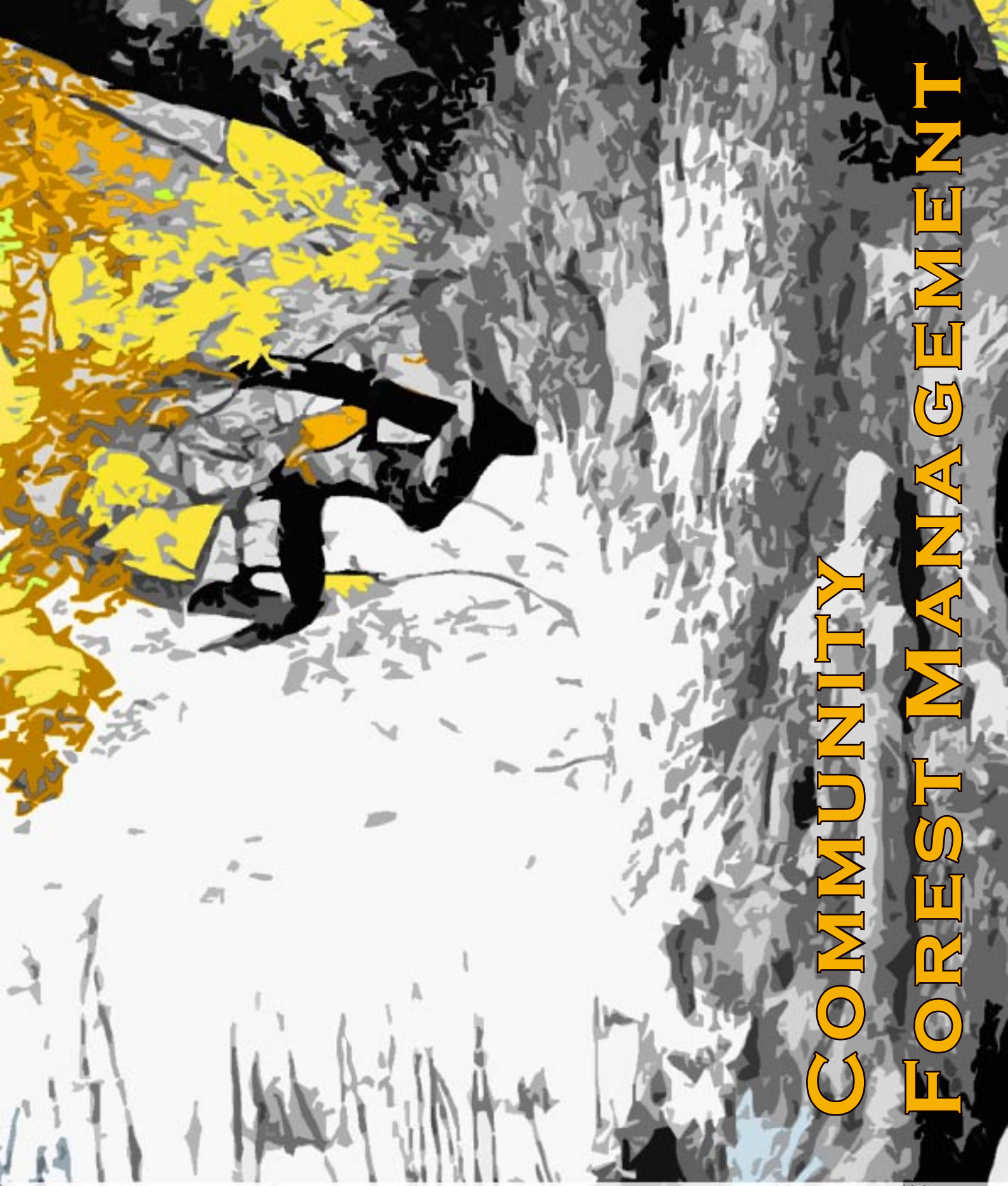

# Community Forest Management

## A framework of analysis for the long-term self-sufficiency of CFM projects


*Author: Wilfred Schilt*
*VU Supervisor: Pieter van Beukering*


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WWF

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# Contents

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# Executive Summary

In spite of the ecological and economic value of forests, deforestation has been a reality for centuries. A relatively new attempt to halt deforestation, while at the same time alleviate poverty of the rural poor in the developing world, is community forest management (CFM). CFM projects invite forest adjacent communities to participate in the protection and conservation of forests, while allowing them to extract and trade forest resources. This study assesses the factors associated with long-term success of CFM projects. These factors fit in the categories of financial viability, limitation of natural resource use, and local acceptance and execution. WWF is currently facilitating a CFM project in the Naivasha basin, Kenya. The suggested factors are used to assess the long-term success of this project. The factors and results for the Naivasha basin are described in Table 1.

*Table 1 Factors associated with self-sufficiency, and the rating for the Naivasha basin project (Green, orange and red represent promising, needs improvement and problematic respectively)*

| ***Factor*** | ***Description*** | |
|---|---|---|
| Timber | User groups can benefit from timber extraction from the forest. | |
| NTFPs | User groups can benefit from the extraction of various NTFPs. | |
| Value-adding | User groups can increase the value of forest produce. | |
| Carbon | Communities have the capacity to benefit from the trade in carbon emission reduction credits. | |
| Scaling up | Community forest enterprises have the capability to scale up and diversify their activities. | |
| Financial support system | User groups can receive grant or loans from outside agencies | |
| Tenure security | User groups have good and stable tenure rights. | |
| Effective enforcement | The tenure rights of user groups are enforced effectively. Graduated sanctions are in place. | |
| Awareness | Community members are aware of the link between the environment and their behaviour. Discount rate is sufficiently low. | |
| Monitoring system | A monitoring and evaluation system is in place. | |
| Incentives | User groups have good incentives to start CFM projects. These incentives are realistic and not overrated. | |
| Conflict resolution system | A conflict resolution system accepted by all is in place. | |

| ***Factor*** | ***Description*** | |
|---|---|---|
| Shared common interest | Community members have a shared common interest in forest protection and management. | |
| Clearly defined boundaries | Spatial, regulatory and legal boundaries must be clear. | |
| Powerful grassroots organization | Local forest associations receive (partial) power over the forest from the higher authorities. | |
| Multi-level governance | Agencies on different levels of governance are appointed, where the local agencies can influence decisions higher up. | |
| Equal participation | All people in the community have the chance to participate in and benefit from CFM, to avoid domination of local elites | |

This study leads to several recommendations to improve the chances of self-sufficiency of CFM projects in the Naivasha catchment:

1. Persuade the Kenya Forest Service to install a benefit sharing mechanism for the timber revenues it obtains.
2. Improve the marketing capacity of CFA enterprises through workshops with the results of a marketing study currently underway as a backbone.
3. Explore biofuel as a possible alternative livelihoods.
4. Organize exchange visits with successful neighbouring groups for the project communities to learn and possibly cooperate.
5. Assess the success of the proposal writing workshop that was given. If it is not satisfactory, a follow-up should be provided for the workshop participants.
6. Persuade the relevant authorities to invest more in the fund especially set up for CFAs to benefit from.
7. Teach the local planning teams how to write a forest management plan by themselves, possibly with help of the foresters.
8. Create a comprehensive socio-economic monitoring scheme is, together with the project participants.
9. Make better information about the management power and possible benefits of CFAs available for project participants.
10. Form a catchment-wide conflict resolution committee, with representatives of all stakeholders involved in natural resource management.
11. Ensure representation of the Naivasha CFAs in the advisory committee to FCC Nyeri.
12. Put pressure on the local planning teams to ensure and equitable distribution of benefits and power throughout the communities.

# Abbreviations

| | |
|---|---|
| AL | Alternative Livelihood |
| CAAC | Catchment Area Advisory Committee |
| CBNRM | Community Based Natural Resource Management |
| CCBA | Climate Change and Biodiversity Alliance |
| CFA | Community Forest Association |
| CFM | Community Forest Management |
| FAN | Forest Action Network |
| FCC | Forest Conservation Committee |
| KFS | Kenya Forest Service |
| KWS | Kenya Wildlife Service |
| LPT | Local Planning Team |
| NTFP | Non Timber Forest Product |
| REDD | Reductions of Emissions from Deforestation and forest Degradation |
| WRMA | Water Resource Management Authority |
| WRUA | Water Resource Users Association |
| WWF | World Wide Fund for nature |
| WWF-EARPO | World Wide Fund for nature, East African Regional Programme Office |
| WWF-NL | World Wide Fund for nature, Netherlands office |

# 1. Introduction

Forests are a vital part of natural processes around the world. As one of the most important carbon sinks, they play a key role in the mitigation of climate change (Malhi et al., 2002). Many aspects of stability, functioning and sustainability of ecosystems depend on species diversity (Loreau et al., 2001), and forests have the highest biodiversity and endemism of any terrestrial ecosystem in the world (Groombridge & Jenkins, 2002). This diversity also encompasses a gene-pool that offers the possibility of new medicines, the improvement of existing, and the introduction of new crops (Meyers, 1997).

In the developing world, forests play an important role in the every day livelihood needs of forest adjacent communities. They provide products such as fuelwood, charcoal, fodder, honey, herbal medicine (WWF-Naivasha, 2009), timber, transmission poles and paper (KFS, 2007a), while at the same serving as water reservoirs, retaining air moisture, regulating river flows, preventing flooding, facilitating ground water recharge, reducing sediment loads in river waters, regulating rainfall patterns and serving as important wildlife habitats (NEMA, 2004).

