties, which means that sharing was not beyond the super-tribe level. In other words third-party sharing is a relatively new concept to the Mijikenda.

The Maasai, in contrast, have more generous systems for sharing for both common traditional knowledge and biological resources, which are best described through the article 'The Tragedy of African Commons' (Hardin 1968). The unwritten Maasai rules dictate that those who have linguistic and thus cultural access to the Maasai way of life will have access to the valuable knowledge. Thus members of a different ethnic group may have access to the knowledge and can apply it in the use of the biological resources. Based on the perception that the naturally occurring biological resources belong to the Creator and not the community, knowledge on resources was not viewed to belong to one community, but ought to be shared widely (i.e. inclusive of other communities).

The customary law principles used in guiding equitable sharing of knowledge and resources in both Mijikenda and Maasai communities include:

- **Reciprocity:** Where equity is the main concern, thus community members feel obliged to give as much as they receive. Knowledge that is learned from an elder should subsequently be taught to the youth in its entirety. On the same note the entire biological resources inherited from the previous generation should be surrendered to the next generation.
- **Equilibrium:** Where belief and respect for spiritual powers plays a role in resource and benefit sharing. The community members believe that for one to live in peace and harmony, one should be fair to others, as the spiritual powers are watching and will punish the wicked. In both Mijikenda and Maasai communities, aspects of traditional governance were important in decision making and law enforcement towards equitable resource and benefit sharing. Also collective tenure played a considerable role in equitable resource sharing. However, among the Mijikenda, PIC for the CBCH also contributed towards equitable resource and benefit sharing among members of that community, and to a great extent locked out other communities. On the other hand the Maasai free access system for most of their traditional knowledge and biological resources, allowed a wider resource and benefit sharing beyond just the Maasai.

Specialized knowledge, that is, spiritual knowledge for the Mijikenda and Oloibon knowledge for the Maasai, was transmitted through rituals, initiations, oaths and secrets, and a final rite (graduation) for the apprentice to be introduced to the group members.

Mijikenda healing knowledge could be transmitted in three ways:

- i. **Inheritance:** Spiritual healing knowledge (e.g. seer, divining and spiritual healing) is transmitted through inheritance. In this mode of transmission a healer completes rites on his death-bed, where an identified heir gets last instructions on the practice. Inheritance also occurs after the death of a healer, where a family member 'is claimed' through possession by spirits, which manifest as an ailment, disease or discomfort.
- ii. **Recruitment:** This method involves selection of the heir by the healer. The heir starts off as a *mtegi/mwanamadzi* [helper], assisting the healer to perform his duties. Over time the heir gains the necessary experience to practice. The training here involves both oral and participatory aspects.
- iii. **'Buying':** In this method one consults the healer and requests to learn the trade, where community control is limited, and this has been the field of abuse in resource and knowledge transmission and sharing

Historically, for some healing knowledge recipients were subjected to a rating process prior to transmission, where motive and personality of the subject were investigated through a series of tests. This discouraged requests from unsuitable persons, and minimized deceit in the profession. Generally, there were no conditions attached to traditional knowledge sharing, except for healing knowledge that includes general advice or guiding principles that are predetermined and some of which is believed to be spiritual (such as service price, prohibited foods for patients, and prohibited actions for healers). A breach of these principles, it is believed, results in automatic loss of the healing power. The healers believe that the rituals, the spiritual performances during transmission and during treatment, are the backbone of healing ability - that plant concoctions have no curative effect without incantations, collection rituals, blessings of the trainer and legitimacy of knowledge authority (i.e. the chain of command and transmission of the knowledge). Thus for healing to be done, the healer has to have been rated and properly 'trained'. Based on this belief, a healer is free to show the plants used for his medicine to a non-healer, and the latter will still remain a non-healer. Unfortunately, this belief has contributed to the entrance of quacks in healing and abuse by scientists who used the knowledge for further investigation with no consideration of the source. On learning these deceits, healers have become very secretive with their knowledge.

Amongst the Mijikenda, knowledge generation is common among spiritual healers who use spiritually guided dreams to identify curative plants or other substances. However, traditionally, a healer innovator receives only a symbolic recognition (a crown) with no monetary value, meaning that his achievement is a community service that has no personal economic gains. The innovator claims no rights over the 'new' medicine either, except for the service payments/token given during transmission and treatments, a point of departure with the Western innovation systems.

The **Maasai** community developed CBCH based on the surrounding flora and fauna, employing the best natural method of developing the knowledge base that is open to sharing. With this methodology the knowledge is seen as belonging to the community as a whole, ensuring members have access to it and ensuring that the knowledge base is furthered through individual experience. Thus, to the Maasai, the traditional knowledge acquired is seen as a community possession with no rules pertaining to its access, to maximize the survival benefits. In fact, the knowledge is depicted to be above a communal asset, for the survival of the entire humankind inhabiting that area. This is best described in the Gaia philosophy through which one would be able to identify the communal knowledge as an organic phenomenon - the knowledge is like a living organism whose perpetuity and propagation is ensured by the existence of only a few basic rules.