In spite of the significance of forests, deforestation has been a reality for centuries. Over the course of 8,000 years, the worlds forests have reduced by almost half from 62 million km$^2$ to 33 million km$^2$ (Bryant, Nielsen & Tangley, 1997; Sunderlin et al., 2005). Activities such as timber harvesting, fuelwood harvesting and the conversion of forests into agriculture have led to this demise (Kahn, 2005). Population growth in the developing world has aggravated these activities, increasing the pressure on forests even more. The rural poor depend disproportionally on forest resources (Sunderlin et al., 2005), making poverty one of the determining factors of deforestation in the developing world.

Alleviating poverty could therefore be one of the main ways to conserve forests. At the same time, forest conservation could also be one of the main ways to alleviate poverty. The forest produces many resources and offers many services and a sustainable management of these, by the forest adjacent community members, can lead to both forest conservation and poverty alleviation. Community forest management (CFM), a process whereby specific

community forest users protect and manage state forests in some form of partnership with the government (Hobley, 1996), can provide a sustainable alternative livelihood (AL) for the rural poor.

NGOs and governments around the world are facilitating the establishment of CFM in rural communities. In CFM projects, the capacity of the rural poor to perform and benefit from forest management is build. When the facilitator withdraws from the project area, the project needs to be self-sufficient in order to be successful. Different projects have gained different rates of success, but a general explanation of the reasons for this is lacking.

This report consists of three parts, in which different questions and issues are being handled. First, it proposes a general classification of factors with which the long-term success of CFM projects can be explained and predicted. Second, the proposed framework is employed to assess the self-sufficiency of a CFM project in the Lake Naivasha catchment, Kenya. In this region, the World Wide Fund for nature (WWF) is currently facilitating the emergence of CFM by building capacities of community members and community organizations, and influencing policies at local, regional and national level. By using the identified factors for self-sufficiency, recommendations are given for the improved chances of long-term success. Third, it proposes a monitoring and evaluation scheme for this project, as one of the factors identified for self-sufficiency is the existence of such a scheme.

# 2. Background

This chapter provides background information necessary for an in depth analysis of the self-sufficiency of CFM projects and the situation in the Lake Naivasha catchment. Characteristics of the Naivasha catchment and the Linking Futures project are described. Also, an introduction of CFM in Kenya, the Naivasha catchment and world-wide are given.

## 2.1 Lake Naivasha

Lake Naivasha lies in the Kenyan Rift Valley, approximately 100 km north of the capital Nairobi (Figure 1). It is an area rich in both resources and biodiversity. It boasts two national parks (Hell's Gate and Aberdares), several private wildlife sanctuaries, forests and the lake which is the only fresh water lake in the Rift Valley and was designated as the second Ramsar site in Kenya. The catchment area represents diverse ecological zones that support unique habitats and biological resources that contribute to the regions spectacular socio-economic development. The favourable climate, proximity to Nairobi and fresh water lake are features that have instigated large scale flower farming on the lake shore (Becht et al, 2006). The same factors make the area very appealing for tourists; both


*Figure 1 The location of the lake Naivasha catchment in Kenya*

Nairobi residents and visitors from abroad frequently visit the area. Other activities include livestock husbandry, subsistence farming, fishing and fish trade.

The ecological features upon which the economic activities in the area are based are interlinked, rendering the landscape fragile and susceptible to degradation. Over the last three decades, the basin has experienced a huge growth in terms of economic activities, resulting in a large influx of people. Coupled with an uncontrolled growth of population this has resulted in an increased use of water and land, and an increase of pollution (Kut & Agevi, 2007). Consequently this has led to degradation of the environmental assets in the area. Increasing population needs more rather than less of the natural resources, creating a vicious circle where the environment degrades at an increasing rate. For example, the rural inhabitants need farmland for their subsistence, and as more people need food, more forests are being destroyed. This results in less rain and less water buffer capacity, and consequently leads to drying out of the rivers and the lake. As a result, the farmland becomes less productive, which increases the demand for land and water even more.

The rural poor of the Naivasha basin have often not been included in land use management and planning, although their livelihoods are fully dependant on the natural resources in the area. Prakash (1997) argues that such a top-down management of natural resources could be just as detrimental to the environment as poverty itself. Rather, governments should manage these resources together with the communities dependant on them. Currently, the resources in the basin are not equitably distributed, favouring the government and a few rich interest groups at the expense of the bulk of the population (WWF, 2006a). A co-management scheme including the rural poor could enhance communities' position in this respect.

A unique feature of the Naivasha basin is the geothermal activity. Some of the water in the underground aquifer is in close proximity to the earth's core. This provides for heating of the water, which turns into steam and finds its way to the surface. The power of this steam is used for the generation of electricity, making the area the only sustainable geothermal station in the country. These steam jets have been identified as being linked to the underground aquifers recharged by the lake and rainfall in the catchment forests. This signifies the need to conserve the entire basin and its functions if one wants to sustain the power supply in the long term (WWF, 2006a).

## 2.2 The Linking Futures programme

It is against this backdrop that the World Wide Fund for Nature Netherlands (WWF-NL) has started its programme 'Linking Futures'. This programme is operational from 2007 till 2011, not only in the Naivasha area but also in Campo-Ma'an, Cameroon, and Lower Zambezi, Mozambique. The goals of this programme start from the premise that local problems can only be tackled by actions on different levels of governance; local (micro), regional (meso) and (inter)national (macro) (the 3M approach). Following this line of thinking, and the hypothesis that poverty and environmental degradation have a causal relationship, three main goals have been formulated:

- **Poverty reduction:**

  To enhance the livelihoods of the rural poor -local communities and indigenous peoples- and to involve the rural poor in the planning and implementation of management regimes in order to ensure a sound and equitable use of biodiversity and ecosystems.

- **Building civil society:**

  To build a network of actors and establish partnerships with other organizations, governments, business and local communities to facilitate a sustainable pro-poor development and protect the integrity of ecosystems.

- **Influencing policies:**

  To establish linkages between local poverty-environment problems and national development policy issues at meso- and macro-levels in order to influence the drivers of change and the policy makers/leaders, who can influence those change processes (WWF, 2006b).

In the Lake Naivasha catchment, WWF's activities to achieve these goals centre mainly around building capacity of the rural poor on different subjects (WWF, 2006c). Reducing poverty is being addressed by increasing the communities' ability to produce and market agricultural and forest products. Also, the project investigates possible alternative livelihood options, like ecotourism and new alternative agricultural products. The capacity of communities and extension officers to engage in sustainable land use practices is being built. These

activities are carried out with the underlying aim to increase production, while limiting the potential degradation of the environment.

The civil society is built primarily through addressing community groups active in co-management of resources, the Water Resource Users Associations (WRUAs) and Community Forest Associations (CFAs). Kenyan law recently established the mandate for such groups, and they are a prime channel through which communities can influence decisions concerning their resources. By improving certain skills of association members (e.g. discussion, management, organisation skills), and providing them with tools (being informed on recent developments, awareness on law and regulations, connection to (inter)national research institutes), the capacity of communities to influence decisions is increased and linkages between the local, regional and (inter)national level is created.

## 2.3 Community forest management

Over the past decades, community participation in natural resource management (CBNRM) has had a profound impact on the organization of environmental resource management (Kellert et al, 2000). In an attempt to depart from top-down, large-scale, capital-intensive conservation and development projects, community participation was encouraged as the solution to both development and conservation issues. CBNRM programmes are based on the premise that communities have a larger interest in the sustainable use of natural resources than the national authorities or large corporations. Also, that they are more knowledgeable on the details of local ecological processes and procedures. Therefore, they would be better able to manage the natural resources effectively (Brosius et al, 1998).

Forests offer many natural resources and are thus a prime candidate for CBNRM. This is termed Community Forest Management, and has been defined as a process whereby specific community forest users protect and manage state forests in some form of partnership with the government (Hobley, 1996). This rather broad definitions leaves room for CFM to take on many forms. However, there are certain aspects that almost all CFM projects have in common. When participating in a project, forest adjacent communities generally set up a forest user group. This group undertakes activities like planting trees, extracting and selling

various resources, and co-management of the forest. This happens with various degrees of participation of the whole community, and various degrees of power in the grassroots organization. Values such as equity, subsidiarity, conservation, livelihood improvement and poverty alleviation are usually part of CFM projects.

Governments and non-governmental organizations (NGOs) in the developing world have discovered the forest as an AL-provider; new forest legislation and CFM projects have mushroomed everywhere. CFM has especially taken off in Asia, with occurrences in for example Nepal (Brown et al, 2002; Mehta & Kellert, 1998), Vietnam, Cambodia, Laos (Sunderlin, 2006) and India (Agrawal & Chhate, 2006). It has also found its way to Africa, and is being practiced in for example Cameroon (Brown et al, 2002; Scheele & Tsaravopoulos, 2008), Tanzania (Blomley & Ramadhani, 2005) and, since the Forests Act 2005, also in Kenya.

## 2.4 CFM in Kenya

The first official Kenyan forest policy was published in 1957, with the colonial government still in power. In 1968, after the independence, this policy was revised with a few modifications. It focused on catchment management and timber production, with a strong governmental control of the sector (Ludeki et al, 2006; Ruotsalainen, 2004). Following this policy, management of forests was done through a command-and-control system with minimal participation of stakeholders (KFS, 2007b). Implementation has been increasingly skewed, because the law remained the same while the context changed. Population has increased tremendously, the timber market has globalized while the management capacity of the Kenyan government was lagging behind (Ludeki et al, 2006).

There has been increasing concern about the state of the Kenyan forests; forest cover is a meagre 1.4 million ha, and at 1.7% of the total land area this compares unfavourably with the internationally recommended 10% minimum (KFS, 2007a; Ludeki et al, 2006). In an attempt to turn the situation around, the Kenyan government has enacted the Forests Act (2005). This new law provides for community participation and co-management, and thus for the establishment of CFM. The act has gazetted the Kenya Forest Service (KFS), a

parastatal implementing agency modelled after the Kenya Wildlife Service (KWS), which has replaced the Forest Department. For the KFS, being a parastatal agency means that they must provide for their own funds, for example by charging user fees to forest users or via the money paid for timber concessions. The KFS is led by the Forest Board, a group of 16 people consisting of civil servants, scientists and community representatives. It serves as the prime forest agency at the national level.

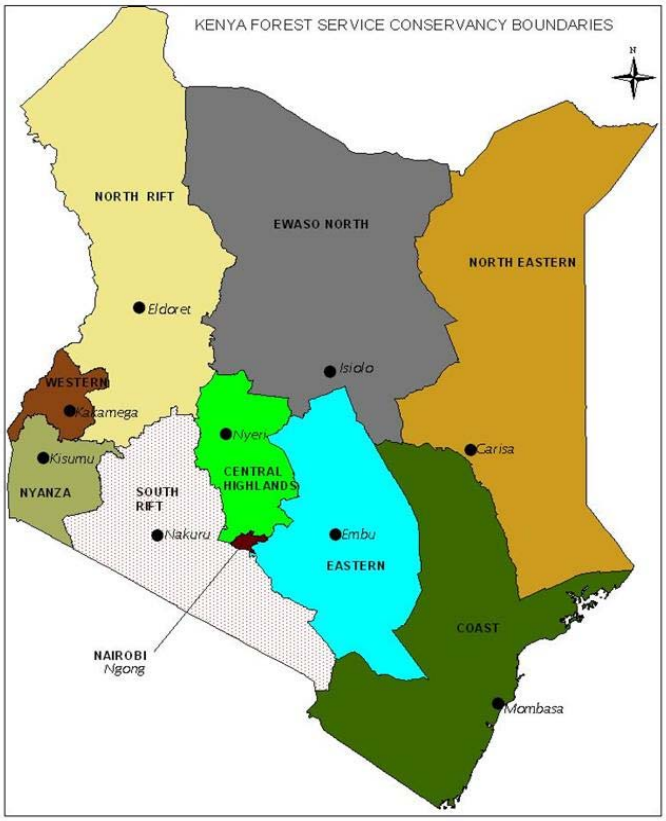


*Figure 2 Map of FCCs in Kenya*

On the regional level, the KFS is represented by the Forest Conservation Committees (FCCs), 10 in total (Figure 2). These committees consist of government and community representatives, and are responsible for the direct guidance and supervision of the participating communities by providing extension services and approving management plans. Forest adjacent communities are encouraged to form Community Forest Associations (CFAs), which are grassroots organizations for the management of forests. By forming a CFA and writing an approved management plan, the community gets a legal mandate for co-management of the forest it is adjacent to.

The KFS is aspiring to have 251 CFAs in Kenya; one for each forest station. A daunting task, because in all those forest areas, the communities must be sensitized, the capacities of the community members must be built and a management plan must be created and approved. Being a new agency, the KFS is not capable of doing this itself, because their money making activities still need to reach their full potential. Several NGOs participate in the implementation of the Forests Act on grassroots level.

These organizations are now primarily active in the creation of CFAs. Those community groups must first be formed by sensitizing the community to become active in forest management. Then, a management plan must be created, which requires expert knowledge as it must include details about the physical features of the forest, livelihoods of forest dwelling households and a detailed institutional analysis. All this must be presented in a management plan written in English in order to be approved. As communities generally do not have forest experts, sociologists and political scientists in their midst, NGOs must provide this knowledge.

CFAs have several rights and responsibilities, laid down by the Forests Act (2005). The responsibilities of CFAs mostly concern the protection of the forest, like the protection of sacred groves and trees, sustainable use of forest resources and help in fire fighting. In return, they get certain user rights, like the collection of medicinal herbs and the harvesting of honey, fuelwood and building materials. They also get the chance to initiate community forest-based enterprises.

This new legal situation in the forest sector of Kenya offers a potentially very successful new alternative livelihood. People can start forest based businesses to alleviate poverty, civil society is being built by establishing and empowering CFAs, and these associations can be helped with ways to influence policy. WWF is trying to achieve these goals in the Lake Naivasha catchment, by facilitating the establishment of CFAs in the region. In the next section, a detailed description of their activities so far is given.

## 2.5 CFM in the Naivasha catchment

The forests in the Naivasha catchment are of vital importance to both the ecological processes as the livelihoods of the people. The Aberdare mountain range is one of the five main 'water towers' of Kenya, and its forests are the source of the Malewa river, the main surface inlet for Lake Naivasha. Also, the forests boast an impressive number of threatened mammal, bird and plant species (Lambrechts et al, 2003). The inhabitants of the catchment rely primarily on the lake, the river and its tributaries as a water source. They also need the forest

for a number of subsistence resources. These include charcoal, firewood, timber, honey, medicinal plants and livestock grazing.

Even though the forests in the Naivasha catchment are essential for the economy, nature and livelihoods, deforestation remains a grave threat. Population growth has led to an increase in demand for agricultural land (KFS, 2007a), which in turn leads to illegal cultivation (Lambrechts et al, 2003) (Figure 3). Livestock encroachment has degraded the wildlife habitat (NEMA, 2004) and illegal logging and charcoal burning has furthered the depletion of forest resources. CFM can be used to protect the forests and improve the livelihoods. With the help of WWF, two CFAs are being created in Lake Naivasha's upper catchment, being Geta and Mutarakwa. Geta CFA will administer Kipipiri forest and part of the Aberdare forest, and Mutarakwa will administer another part of the Aberdare forest (Figure 4).

*Figure 3 Hill in Naivasha's upper catchment, deforested for the purpose of agriculture*

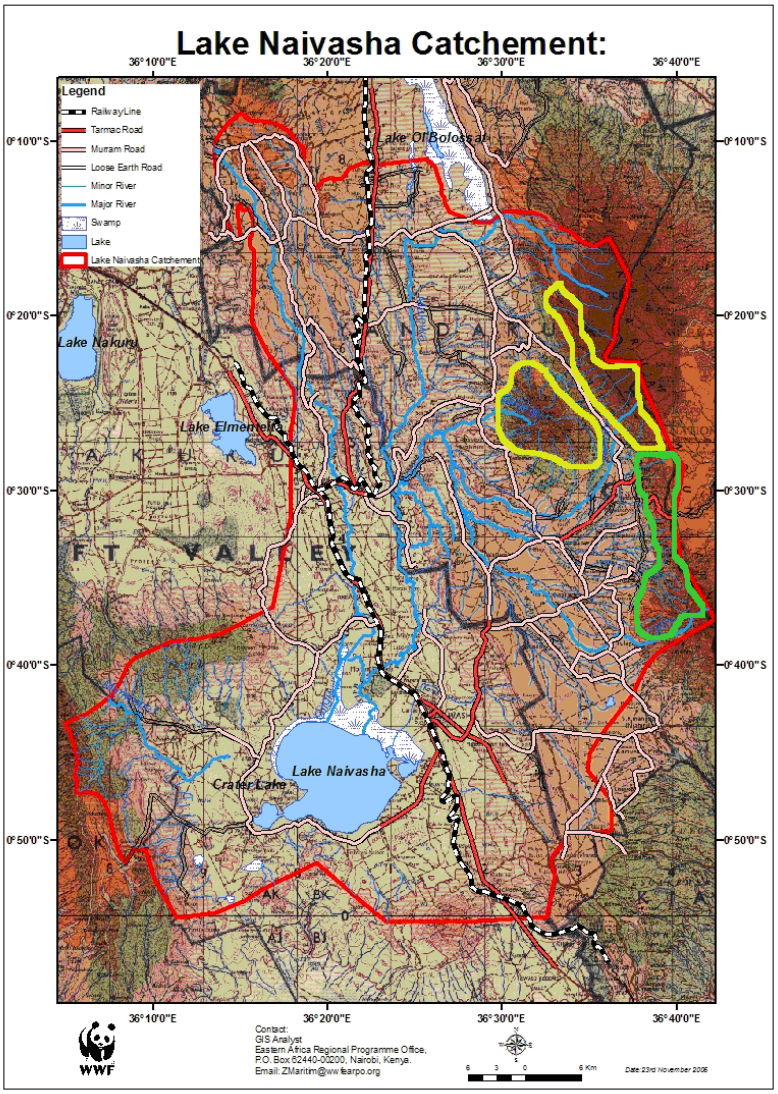


*Figure 4 The locations of the forests of Geta CFA (yellow) and Mutarakwa CFA (green)*