The knowledge of the oloiboni is considered spiritual, and restricted to one clan, the clan of leaders. This knowledge pertains to rituals, rites, signs and medicinal plants. The oloiboni is under oath not to share it except to his successor. The climax of the oloiboni knowledge transmission involves tongue-sucking rites that endorse the new leader to the position. The ritual of the passing over of the secrets and oaths of oloibonship are identical to the biblical story of Isaac and his sons Jacob and Esau. On his death-bed, the oloiboni would call for his favourite candidate to take over the oloibonship and instruct him accordingly. He would then secretly instruct him on the ways and medicines peculiar to the oloiboni. Thereafter, he would administer an oath of secrecy that the knowledge would only be shared with the next oloiboni. Indications here are that the transmission of oloiboni knowledge is an obligation to the holder. He has a duty upon his initiation as an oloiboni to ensure that the body of knowledge is kept alive and as organic as he received it. He does not receive any payment or token for transmitting it, as this particular body of knowledge is not seen as private property attributable to the individual, but divine and belonging to the communion of *Engai* and the Maasai at large.

5.3.5 Customary laws for protection of CBCH and specialised healing knowledge

While the Maasai are only protective of the oloiboni knowledge, the Mijikenda customary law seems protective of external access to CBCH as a whole, and at the same time maintains internal checks for specialised knowledge transmission. This difference may be explained on the basis of comparative environmental hardships. On a lighter note, the Mijikenda customary law considers general traditional knowledge transmission to a third party as wrong, and persons who share it out could be subjected to traditional fines as felt appropriate by the *ngambi*, e.g. verbal warning, traditional fine and social segregation (exclusion from societal benefits and support). However, access to special traditional knowledge in the community or clan (i.e. spiritual healing, *ngambi* secrets and oloiboni knowledge) was more restricted to those belonging to the appropriate group. This was ensured through:

- i. **Penalties and Spiritual Wrath:** Social sanctions and other penalties to defaulters of knowledge transmission or application protected the knowledge within the accepted group or clan. For example, when a healer or a seer shared out his knowledge to someone disapproved by the community, a fine of a goat and eight bottles of palm wine (*kadzama*) was imposed. Depending on sensitivity of the knowledge one could even be prohibited from practicing as a healer.

- ii. **Rating Process:** A rating process was applied before the transmission of TK on medicinal plants to ensure the knowledge is entrusted to a reliable person for the sake of the community.
- iii. **Secrets:** Most special TK comprised secrets that locked out non-members of a group such as healers or elders. For healers, these include incantations and codified communications. Healers have a separate code of names for medicinal plants to hide their identification from the rest of the community.
- iv. **Oaths:** Very important tribal knowledge such as the *ngambi* secrets (Mijikenda) and the oloiboni knowledge (Maasai) is protected by putting the holder under oath not to share the traditional knowledge with unauthorised persons. The common slogan among the Digo '**ngambi taisemwa**' or "Ngambi details are not shared outside" is evidence of this.
- v. **Rituals and Initiations:** Rituals and initiation rites are believed to be spiritually linked, thus not having undergone them, or not being aware of the pre-collection rituals for medicinal plants, takes away healing ability even if the species used is known. And those who cheat (i.e. play the quack) will be punished severely by the spiritual powers.

These internal protection mechanisms helped to ensure that healing knowledge is used properly for the healthcare of the community. However, since these partly work on spiritual beliefs it is evident that they may not apply wholly today.

5.3.6 From sharing and communal management to centralised governance: Impacts on biodiversity and TK

It was evident that sharing in the communities has the role of sustaining biodiversity and related traditional knowledge, in addition to enhancing livelihoods. Traditional knowledge was not documented anywhere, but it was practiced efficiently. Its transmission was not theoretical but practical. The principles around resource and knowledge sharing, added a practical value and direct benefit from the resources that warranted protection, and this translated to the protection of biodiversity. The role of resource sharing is evident from the negative impact where a new paradigm, such as privatization or alienation, was introduced in place of sharing. The principle of communal ownership encouraged policing by all members of the community since they considered the biological resource as 'theirs' and beneficial. Resource privatization/alienation led to the loss of community policing, and material extraction was done at unsustainable levels. As a result, biodiversity was negatively affected. The gazettement of the kaya forests to forest reserves under the Forest Acts of 1968 and 2005 alienated the community from the resource and displaced the traditional rule over those kaya forests. At the same time the gazettement of the kaya forests as National Monuments (NM) under the National Museums and Heritage Act of 2006, to some extent weakened the role of the traditional rules by creating partnership in the management scheme between communities and the Government agencies.

Despite the absence of provocative opposition, these gazettements led part of the community to believe that the forests were changing ownership status, with common understanding being that the NM forests were the property of the white man [*tsaka ra mzungu*] as the founder was a white; on the other hand the Forest Reserves were viewed as belonging to the 'government'. These perceptions encouraged the local community to intentionally over-exploit the plant resources from the forests, as the loss was perceived to be incurred on the 'new' owner. Similar observations were made with the sea resource, where Kenya Wildlife Service (KWS) became the 'new' owner in areas gazetted as marine parks and marine reserves. In all these instances the biodiversity was reduced by the intentional excessive and wasteful exploitation or other conflict activities due to resisting the presumed change of ownership or alienation (e.g. setting bush fires to burn the forests). Although there are benefits in both gazettements, in the event that communities are not involved fully and an alienation perception comes in, then biodiversity loss is certain.

At the same time the social groups whose livelihoods depend on the resources in question are directly affected. Among the Mijikenda the above is true with regard to forests and forest resource materials. When the biodiversity in a forest is affected to an extent that some medicinal plants are not available, the application of these species in traditional health care will not only stop, but will also not be transmitted to the next generation. In principle, therefore, the traditional knowledge will not be subject to sharing between generations, and consequently over time its application will cease. With this in mind the Mijikenda elders did not only teach their youth the traditional knowledge, but also ensured that the biodiversity of their landscape was maintained through controlled and sustainable extraction of material resources. As for the Maasai, the change in land ownership - from communal to group ranches and private farms - led to change in land usage. Some natural forests were cleared for crop farming and other privatised areas were developed to private ranch land not accessible to the general population. In either case, the biodiversity was reduced and traditional knowledge is lost. Ultimately, that traditional knowledge component will disappear from the lives of the community, and their practices (e.g. grazing or primary healthcare), and livelihoods will be directly affected towards unsustainability. Alienation therefore affects the internal survival strategies and sustainability, and exposes the community to considerably rely on external support for survival.

Taking the kaya forests as an example of a landscape subjected to traditional conservation, the customary laws effectively conserved these forests, which were paralleled by the continued application of traditional knowledge in the lives of the Mijikenda. When seemingly 'better' conservation strategies were introduced by the government through gazettlements, the biodiversity of these areas reduced as members of the community started to clear the forests for staple crop farming. Compounded by other influences, components of the associated traditional knowledge, in the absence of the kaya or specific forests resource materials, are likely to be dropped from the lives of the Mijikenda.

A good example is the case with the Chonyi and their kaya Mwarakaya. During the reign of the *ngambi* the community members followed the traditional rule without question, with members respecting, and to a large extent, fearing the social implication of breaking the customary law. On the other hand, the *ngambi* was non-partisan in the application of the traditional law, fearing spiritual wrath for unfair application. With such a strong traditional rule, and availability of the cultural components, associated traditional knowledge was kept alive; but with the absence of that traditional rule, and some cultural materials lacking, the associated traditional knowledge will certainly be lost. The continued presence of traditional customary rule had ensured the continued conservation of the sacred forests and the application of the associated traditional knowledge. Since the introduction of central governance system the sacred forest (kaya Mwarakaya) has to date lost over 90 percent of its vegetation cover due to encroachment by the local community.

5.3.7 The inter-linkages between the CBCH components

African traditional knowledge, a practical entity (Pakia, 2007), remains largely undocumented, and owes its survival to the customary laws and traditional practices associated with it. Indeed there are inseparable linkages between traditional knowledge, biodiversity, landscapes, cultural values and practices, and customary laws, as they all form an unbreakable circle.

Among the Mijikenda, healing knowledge is linked to the botanical diversity found in the different vegetation types, namely: forests on the high ground, on the low lying areas, and the mangrove forests. Some medicinal plant species are found in the thickets and bushlands, grasslands and swampy areas. Together all these vegetation types, which form a rich biodiversity of the coastal forests (Burgess et al. 1998), are necessary for the Mijikenda to realize their cultural values in healing. Thus, the tangible outputs such as treatment of disease and the conceptually perceived cosmovision (e.g. spiritual beliefs), are all maintained in this interlinkage. If any vegetation types are lost or are not accessible, it is not only the biodiversity loss that is countable, but all the other linked components will be affected - traditional knowledge, cultural values, practices and customary laws. Thus, to sustain the circle, all the associated components must be maintained. On the other hand, healing is but a component of many that make up the life of the communities, which are also inter-linked. It was on the basis of this understanding that the Mijikenda traditionally identified sacred areas in various vegetation types, and conserved and maintained the genetic material.