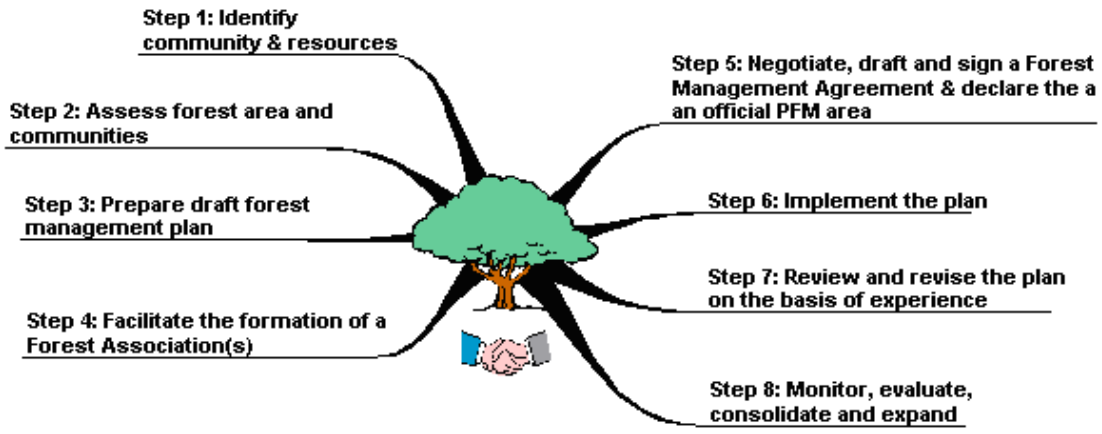


*Figure 5 Overview of the steps involved in CFM in Kenya (Wambugu, 2009)*

The establishment of CFAs all over Kenya follows participatory forest management guidelines laid out by KFS (2007b). These guidelines provide 8 steps (Figure 5) in which CFM can be a success. In the Naivasha area these steps have been followed also. Step 1, identify community and resources, consists of making the initial contact with the communities, identify the relevant stakeholders and creating awareness about CFM. Step 2, assess forest area and communities, involves conducting a socio-economic and ecological survey, to go into more depth about the intricacies of the area. Step 3, prepare a draft management plan, entails a negotiating process with a local planning team to create a 5 year forest management plan that balances local needs, conservation measures and national priorities. In the Naivasha basin, step 1, 2 and 3 are currently being facilitated by WWF.

Currently, WWF is working together with a consultant to start the process of writing a draft management plan. 'Baraza's' (information meetings) are held in different communities in the area's of Geta and Mutarakwa CFAs to sensitize the community on the CFM process, steps to be undertaken and their roles and responsibilities. An additional goal of these meetings was to form Local Planning Teams (LPTs) to participate in the development of a draft forest management plan (WWF-Lake Naivasha, 2009). During the meetings, the community members were asked to name forest resources and identify the five most important. In every meeting (nine in total) water, firewood and grazing were deemed most important. Other priority resources include honey, timber, cultivation and ecotourism. For each of the five most important resources, a representative was elected to take seat in the LPT.

The next step in the CFM process will be the training of the LPTs on conducting different surveys (e.g. socio-economic, ecological) and the writing of a management plan. The LPTs will then create a draft management plan, which will be presented to the community. The whole community must then be sensitized to participate in the CFAs, and they will discuss and amend the draft management plan and sent the final version to the KFS for approval. Once approved, the CFA will be able to start their activities and co-management of the forest.

The CFA can grow into a community-wide organization with the capacity to influence regional policies, manage the forest, initiate forest-based industries, and enforce the conservation regulations while equitably distributing the benefits through the whole community. This

ideal of participatory natural resource management is a worthy goal to strive for. However, there are certain steps that need to be taken for the CFAs to become fully self-sufficient and successful.

## 2.6 Research approach

This research is composed of three distinct parts. It presents a way to classify, monitor and improve the self-sufficiency community forest management projects in the Lake Naivasha area, while these results can be applied to a more general setting. Classification of the self-sufficiency of CFM projects is done by synthesizing scientific research on the subjects of AL and CFM and identifying key factors for long-term success. It proposes a categorization of these factors in three categories; financial viability, limitation of natural resource use and local acceptance and execution.

For a period of six weeks, several sites of WWF's Linking Futures project, in the Lake Naivasha basin, have been visited. During these visits, interviews with key stakeholders and focus groups were conducted (Table 2), following the self-sufficiency factors, to determine possible problems with the self-sufficiency of these projects upon withdrawal of WWF from the project area. For those self-sufficiency factors not yet accomplished, this report suggests solutions, both from scientific literature and from experiences in the field. Unfortunately, time constraints have not allowed a more quantitative analysis of the situation in the Naivasha basin, but the qualitative data presented here can give suggestions for where a more quantitative approach may be needed.

During the stay in Kenya, several interviews about the monitoring and evaluation of AL projects were also carried out. These interviews and experiences in the field are supplemented with an analysis of the large existing body of research on monitoring and evaluation. This information is used to come up with a practical, feasible way of monitoring the success and self-sufficiency of WWFs' Linking Futures project.

| | **Community Forest Management** | **Monitoring and Evaluation** |
|---|---|---|
| NGO staff | 12 | 2 |
| Rural residents | 18 | 3 |
| Government personnel | 10 | 1 |
| ***Total*** | ***40*** | ***6*** |

*Table 2 Number of people interviewed*

# 3. Self-sufficiency of community forest management projects

Because of the worldwide application of CFM, there is an extensive library of scientific literature on this subject. From this, the most important factors associated with long-term success or failure can be drawn. In this section, the self-sufficiency of CFM projects is explored with information from a large amount of case studies. Factors important for self-sufficiency are identified and placed in three broad categories (Table 3).

## 3.1 Financial viability

There are numerous ways for communities to reap financial benefits from the forests surrounding them, and thus CFM can make a distinct contribution to the goal of alleviating poverty. Financial benefits are also a big part of self-sufficiency; when people benefit financially from CFM, they have an incentive to keep the project going. Also, money will be available for the necessary equipment and for scaling up the project.

A large number of households generates a part of its income by selling forest products, when farm production is not sufficient to provide food security all year round (Warner, 2007; Shackleton & Shackleton, 2004). People can for example sell the fuelwood, wild honey or medicinal herbs they collect in the forest. However, there are certain resources the forest has to offer that can be used for more than just subsistence using or selling.

The global *timber* market is a multi-million dollar industry, while the demand for timber in the western world in rising ever further (in Western Europe alone, demand in 2000 was 525 million tonnes, and is expected to rise to 770 million tonnes in 2020 (Lawson & Hemery, 2008)). As one of the most valuable products extractable from the forest, timber can make a significant contribution to the financial viability of CFM projects. However, due to its high value, the poor are often excluded from benefiting from its value (Sunderlin *et al.*, 2005). In fact, 'the strongest constraint by far on poverty alleviation through community forestry has been the deeply entrenched legacy of government-led and large enterprise-led forest management' (Sunderlin, 2006). Restrictions on harvesting and trading of timber by the rural poor greatly reduce the incentive for people to engage in CFM (Warner, 2000). Even if the

rural poor are not excluded from the timber harvest, they still have capacity gaps (in knowledge and equipment) to fill before commencing this capital-intensive activity (Fisher *et al.*, 2007).

Many *non-timber forest products* (NTFPs) can be gathered from or produced in the forest and sold at the local, domestic and international markets. In comparison to timber, NTFPs have a relatively low value (Sunderlin, 2006), but they can still provide for an alternative livelihood. NTFPs that can be used for a forest based enterprise include honey, silk and fruit. These products can be produced with relatively little equipment or expertise and the products can be sold at different markets. However, small forest enterprises growing into financially viable businesses require an enabling environment, financial services (credit) when starting up, and technical and marketing capacity building (Donovan et al. 2006).

A relatively new NTFP the forest can provide is biofuel. Biofuels are raw oils extracted from certain plant and tree species, which can be used to produce electricity, pump up groundwater, run buses and cars (D'Silva, 2007). Biofuel trees can simultaneously be used for watershed management, carbon capture and reforestation, killing multiple birds with one stone. Because fossil fuels are decreasing in quantity, biofuel may provide an excellent business opportunity for forest groups. Community forestry is usually done in developing countries, where electricity is often not reliable or even non-existent, so a niche-market for this product exists. Disadvantages of biofuel production are the technical knowledge and equipment necessary.

Related to the capacity building of new enterprises is the concept of *value-adding*. As products move from raw material to end-product, value is added on every step of the value chain (Porter, 1985). This can be done by e.g. operations (changing of raw material), logistics (distribution of final product) or marketing. By analysing the value system of a product, insight on where and how value is added to the product may be achieved. For the rural poor of developing countries, this type of analysis may be of relevance. Usually, they are at the beginning of the extended value chain. By incorporating more value-adding activities further up the extended value chain into their operations, they can increase their revenues and thus decrease poverty. All other primary activities need to be incorporated in such a plan. For example, rural farmers often sell their product in bulk, while the buyer of their product simply

puts it in smaller packages and sells it for a much higher price. By distributing these smaller packages themselves, farmers can increase their revenue. However, simply making smaller packs does not work, as the outbound logistics will also change, and a new market will have to be found to sell.

All trees planted by CFM associations use *carbon* as a building block. Thus, by growing, trees mitigate the carbon emissions that currently threaten the earth's climate. Therefore, under the Clean Development Mechanism (Kyoto protocol), developed countries are allowed to offset their carbon emissions by financing afforestation and reforestation projects in developing countries. Projects initiated under the CDM can provide communities with additional income, through the sales of carbon credits, and additional livelihood benefits through the newly planted forest (Smith & Scherr, 2002).