5.4 Key Threats to TK and Drivers of Change

This case study has revealed the following factors driving change in customary law and traditional practices:

- a. **Introduction of Central Governance:** The central governance system has weakened customary laws and traditional governance regimes. Consequently, local communities have embraced national law at the expense of their traditional law. Particularly affected were issues such as land ownership, which changed from communal to group ranch (for the Maasai) or to private individual property (both Maasai and Mijikenda) in the post independence years. Forest resource ownership changed from communal to government gazetted forests both before and after independence (forest reserve, national reserve and national monuments). As such, any arising conflicts/disputes related to land or forest resources are mostly settled via national or international laws, with traditional laws giving peripheral support.
- b. **Modern and "Civilised" Lifestyles:** The modern lifestyle borrows many ideals from the European lifestyle, and seems to be more appealing to the young generation, who have largely abandoned the traditional lifestyle.
- c. **Introduction of Global Religions:** The indigenous communities have adopted global religions, particularly Islam and Christianity. Nevertheless, some of the laws in these religions are in direct conflict with the traditional customs and beliefs, e.g. the kaya prayers, rituals and ceremonies. In this study some locals were hesitant to discuss customary law and practices for fear of its implication for their faith.
- d. **The Media:** The media has converted the world into a big 'village' whereby the new western lifestyle is popularised and conceptually viewed as better and more successful. As a result, a section of local communities adopt the western laws and ideals, despising the principles of their traditional life.

- e. **Education and Schooling System:** The arrangement of the education and schooling system, which recruits children from as early as three years (for kindergarten) and for a whole day, has denied time of engagement between the elders and youths to hold talks on tradition. Consequently, the traditional discussion forums such as *dhome* have died a natural death. This means the youths can only access historical issues (even of their own communities) at school and from a perspective different from that of their traditional view.
- f. **Capitalism and the Free Market:** The introduction of privatization, and the presence of a free market with mixed players and with national and international guidelines, has made community members become materialistic at the expense of their traditional social values and ideals. For example, some healers who were trained and instructed to charge affordable fees for their service defy and instead turn their practice into a source of wealth.

5.4.1 Change Processes in Governance

In governance, the traditional regime constituted by elders was in the post-independence period absorbed by the central government system. Their enrolment, responsibility and representation have since changed from customary to pro-governmental ideals.

Typically Mijikenda customary practices were, to a great extent, applied during the Arab rule of the Kenya coast and during the British colonial era. After independence, there was an introduction of direct administration by the Kenyan Central Government to village level. The Government representatives enforced a change in command. Progressively the *ngambi* responsibilities were redrafted, and over time the Government representatives took up most of the roles of the *ngambi* to render it a redundant organ in the governance system. Although elders continue to be involved in governance at village level, their role has changed to become complementary to the local government, mainly working for the government's interests and not necessarily in favour of traditions and customs. Traditional initiations to eldership levels (e.g. *mungambi*, *mwanatsi*) were dropped and instead incumbent administrators select elders they are comfortable to work with. As a result, the traditional collective responsibility in management and control of local resources and traditional knowledge has disintegrated, and in its place individualism and capitalism have taken root. Today, only semi-traditional institutions are observable with no binding strength as individuals choose what to practise and what not to.

Between 1970 and 1980, the village *ngambi* organs lost what might have been their last major function - the management of agricultural practices and cash crop harvesting. Among the Digo, the *ngambi* put up much resistance to ensure they maintained their roles, but the majority of members (mostly the young generation) were against it, and instead preferred freestyle crop harvesting and individual management of farming practices. The youth won, and the *ngambi* rule in farming diminished.

5.4.2 Change processes in land and resource ownership and access

Traditional landscapes which are a major part of cultural heritage (such as the *kaya* forests), were subjected to exploitation by persons who refused to abide by the traditional rule. Most of these people were from outside the community, who influxed the Kenya Coast in the post-independence time, and did not share the traditional norms and beliefs of the Mijikenda. In an effort to save the situation, NMK gazetted these areas as national monuments (NM). This gazettelement, however, introduced a new dimension where both traditional and government rules were applicable. Where traditional rule or view seemed to work against a rare genetic material (in the scientific sense) the government rule overruled. This means that the communities became only partial owners of their *kaya*. On the other hand, *kaya* areas which were gazetted as forest reserves in the 1890s and even later in the last half of the 20th century, completely changed ownership from community to government and access for use by the community was compromised.

Following the national land adjudication that took effect after independence, the customary law regarding land ownership among both the Mijikenda and the Maasai changed from communal to individual. This has affected inheritance practices, and access and benefit sharing systems related to land. As for the Digo, the land adjudication exercise was compounded by another shift in resource inheritance, from matrilineal to patrilineal which is stipulated by Islamic law, and this change was also shared by other Mijikenda groups.

The changes in land ownership reduced land sharing, and encouraged renting and selling. In the new practice of land selling, the buyer obtained full rights over the land parcel, with no conditions attached. Another change in customary law that followed the land privatization system was that medicinal plant collection by healers from land owned by non-Mijikenda became impractical as social commitments and values were different between the tribes. Thus in the new era, medicinal plant collection slowly became restricted, including on land owned by Mijikenda who do not share the 'old' ideals, e.g. Muslim and Christian faithful, the healers were not allowed. Also collection is restricted in government protected areas such as forest and national reserves. Firewood collection has had more or less similar challenges.

Promotion of customary practices has been difficult because some of them are in direct conflict with the national or religious laws, or modern life. Some of the customary laws are perceived as outdated compared with the introduced western lifestyle (e.g. *ngambi* management of farming). In their place, therefore, alternative authority systems, such as national or religious laws, are preferred. Although the elders expressed concern over the changeover (and they argue that they tried their best to resist), most youth think it is time that some of the 'backward' practices are dropped, e.g. unquestioned parental orders, such as 'forced' marriage.

During the colonial administration, Maasai groupings were institutionalized through the Land (Group Representatives) Act (Cap. 287) and Trust Land Act (Cap. 288) which provided for group ownership of land. Consequently, land ownership changed such that land parcels were owned by group ranches which were formed by individual Maasais. In the post independence era, other land parcels were allotted to individual Maasai families, and the ownership converted to completely private property, on which the rights are subject to the conditions imposed by the individual owner/family as per the provisions of the various laws.

The 'individualisation' of land among the Maasai led to introduction of 'new' restrictions applied in the community. For example the trees and plants, whether naturally occurring or planted by the owner of the land, are seen as attachments of the soil and thus under the control, and management of the owner. Such botanical life stopped being readily accessible to the rest of the community, as it would have been under traditional law. In this case the individual wins while the community and biodiversity lose.

5.4.3 Changes in healing practices and knowledge ownership

Among the Mijikenda the absence of the *ngambi* rule has freed traditional knowledge ownership and transmission modes, including restricted knowledge on medicinal plants. The traditional restrictions of specialised healing knowledge to clan, community or super-community are less observed. Individual knowledge holders, at their discretion, can impart the traditional knowledge to whoever they want. Most medicinal knowledge is now perceived by all Mijikenda to be individually held. Consequently, even people from other tribes can be exposed to this knowledge. Simultaneously, healer training for which formerly predetermined instructions upheld the knowledge as a service to the community has changed to commercial endeavor. Most healers now must have government licenses to operate and are holders of certificates of attendance to seminars, an indication that they are nationally recognized. The traditional healer service fee, which was anything the patient could afford, is higher today, to the disadvantage of many patients. Traditional healers have either put an additional cost to their practice or have improved their services and use modern facilities, which in turn has led to a hike of the service fees. In all respects, the 'modern' healer considers himself as equivalent to an orthodox doctor, justifying his high fees against the traditional 'small' token. This has posed a challenge to the majority of the community who live below the poverty line, and has also attracted quacks in the trade that now lacks checks and balances.

Today, traditional knowledge, resources and benefits are undertaken without customary restrictions, with knowledge holders receiving individual benefits from the recipients. The benefits are varied, and include monetary benefits which exclude the rest of the community. Plant material collection and traditional knowledge documentation were commonly reported during this study, where established research institutions, e.g. KWS, KEFRI, NMK, Forestry Department and the Kenya Agricultural Research Institute (KARI) were involved and benefits accrued only to individuals.

Although the local communities feel obliged to assist these institutions, there has been no paradigm shift to benefit sharing between the provider community and the recipient institution. Nor are there systems to select knowledge that can be shared from that which cannot be shared (e.g. the rating that was done during the *ngambi* regime). In the event of divulging secret information, the locals are no longer subjected to traditional penalties because there are several legal systems in place, and culprits can find refuge in the favorable laws and authority. There is no monitoring or follow up of the use of the knowledge or materials shared out, and there are no conditions attached, unlike in the past, when people were committed to social trust and feared the associated penalties. Today, doing the right thing from a customary perspective is therefore from a personal commitment and choice, rather than responding to the customary law.

Accessing healing knowledge from other tribes is a personal issue. As a result, some individuals include 'new' healing knowledge from other tribes (Kamba, Sambia and Swahili), which is a relatively new phenomenon. This practice along with the loss of the *ngambi*, collective tenure and all the other change factors have changed knowledge ownership to private property.