However, the CDM has not lived up to its promise of mitigating carbon emissions while simultaneously stimulating sustainable development. Sutter & Parreño (2007) state that not a single project under the CDM has delivered on both goals. Paulsson (2009) has a less drastic conclusion, but does draw attention to the fact that the market mechanism in the CDM, with carbon emission reductions being rewarded but not sustainable development, results in most projects being focused on the former and not the latter. Moreover, due to the complex bureaucratic procedures involved, the CDM market increasingly favours large scale projects, effectively bypassing community based initiatives (Lloyd & Subbarao, 2009).

In 2012, the Kyoto protocol will be replaced with a new set of regulations, to be negotiated in Copenhagen, December 2009. In this new situation, Reductions of emissions from deforestation and forest degradation (REDD) is possibly a new way of gaining carbon credits (Michealowa & Dutschke, 2009). REDD can be a valuable contribution to the financial viability of CFM projects. Also, carbon credit trading schemes may become more accessible for community based organizations, by simplifying bureaucratic procedures.

Carbon is not only being traded under the authority of the CDM. A carbon market exists for companies, individuals and governments willing to offset their carbon emissions voluntarily (Taiyab, 2006). Different standards for emission credits exist, such as Climate Change

and Biodiversity Alliance (CCBA) and Plan Vivo (Eliasch, 2008). Apart from carbon emission reductions, CCBA is more aimed at biodiversity conservation, while Plan Vivo has poverty reduction as a joined objective. An advantage of the voluntary carbon market over CDM regulated projects is the relative lack of complex bureaucratic procedures (Taiyab, 2006), making it a more feasible option for community based initiatives.

Molnar *et al.*, (2007) have found that community forest enterprises can be very profitable, as examples from case studies had returns of 10-50% from their activities. However, this consists of more mature enterprises, which have invested in 'diversification of economic activities, making greater use of their forest resource, managing risk and creating new sources of employment and community skills.' (Molnar *et al.*, 2007, p. 7). This shows the importance of forest communities to scale up and diversify their forest based activities. Simula (2008) mentions *scaling up* and reinvestment as an 'economic prerequisite' for the financial self-sufficiency of forest enterprises. By increasing productivity, transaction costs can be kept at competitive levels. By investing, the latest feasible technology can be acquired. By establishing advocacy and lobbying organizations, cooperatives and associations, the scale of the community project can be increased, thus enhancing their bargaining power and competitive edge (Simula, 2008). Important for the success and scaling up of any forest enterprise is the connection to markets where products may be traded (Scheele & Tsaravopoulos, 2008). Be it timber, NTFPs of carbon, without a stage on which to sell, all other financial viability factors described above seem redundant.

A final important aspect of financial viability for the long-term success of CFM projects is the existence of a *financial support system* from local and/or outside agencies (Pagdee et al. 2006). Governments may create a fund from which forest user groups can receive a grant or loan to initiate or scale up projects. Without a capital seed or something to fall back on in difficult times, CFM projects might not start at all, or deteriorate soon.

## 3.2 Limitation of natural resource use

The limitation of the use of forest resources is vital for the long-term success of any CFM project. When the resources are over-used, the forest will degrade, decline in size and produce less. As all activities in CFM are dependant on the forest, it is naturally a prerequisite

that this forest is alive and well. The limitation of natural resource use can be achieved by addressing certain factors.

An issue that is discussed in many scientific articles about CFM is *tenure security*. Land tenure may be defined as 'the terms and conditions under which land is held, used and transacted' (Adams, 2001). People can have certain rights to an area, like the right to occupy (e.g. as a homestead or as farmland), to transact (e.g. give or lease it to someone else), to exclude others from using the land, and to enforce legal and administrative provisions to protect the rights holder (Adams, 1999). Community based forest organizations usually have some or all of these rights over the forest area, depending on the legal framework in which they operate. Obuwah et al. (2001) identify economic compensation (the extent to which tenure holders can retain benefits from the forest), and the extent of rights a tenure holder has according to the tenure agreement as the most important aspects of tenure security in CFM projects.

Where forests are central for the livelihoods of people, they should be the main stakeholders in forest management and this status needs to be reflected in tenure rights (Warner, 2000). In a meta-analysis of 69 CFM case studies, Pagdee *et al.* (2006) identify tenure security and well-defined property rights as some of the key factors for the success of projects. Sunderlin *et al.* (2005) add that the absence of real tenure rights is one of the main reasons why community forestry has performed poorly in providing livelihood benefits. In Nepal, forest user groups can decide themselves how much timber should be harvested in their part of the forest. This has greatly helped the regeneration and improvement of the forest area (Kanel, 2005). To boost forest income, exclusive access rights must be improved and secured (Sunderlin, 2006).

Exclusive use of a forest area is usually part of a tenure agreement between a forest association and the government. However, this right must be effectively enforced to be a meaningful factor for success. Lack of enforcement can lead to loss of income from forest produce, loss of forest and finally to loss of access to the forest resources (Kaimowitz, 2003). Therefore, *effective enforcement* is an important factor of success (Pagdee et al., 2006; Kanel, 2005). Enforcement can be done by the community members themselves, or by external (government) personnel. Government enforcement may lead to conflicts with the surrounding

communities (Mehta & Kellert, 1998), as they 'generally enforce forestry and protected area legislation more vigorously and with less respect for due process and human rights when poor people are involved' (Kaimowitz, 2003). Besides these negative aspects, developing countries generally lack the capacity to enforce the forest regulations effectively.

Enforcement by community members seems a better policy option, and may indeed be the only viable option in many developing countries. When local communities are engaged in CFM, and benefiting from the forest resources, they will have a good incentive to enforce its conservation and protection (Kaimowitz, 2003). Ostrom (1999) labels 'graduated sanctions' (depending on the seriousness and context of the offence) by forest users to those who violate the regulations a prime factor for the long-term success of any community forest enterprise.

Linked closely with community enforcement is the need for *awareness* in CFM project participants. Knowledge of the link between the behaviour of the community and the state of the forest, climate and nature will help decrease destructive behaviour (Kellert *et al.*, 2000). UNEP deems it so important it uses public awareness of the environment as one of their indicators for sustainable development (Harger & Meyer, 1996). It can also instil the 'awareness of collective responsibility within the community' (Buchy & Hoverman, 2000). This collective responsibility will in turn improve the enforcement capabilities of the forest-adjacent communities, as more people become aware of the need to enforce while less people will infringe the regulations. However, the poorer people are, the higher their discount rate is. Poor people cannot wait for trees to mature if there is nothing to eat (Simula, 2008), leaving their awareness less important.. A sufficiently low discount rate is identified as a factor for self-sufficiency (Ostrom, 1999). Governments or other agencies need to make the waiting worthwhile with financial incentives.

Finally, another important factor for the limitation of natural resource use is the existence of a *monitoring system* (Pagdee *et al.*, 2006; Scheele & Tsaravopoulos, 2008). Monitoring of the common-pool resource conditions and user behaviour allows the forest group to timely react to possible flaws in their conservation approach. Evaluation of monitoring data can cause forest user groups to learn from mistakes and adapt their governance accordingly

(Scheele & Tsaravopoulos, 2008). Those who monitor should be accountable to the users and/or are the users themselves (Ostrom, 1999; Blomley & Ramadhani, 2005).

## 3.3 Local acceptance and execution

CFM projects are usually facilitated by NGOs or governments, but self-sufficiency requires the participants to execute the project without outside assistance. Local acceptance and execution is also dependant on several factors that must be present in a CFM project. For people to participate in the first place, they must have the expectation of some sort of benefit (Brown et al. 2002; Pagdee et al., 2006), be it money, power or a better environment. To keep the project afloat, an *incentive* of some sort must always be present (Scheele & Tsaravopoulos, 2008). There is also a flipside to raising high expectations to get people participating in forest management. When the project is well underway, these expectations may not all be delivered on, leaving people disillusioned (Blomley & Ramadhani, 2005). Kellert et al. (2000) have frequently encountered conflict fuelled by inflated expectations of community members. People often have unrealistic assumptions about what CFM can accomplish for them. They come to the participatory process expecting to gain much greater control over the natural resources, while at the same time government agencies rarely want to relinquish that control (Buchy & Hoverman, 2000).

After discussing six case studies, Kellert et al. (2000) even conclude that 'interest group and stakeholder conflict will be a normative rather than exceptional condition'. CFM is a complicated procedure, and this stems in part from the pluralistic views of stakeholders who have some way of influencing local forest policy (Mendoza & Prabhu, 2005). With the expectation of conflict, a sound *conflict resolution* system must be in place, which in itself can be a measure to address resource scarcity (Haro et al., 2005). Linked to the resolution of conflict is the significance of a *shared common interest* of stakeholders (Pagdee et al. 2006). According to Buchy & Hoverman (2000), participatory group formation happens in four steps. In the second step, the 'storming stage', values and principles are challenged and group objectives are defined. If the interests of the stakeholders are not congruent, the group will collapse and the process will be a failure.

A way to create conflict is lack of clarity of spatial, regulatory, and legal boundaries. *Clearly defined boundaries* is therefore identified as a factor of self-sufficiency (Pagdee *et al.*, 2006; Ostrom, 1999). When spatial boundaries are unclear (i.e. when it is unclear where the common-pool resource ends), people may trespass and extract resources without having the right to do so. When it is unclear which community member can extract how much of a certain resource (i.e. the 'regulatory boundary'), conflicts can hardly be avoided. The mandate of a forest association may also be unclear, especially with regard to other local institutions. This legal boundary may give rise to conflict on a more institutional level.