5.4.4 Effects of the Change Processes on Different Social Actors

The resulting change process in the communities has affected different actors in different ways. Resource privatization and alienation have led to low or reduced availability of biodiversity. Both Mijikenda and Maasai are true African communities in culture, practising gender based division of labour. Mijikenda men are responsible for most of the activities in house construction and repair, and hence are concerned with issues related to collection and utilization of building poles. Women are responsible for firewood and water collection for domestic use. The loss in biodiversity affects the availability of preferred species for timber, construction and firewood. Consequently, men and women responsible for these resources spend more time in search of them, and occasionally have to opt to collect alternative species.

The destruction of forests that are catchment areas has a direct effect on the availability of water. Therefore, if women spend more time in search of the resource, they become less productive in other areas of responsibility. Herbalists are also not exempt from the troubles of scarcity of their required resource, i.e. medicinal plants, and so spend more time (and money) to get the rare species needed. For the Maasai, most domestic activities are the responsibilities of women, thus collecting house building materials and firewood are their responsibilities, as cattle grazing is the responsibility of men. To date, traditional health care is common knowledge to most Maasai.

In terms of knowledge transmission, the Mijikenda youths are affected by the change processes in that they remain uninformed of their customary and traditional life. The traditional knowledge transmission sessions – *dhome* – are no longer held. In addition, youth participation in traditional rituals and ceremonies is rare due to the schooling system arrangements which recruits the youth as early as age 3, and occupies them full time. The Maasai in this regard are relatively less affected, but the government effort to ensure education for all (through free education system that was introduced in 2002) is likely to put them in a similar predicament.

The change process, particularly privatization, is in favour of the rich in the community. The poor are disadvantaged in that they get a raw deal in most transactions involving forest resources. A notable example is the unlawful commercialization of the leopard orchid (*Ansellia africana*) where villagers sell to middlemen at a meager cost, and in turn, the middlemen sell the plant to the tourist hotel industry at exorbitant prices.

Privatization and economic hardships have also led to a weakening of the customary laws. An example is the traditional law breaking or bending in kaya Kinondo. Traditionally, non-Mijikenda were not allowed inside the kaya, or worse, told of the kaya secrets. However, in an effort to realize tangible economic gains from the kaya, an ecotourism business was started at the expense of the cultural values and practices. A similar venture was attempted for kaya Fungo, among the Giriama, but the North Mijikenda tribe is still not in agreement with them. For now, it is not clear how long they will remain adamant in protecting their cultural values in the face of monetary gains.

5.4.5 Perspectives of different actors: Elders and youth

The perception about customary laws and traditional practices relating to natural resources and traditional knowledge differed among respondents. Mostly the elderly respondents expressed a strong desire to bring back the old rule of *ngambi*. It was reported that in 1999 there was a court proceeding at a chief's office over the termination of the traditional *ngambi* rule on cash crop management in Tsimba Location, Kwale District. The elders were the defendants and a group of the younger generation was the complainant. The elders fought bitterly but lost the case. However, when it came to the changes in regard to high cost of healing services, the patients in all age categories were complaining. On the other hand, healers of all ages concurred that their services are an occupation, similar to that of modern doctors, and so deserve to be in tune with the living standards of the day. Thus, despite change, there are traditional knowledge practices and customary laws that still are in practice in different magnitudes and by different individuals/families, although the threat of complete disappearance still lingers.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The results of this study reveal the existence of traditional knowledge and customary law systems among the Mijikenda and the Maasai, which included mechanisms for ensuring biological resources are sustainably utilised and livelihood needs are met. These include principles of equity, reciprocity and equilibrium in the management of the resource and benefit sharing for all. The TK system has been vital to the day-to-day life of indigenous and local communities, derived through generations of living in close contact with nature, and transmitted verbally to subsequent generations for the continuity of knowledge and culture. The system included traditional administration authorities, traditional natural resource managers, health providers, advisers etc. By these means, traditional institutions managed the kaya forests and grazing lands as communal property for the benefit of the community. The elders were the primary custodians of the sacred forest/land areas and were respected by all within and outside the community. This system played an important role in maintaining the integrity of the natural landscape and conservation of the biodiversity therein. Although the TK systems and indigenous innovations have contributed significantly to the present body of knowledge possessed by scientists (e.g. ethnobotanists, ethnopharmacologists, agriculturists, foresters and food technologists) and conservationists, recognition, reciprocation and appreciation by policy decision processes has not been satisfactory.