When participatory management projects are initiated, it is of importance that the local population is empowered, and organized in *powerful grassroots organizations* (Pagdee et al. 2006; Kellert et al. 2000). When a government structure is implemented that vests (partial) power over the forest in local organizations, success is more likely (Kanel, 2005). Apart from powerful grassroots organizations, effective governance on all levels is a great contribution to the self-sufficiency of CFM projects. *Multi-level governance* where local, regional and national agencies work together and where lower organization can influence the decisions made higher up give CFM a higher chance of success (Fisher *et al.*, 2007; Ostrom, 1999; Blomley & Ramadhani, 2005).

Inherent in 'local acceptance and execution' is the issue of equity. Though not a direct factor associated with long-term self-sufficiency, it is deemed as important by WWF and many other CFM initiating organizations. However, *equal participation and benefit distribution* throughout the community is often not realized. Many case studies describe situations where only an elite minority receives benefits from CFM, while the poorest and women are left behind (Kanel, 2005; Kellert et al., 2000; Agarwal, 2001). The process of CFM has to be open and transparent so all people are at least aware of the process and what it can mean for them. Anybody who is interested has to have to chance to participate, and thus facilitators need to be cautious not to choose processes that will exclude certain groups (Buchy & Hoverman, 2000). Equity would be helped by democratizing local governance systems, for example user groups, to include the poorest and marginalized (Fisher et al., 2007).

*Table 3 Factors influencing the self-sufficiency of CFM projects*

| ***Factor*** | ***Description*** |
|---|---|
| Timber | User groups can benefit from the extraction of timber |
| NTFPs | User groups can benefit from the extraction of various NTFPs. |
| Value-adding | User groups can increase the value of forest produce. |
| Carbon | Communities have the capacity to benefit from the trade in carbon emission reduction credits. |
| Scaling up | Community forest enterprises have the capability to scale up and diversify their activities. |
| Financial support system | User groups can receive grants or loans from outside agencies |
| Tenure security | User groups have good and stable tenure rights. |
| Effective enforcement | The tenure rights of user groups are enforced effectively. Graduated sanctions are in place. |
| Awareness | Community members are aware of the link between the state of the environment and their behaviour, and about the collective responsibility of all. Discount rate is sufficiently low. |
| Monitoring system | A monitoring and evaluation system is in place. |
| Incentives | User groups have good incentives to start CFM projects. These incentives are realistic and not overrated. |
| Conflict resolution system | A conflict resolution system accepted by all is in place. |
| Shared common interest | Community members have a shared common interest in forest protection and management. |
| Clearly defined boundaries | Spatial, regulatory and legal boundaries must be clear. |
| Powerful grassroots organization | Local forest associations receive (partial) power over the forest from higher authorities. |
| Multi-level governance | Cooperative agencies on different levels of governance are gazetted, where the local agencies can influence decisions higher up. |
| Equal participation and benefit distribution | All people in the community have the chance to participate in and benefit from CFM, to avoid local elites dominating the process. |

# 4. Self-sufficiency of CFM projects in the Naivasha catchment

In chapter 3, several factors important for the self-sufficiency of CFM projects are described. These factors can be applied to the Linking Futures project in the Lake Naivasha catchment, revealing threats to the long-term success of the project. Analysis of the project using the framework described above can show which factors are currently lacking to achieve self-sufficiency. The analysis presented in this chapter is valid for both the CFAs of Geta and Mutarakwa. The formation of CFAs in the Naivasha catchment is still in a very early phase, and therefore, not much differences between the two have surfaced. WWF's activities are similar for both community groups, and so are the views and opinions of the community members. In the future, this is bound to change, but for now a single assessment suffices.

## 4.1 Financial viability

Every tree planted by a CFA has the potential to create revenue in a number of ways. First, a seedling can be sold from a tree nursery. This tree will grow while capturing carbon, offsetting global emissions for which developed countries will happily pay. The tree can produce fruit, biofuel, silk or offer a place for a beehive, and after a number of years, the tree can be harvested and its timber sold. Meanwhile, the forest provides a pleasant atmosphere for tourists, possibly creating additional income from tourism.

However, due to a number of constraints this ideal is far from reality. As stated, timber is the most valuable resource the forest has to offer, but therefore communities are often excluded from timber harvesting. The Kenyan timber market is controlled by the KFS, that decides which trees can be cut, and by whom. When the KFS decides timber harvest can commence, it starts a bidding procedure in which commercial logging companies can participate. When joining a bidding procedure, people must provide part of their bid as a deposit. Logically, the bid can only be won by those who have the capacity to log, and who offer the largest amount of money. The timber concessions are the biggest contributor to the funds of the KFS.

The bidding procedure for timber excludes no-one, so CFAs can theoretically start logging companies and win bids. However, they would compete against large businesses with much expertise and equipment, rendering the chances of winning quite minimal. Some believe that communities may be privileged over large companies when bidding, but this is not straightforward in either the Forests Act or the Procurement Act. Even if this were the case, timber harvesting is very capital-intensive, and starting such company would require a large initial investment. Also, the timber bidding requires an initial deposit, something the communities do not have. Rather than focusing on the timber harvesting, the easiest way for CFAs to make money of the timber that grows in their forest would be for KFS to allow them part of the benefit. There is the believe in the community that they will do so, but experts disagree. The timber revenues are large, and the KFS is poor, leading to the exclusion of communities for this type of profit.

More feasible in the two year period WWF will remain in the project area is the facilitation of NTFP businesses in the area. Honey and silk production are already underway, while biofuel and carbon are not considered. Small scale honey and silk production has started or is about to start on a number of locations. Honey production is identified as a potentially very good source of income, as calculations by Nguku (2009) show that a group with 500 hives can make over Ksh 3 million a year (€30,000). Perhaps somewhat optimistic, but this calculation does show the potential of apiculture. However, challenges for both beekeeping and silk production are the lack of equipment, expertise, access to credit and marketing skills. Without a spinning machine, only raw or crudely spinned silk can be produced and sold for a low price. Without a honey refinery, honey produced is of low quality. To improve, credit is necessary yet banks are not willing to cooperate with community groups. And with this improved product, it is challenging for communities to find the right markets.

There are however good examples of small scale NTFP businesses in the neighbourhood. Around lake Bogoria, another WWF project has shown some promising results. Beekeepers in this area have started a cooperative, and with the help of WWF they have bought a honey refinery. They package their honey in individual jars, to improve its value, and are currently in the process of getting approval from the government to sell their produce in supermarkets. A similar set-up could prove very useful in the Naivasha context. Currently, a market study is underway, exploring the honey- and silk markets for local produce. Unfortunately, the results were yet unavailable, but if they are positive, these NTFPs show real potential.

The option biofuel as an alternative livelihood has not been explored at all. This is due to the process of selecting forest resources for exploitation and management by the communities. Both biofuel and carbon capture are possibilities not familiar to rural Kenyans, and therefore they do not mention it as a possibility. As a result, they will not appear in any venture the CFAs will initiate. For biofuel, this appears to be a loss. In the nearby Nyeri district, a group of women is successfully producing biodiesel with the seeds of *Croton megalocarpus*, an indigenous East African tree species which also grows in the Aberdare and Kipipiri forests. The CFAs will plant a large number of indigenous trees at the forest borders, and if they want to profit from biofuels also, they should consider *Croton megalocarpus* as one of the key species. The seeds can be sold to the women in Nyeri, provided that transport is not too expensive.

As outlined in the previous section, carbon capture can theoretically supply CFAs with additional income, through the Clean Development Mechanism. As with biofuel, carbon is not mentioned as an income opportunity by the community members. They seem to be right, as the CDM procedure is very complicated, bureaucratic and the benefits are small. Of all transacted Certified Emission Reductions, only 5% comes from Africa (Biermann et al., 2008). The number of projects (74) is very low, illustrating the lack of potential for such a venture. Added to that is the fact that neither the community members nor the local WWF staff is well informed (if at all) about the possibilities, and the fact that the Kyoto protocol will soon be replaced by Copenhagen, with probably a new CDM with new procedures. Exploring the opportunities now would seem like a waste of time.

An additional way for CFAs to attain financial means is through government funds. With the enactment of the Forests Act, the Forest Management and Conservation Fund was also established. Money from this fund may be used for a number of activities, including the promotion of community-based forest projects. Hence, this fund can be used as a capital seed for forest based enterprises. The fund consists of money appropriated by the government, investments by the forest board and gifts made to the fund. Unfortunately, accredited largely to the post-election violence and the economic crisis, this fund is empty. However, the forest fund may grow in the future. Also, other funds are available, such as the Green Zones fund or funding from NGOs. Communities must be able to write project proposals for the investment or use of such money, and for that purpose, CFA members have re-

ceived training on proposal writing. This training has been distributed recently, and there is yet not information available about whether CFAs are now capable of writing successful proposals.

As discussed, NTFP businesses are currently very small-scale, which makes it hard for them to manufacture good quality products, and acquire the necessary equipment. This is a big constraint on the possibility of a financially viable enterprise. Cooperation between groups is needed to alter this situation; a bigger producer group will have more capabilities as a whole. A good example is the honey producer group in the Bogoria catchment. This group has purchased a honey refinery and is trying to get their honey in supermarkets. Their production capacity has not reached its limit yet, so more beekeepers are invited to join. This could be an excellent opportunity for some Naivasha catchment producer groups to join a successful organization.