Among the Mijikenda, the controlled accessibility and use of biological resources by prior informed consent (PIC) under customary rules ensured equitable distribution of benefits to all, including future generations. Use of restrictions and prohibitions were in place for resources of special usage, (e.g. medicinal plants), places of prayer (e.g. sacred kaya points) and rare genetic material, e.g. gigantic tree specimens (believed to be the residences of spirits, and used as curing sites [mzimuj]). On the other hand, the Maasai elders controlled the movement of herders between grazing sites. However, the application of TK systems on the sharing of and access to knowledge and biological resources has been impacted by a number of factors, to an extent that some aspects of TK are threatened.

The introduction of the central governance structure has been the most significant in eroding the influence of the community elders to enforce customary laws and principles that sustained the forests. Traditionally, the relationship between the formal and traditional governance system has been antagonistic. This is because the two compete for legitimacy and influence. In Africa, given the colonial experience, state-based legal systems have predominated and have succeeded in marginalizing community-based legal systems. The transfer of community forests to government protection has not been effective in achieving conservation goals, and has resulted in significant resource degradation. This loss of biodiversity has concurrently resulted in a loss of traditional knowledge and practices. The change from communal land ownership to private allotment has also affected the traditional knowledge and way of life of the Mijikenda and the Maasai, such that benefit sharing systems have been adversely affected.

Lack of legal recognition and protection has led to a situation where custodians of traditional knowledge and innovations are not rewarded for contributions rendered. Although there has been acknowledgement under traditional systems for innovations and for sharing of knowledge and resources, that acknowledgement is not entrenched in the modern legal recognition and protection. Under the current system of intellectual property protection (e.g. patents), communities receive few or no benefits from the use of their biological resources and traditional knowledge by third parties. The system fails to take into account the informal contribution of indigenous peoples and farmers to the maintenance and enhancement of genetic resources, their ancestral rights over traditional knowledge and the impacts of resource privatization on livelihoods and biodiversity.

As the Kenyan Parliament re-considers the policy framework on traditional knowledge, genetic resources and traditional cultural expressions, customary law would be assumed to have received improved force where access to genetic resources found in community resource areas is to be sought from that community. However, this will largely depend on the political will of the government of the day and the legal regime being promulgated in Kenya, i.e. the new constitution. The main challenge is that despite its being entrenched in the constitution specific guiding policies/Acts are yet to be formulated.

The study shows that customary laws and practices include effective mechanisms for: protection of specialized health knowledge against unauthorized third party access; transmission of health knowledge to future generations; safe use for community healthcare; and accessibility for community health needs. While these customary laws and beliefs have been affected by the disempowerment of traditional institutions, shifts from communal to private tenure, western religions and modernization, there still is a strong desire amongst the elders to revive them. This provides an important opportunity to prevent the continuing loss of TK and biodiversity, and to reassert communal ownership. At the same time, the fact that many healers are now practicing commercially and regard TK to be individually held, suggests that a dual system may be needed where both collective and individual rights are recognized. However, relying only on existing IPRs such as patents designed for commercial inventions and not tailored for traditional healers risks further accelerating the loss of TK, cultural values, customary laws and biodiversity.

Effective protection of TK will require the establishment of systems for obtaining PIC from TK holders to ensure they play a full and effective role in decision-making over the use of their knowledge. The questions to be addressed include:

- Whose PIC should be obtained and how?
- How should benefits be shared among communities, in line with their concepts of 'ownership' and fairness?

Experience with ABS law suggests that local PIC should be based on a good understanding of diverse customary, legal, organizational and decision-making processes. The recognition of traditional authorities and collective rights as well as individual innovators and knowledge holders, is important for the maintenance of traditional lifestyles and knowledge systems.

6.2 Recommendations for effective systems of protection, use and management of CBCH

The community collective ownership and equitable benefit sharing systems should receive legal recognition and form a basis for the implementation of protection of TK and biocultural heritage at local level. Policy, legal and institutional mechanisms should be made to allow for the existence of both collective rights and benefits, as well as individual rights and benefits, details of which will have to be discussed with the respective communities, or their representatives at least. Effective institutions at the community level such as *ngambi* should be legally recognized and given proper powers and mandate to contribute to the protection, conservation, management and use of collective biocultural heritage.

Further, the customary laws and principles need to be entrenched in the national policies and laws to the extent that they offer greater protection to collective biocultural heritage and provide enhanced benefits for improved livelihoods of indigenous communities than formal laws. They need to be considered and allowed to form the rationale for the development of a *sui generis* system for the protection, conservation, use and management of collective biocultural heritage. Government support will be required to harness the benefits of the customary laws and principles.

Prior informed consent (PIC), of the indigenous communities' traditional elders, which is the backbone of protection, management and use of collective biocultural heritage, needs to be institutionalized from the community (inter-community) level to the national level to ensure the involvement of traditional people in decision-making processes regarding utilization and access to biocultural resources.

Rethinking conventional forest management strategies means above all recognizing the key roles of indigenous people and their knowledge and social organization in the management and maintenance of biocultural resources. Recognizing these roles provides the basis for greater integration of effective traditional approaches in forest management.