In the production of biofuel, a similar situation exists. If CFAs would be interested in exploring the production of biofuel, it may be possible to cooperate with the production group in Nyeri. The biggest challenge for this group is the sourcing of raw materials. Their biodiesel machine has a capacity of 800 litre per day, but they only produce 400, because of lack of seeds (The People Daily, 2008). By selling *Croton* seeds to this group, a big investment is not necessary while benefits can be collected swiftly. Even if it turns out cooperation in beekeeping or biofuel production is not possible (e.g. because the distance is too large), a cross-visit would be a great opportunity to learn. In other cases, regional visits have proved extremely useful in exchanging knowledge and experience (Fisher et al. 2007), and it would be advisable to facilitate such trips.

## 4.2 Limitation of natural resource use

The limitation of the use of forest resources is dependant on certain factors, most notably tenure security. The CFAs are currently creating a draft management plan which puts together all activities they are aspiring to execute. If approved, their co-management authority and user rights are secured for five years, after which a new plan needs to be created. This plan will include forest based enterprises they want to set up, and conservation activities

(e.g. planting trees) they want to perform. If approved, it will grant the CFA exclusivity in such enterprises, providing them with a good legal background to enforce their user rights to the forest.

In five years time, the CFA will have to write a new management plan, which may prove problematic. The current process is being facilitated by a consultant well aware of how such a plan needs to be put together. This consultant is paid by WWF, and five years from this NGO will probably not be available. The KFS is supposed to facilitate the management plan creation, but among experts doubt exists about whether it will be able to do so. The CFA is probably left on its own, and needs the capacity to write a management plan by itself. Currently, LPTs are working together with the consultant, and these teams should be taught about writing a plan by themselves, possibly with the help of the forester.

The KFS is unable to enforce the exclusivity rights of the CFAs to the forest. Therefore the CFAs will have to do so themselves, and they are very confident that they will be able to do so. If the communities benefit enough from the use of the forest as a livelihood, the inhabitants will have a very good incentive to enforce their rights. Added to this are some stark fines and punishments for those who trespass or conduct illegal activities, giving the CFA members the legal backbone to act as enforcers.

Linked to the enforcement of the limitation of natural resource use is the issue of awareness. It appears as though the people in the Naivasha basin are very aware of how their actions impact the environment. A constant threat to them is the draught, which is increasing in the area. Many people speak of the rivers, which used to be fast flowing, while now some even only contain water seasonally. The reason for this lack of water is obvious to many: deforestation. Despite this widespread awareness, many people are not acting environmentally friendly. Poverty and overpopulation leads to clear cutting of forest area in favour of agricultural land, and the unsustainable use of forest resources.

For now, today's benefits are more important than tomorrow. The rural poor have a very high discount rate, illustrated by the events between local farmers and Vegpro, a horticultural business dealing with all types of vegetables grown on their farms and from outgrowers (small holders). 28 farmer groups were contracted by this company to produce vegeta-

bles in return for a reasonable price, and extension services. However, when market prices peaked for a short period of time, smallholders sold their products *en masse* to other buyers, thus breaching the contract. This has resulted in Vegpro leaving the area. For short-term benefits, the farmers have destroyed a very good long-term arrangement. To make sure such an event does not happen with forest businesses, it is important that benefits follow swiftly after the start of the project, so people experience the benefits of conserving the forest immediately.

The final factor associated with the limitation of natural resources is the existence of a monitoring scheme. KFS will regularly monitor the forest area, to evaluate the CFA's ability to manage this forest sustainably. However, a socio-economic monitor congruent with the goals of WWF's Linking Futures programme is absent. In chapter 5, an overview of important aspects of monitoring and evaluation is given, and a monitoring scheme for the Lake Naivasha catchment is proposed.

## 4.3 Local acceptance and execution

For local acceptance and execution, the first factor discussed above is the expectation of community members that benefits will accrue to them. However, these expectations need to be realistic, to avoid future disappointment and subsequent withdrawal from the participatory process. In both Geta and Mutarakwa, many people spoken to are currently very expectant of CFM, and thus have a good incentive to participate. However, some of the expectations are bloated and may cause disappointment later on. Many community members have an idealized view of CFM. They belief that concessions paid by loggers for the extraction of timber will accrue (partly or fully) to them rather then the KFS, as soon as their management plan is approved. The same goes for the concessions for ecotourism activities in the forest, and the user fees paid by for example beekeepers, who pay KSh 2,000 per year per beehive. These expectations are overrated, as these fees and concessions will still go to KFS rather than to the CFA. Finally, CFA members also have the idea they will be very empowered by the CFM process, in terms of management capacity. They believe they will have full authority over the forest, but they are only supplementary to KFS personnel, who will still have the final word in most forest issues.

The believe that the CFA is the full beneficiary and main authority of the forest may prove devastating to the projects if it is not dealt with before WWF exits the area. It is unclear how the participants got their current information, but they need to find out the truth about what benefits and power will come to them. Caution must be taken, as taking away all the incentives for CFM is equally detrimental to the process. There are certain benefits the communities are currently unaware of, like biofuel and carbon capture. By emphasizing the benefits they can get, incentives will remain strong. On macro level, WWF should try to increase the benefit sharing by KFS with the CFAs, by having indeed part of the concessions accrue to them.

Currently, CFM participants are not expecting any conflicts to arise between them, or between the CFA and other institutions. All CFA members share a common goal; making money while conserving the forest. The conservation goal is widespread in local institutions relevant to forestry. Community organizations all feel the shared responsibility and believe they will work together to achieve the conservation and protection objectives. This gives a very positive outlook on the procedures, but there may be grounds for concern. As outlined above, in participatory processes conflicts are rule and not exception. Most conflicts arise due to inflated expectations and unclear boundaries. The boundaries of the benefits and power of CFAs are unclear, leading to inflated expectations. Conflicts between the CFA and KFS personnel may come up because of this.

Perhaps, more grounds for conflict can be found in the unclear relationship between the CFA and other local institutions, most notably the Water Resource User Association (WRUA). In 2002, the Kenyan government enacted a new Water Act, initiating a similar process as the Forests Act; participatory governance in water management. The formation of the WRUAs, 11 in the Naivasha catchment, is currently also being facilitated by WWF. These institutions have a similar mandate as the CFAs, and operate in the same area. WRUAs also create a management plan, which needs to be approved by the ministry of water and irrigation. As forests play an important role in catchment management, these plans also include activities to be undertaken in the forest.

When asked who will have the authority over such actions, the WRUA members will answer that CFA is part of their institution, because water is the overarching resource that affects al

others. Because the forests use water, the CFA is a water user and therefore part of the water users association. However, CFA members fully disagree, and argue that the WRUA is actually part of the CFA, and thus that the CFA is the leading authority. The Water Resource Management Authority (WRMA, the governmental body facilitating the WRUAs), has a different view, and is saying that the WRUA is part of the CFA when it comes to forest issues, and CFA is part of the WRUA when it comes to water issues. However, when water is extracted from the forest, this logic also fails as the water and forest issues are intricately linked. The Forests Act includes water as a 'forest produce', thus vesting the authority over water in the forest into the CFA. However, the Water Act gives WRUAs a mandate to participate in the management of all water resources in a catchment are, including the water in the forest.

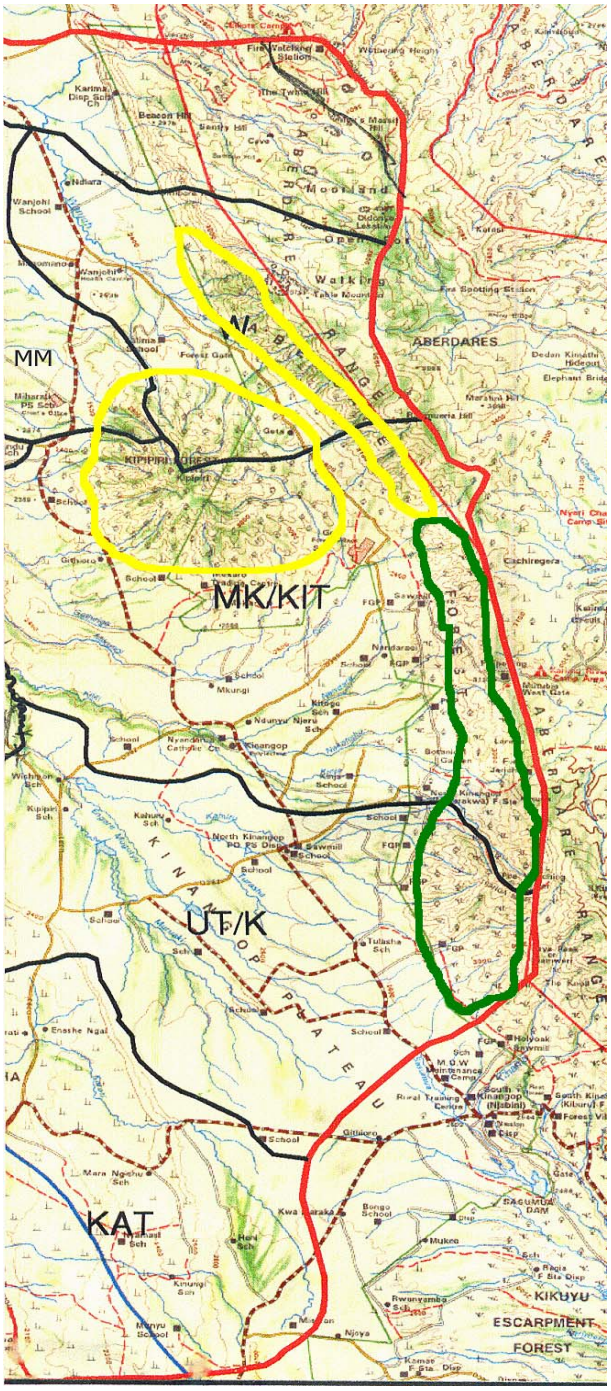


*Figure 6 Approximate location of Geta CFA (yellow) and Mutarakwa CFA (green), and the borders of the neighbouring WRUAs (MK/KIT=Mkungi/Kitiri, UT/K=Upper Turasha Kinja, MM=Middle Malewa, W=Wanjohi)*

This very confusing legal situation is aggravated by the boundaries of the WRUAs and CFAs. These are not congruent, but follow completely different paths. This seems logical because the CFA follows the boundaries of the forest and the WRUA those of the sub-catchment, but it has led to the situation that Mutarakwa CFA is spread across two WRUAs and Geta CFA is spread across three (Figure 6). This increases the chances of conflicts

two- and threefold, and limits the possibilities of cooperation between the CFAs and WRUAs.