As the rural communities who have been the custodians of traditional knowledge and biocultural resources are key to their conservation, a participatory approach to management that brings forest managers and local communities together in the field as equal partners offers the best opportunity for the conservation and sustainable use of natural resources. In a collaborative approach, the managers and local communities discuss and share the decision making on an equal footing. Customary laws and principles should therefore inform natural forest management plans for example in the protection of biodiversity and traditional knowledge.

Priority needs to be given to strengthening and protecting existing customary law systems, because of the important values inherent in those systems, which are critical to the maintenance of the cultures concerned and also to the maintenance and enhancement of biological diversity. The legitimization of the traditional governance system, reinstating historic ownership, community leaders and traditional structures that define authority will be crucial. But how to achieve this in practice? How can it be made attractive to the youth?

The government should invest in building the capacity of traditional local communities on intellectual property protection, and engage in policy and legal discussions with potential users of genetic resources and associated traditional knowledge. More importantly, capacity building to add value to their knowledge and products will go a long way towards enhancing economic benefits for local communities and strengthening incentives for sustaining biodiversity and TK. This may also help engage the youth, along with a revitalisation of traditional cultural identity and a vision of development which embraces both modern and traditional knowledge for maximising livelihoods (the principle of duality).

To achieve the balance between national interest and community ideals, an appreciation and understanding of the traditional knowledge system including indigenous cultural values and customary laws will be critical to developing any framework for sustainable and locally acceptable management of the indigenous forests.



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ANNEX I

Questionnaire on the Protection of Community Rights Over Traditional Knowledge: Implications for Customary Laws and Practices

1. DATE OF INTERVIEW _____

2. NAME OF INTERVIEWER _____

3. LOCATION, VILLAGE, etc. _____

4. NAME OF RESPONDENT _____

5. GENDER

☐ Male ☐ Female

6. AGE

☐ Under 25

☐ Between 25 and 34

☐ Between 35 and 44

☐ Between 45 and 54

☐ Between 55 and 64

☐ Over 65

7. POSITION IN COMMUNITY

☐ Kaya elder

☐ Village elder

☐ Local chief

☐ Youth

☐ Women's leader

☐ Other (specify below)



QUESTIONS FOR RESPONDENT'S REMARKS

1. What are your customary laws and practices that are of relevance to traditional knowledge and biocultural resource (land, genetic resource, culture)?
2. What are the strengths and weaknesses of the customary laws and practices with regard to protection of biocultural heritage?
3. In these customary laws and practices are there any incentives for innovation?
4. If there are any, how are these incentives awarded?
5. Within your community, who are the custodians of this knowledge?
6. Is custodianship of knowledge dependent on social status and/or gender, and/or age?
7. How is knowledge shared and transmitted among the members of your community?
8. Is this knowledge shared freely or are there social and/or gender and/or age limitations?
9. Who decides who the recipient of the knowledge is, and what knowledge is to be shared, and how is this decision taken?
10. Are there any customary sanctions/penalties that are imposed when the decision on who, how and when to share knowledge is not adhered to?
11. What limitations is your community facing with regard to the promotion of your customary practices?
12. Are there any efforts that your community has made to promote your customary practices?
13. Are you aware of any efforts made to document your customary laws, practices and associated knowledge?
14. Are there instances when your community has received requests from third parties to access you knowledge? (Third parties in this instance include clans, tribes, scientists, companies.)
15. If so, how have you gone about granting such access? Are there different standards applied in granting such access?
16. Are there any benefits that have accrued thus far to your community in return for third parties accessing your knowledge?
17. If so, have these benefits been of monetary or non-monetary nature?
18. In your view do you see the knowledge you hold as a potential economic tool for your community?
19. Once access of knowledge to third parties is granted, how do you go about ensuring that the access conditions are met?
20. If access conditions are breached, how do you go about resolving and enforcing this?
21. Who owns the land from which you derive your knowledge?
22. What is the tenure for such land?
23. Does your community lease/share land (and other resources) to/with other communities?
24. If so, what conditions do you impose upon the communities you lease/share land (and other resources) to/with?
25. Does your community access knowledge from other communities?
26. If so, what conditions have been imposed on you to access such knowledge?
27. Have your customary practices and norms evolved over time?
28. If so, what have been the factors leading to this evolution?

This case study has been conducted as part of the IIED project “Protecting Community Rights over Traditional Knowledge: Implications of customary laws and practices”. The project explored the customary laws and practices of indigenous and local communities to identify appropriate mechanisms for protecting their resource rights and knowledge systems. It involved participatory research at community level to strengthen local capacity and informed policies at local, national and international levels.

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