As conflicts seem inevitable, a clear conflict resolution system is required, in the form of an overarching agency where forests and water come together. However, the separation of water and forest legislation is continued up to the highest level. The forests are being governed by the FCC, the KFS and the ministry of forests and wildlife at the regional and national levels, while the water issues are overseen by the WRMA, the Catchment Area Advisory Committee (CAAC) and the ministry of water and irrigation, the former two at regional and the latter at national level (Figure 7). Conflict resolution within the water or forest institutions is taken care of, but between the two an arrangement is lacking. The CAAC states that their conflict resolution services are also open to the CFA. However, as a committee gazetted by the Water Act, they too have the opinion that the CFA is part of the WRUA, thus immediately 'taking sides' in any possible conflict.

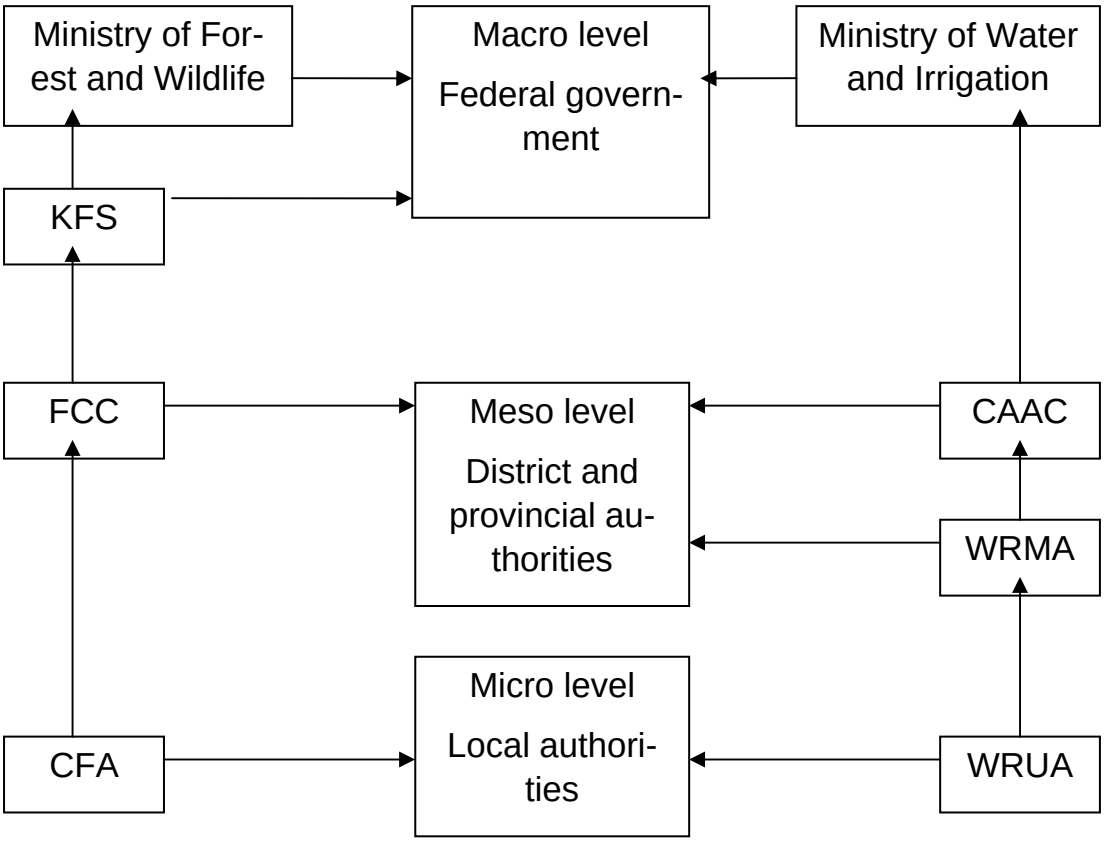


*Figure 7 The division of water and forest agencies at micro, meso and macro level*

The local and regional authorities seem the way out in this dilemma, being overarching in all issues of their constituency. Currently, the district environment committee is being gazetted, with all stakeholders present. This committee is probably a more viable option for the resolution of conflict. However, again the boundaries are cutting across those of the WRUAs and CFAs. The Naivasha catchment is part of, but not encompasses, three districts, being Nakuru, Nyandarua South and Nyandarua North districts. Even a provincial boundary is located within the catchment, making it part of both the Central province and the Rift Valley province. Which authority should be the conflict manager remains a question. Perhaps the most viable option is to facilitate the forming of a catchment wide conflict resolution committee, consisting of all stakeholders (districts, CFAs, WRUAs, other associations) and charged with definitive power over questions of authority. Such a committee should be formed quickly, now institutions are not yet conflicting and can still discuss such matters in peace.

Inherent in Kenyan forest legislation is multi-level governance. Forest agencies are active at micro-, meso- and macro-level with the CFAs, FCCs and KFS respectively. This provides an excellent ground for CFAs to influence policies and decisions higher up. CFAs have four representatives in every FCC (out of ten) and one in the forest board (out of 16), giving them the opportunity to voice their needs and requests. However, some problems are still present in the current situation. The CFAs of Geta and Mutarakwa are situated in the Central forest conservancy, with the FCC located in Nyeri, some 3 hours driving. This FCC has recently been formed, but still lacks an office, a plan and a budget. The committee has had very few meetings. The four CFA representatives, of which none come from the WWF project area, are unable to voice their needs effectively, because there is a disconnect between them and the other six members, being described as 'technocrats'. These are four government officials, a representative of the regional timber industry and a chairman. This disconnect has led to a wide gap between the FCC and the CFAs. Because the FCC is lacking the capacity to perform their tasks, the KFS is doing most of their work. This provides for the gap to become even wider and effectively eliminating multi-level governance for now.

The Forest Action Network (FAN), a Kenyan NGO located in Nairobi, is currently working with the FCC in Nyeri to build their capacity. Their project also includes the facilitation of CFAs in the central conservancy, and a properly working FCC is vital to their and WWFs success. As the FAN has 'its own CFAs', it is probably preoccupied with the needs and pri-

orities of these groups, and less so with those of the Naivasha catchment. Therefore, it would be wise for WWF to participate in working with the FCC in Nyeri. To improve CFA participation in the decision making at this level, thus to empower the grassroots organizations, FAN is also constituting an advisory committee to the FCC consisting of CFA representatives. WWF was unaware of the activities of FAN and thus has not participated in the forming of this committee. Currently, no members of the Naivasha catchment CFAs are part of this advisory committee, while this could be a good vehicle to attain WWFs goal of 'influencing policies'. It is of great importance for WWF to ensure participation of their CFAs in this committee.

Though not of vital importance for the self-sufficiency of CFM, equal participation of the entire community is important for successfully achieving WWFs goals. During the initiation of the project, it is important that all who want have the chance to participate. Talking to random community members revealed that many are yet unaware that CFM is going to be implemented in their community. According to the steps provided by KFS (Figure 5), this is logical, because only in step 4, the formation of forest associations, will the entire community be sensitized. Unfortunately for them, the draft management plan will already have been formed leaving them with little space to influence this. The danger lies in the possibility that the elite will benefit most from these arrangements, while the poorest remain powerless.

It is in no way certain that this will happen, but WWF should be cautious for the possibility. As local planning teams have already been formed and the process of writing a draft management plan is well underway, it is too late to let the whole community participate equally. However, when the draft management plan is being written, WWF should ensure that equity is warranted. Also, when the draft management plan is discussed, WWF should provide all inhabitants with information about the process so far, the draft management plan and how everyone can influence the final version. When the definitive CFA is being formed, elections can make equal participation a fact. An interesting idea for equitable distribution of the commons (e.g. fuelwood, grazing) came from the consultant facilitating the management plan creation. Her suggestion involves a 'cap and trade' approach, where the carrying capacity for certain subsistence goods is assessed and then a limited amount of user rights is distributed to all households. These user rights could then be traded amongst community member

*Table 4 Naivasha catchment CFM project's rating on the self-sufficiency factors. Red, orange and green represent problematic, needs improvement, and promising respectively*

| ***Factor*** | ***Present situation*** |
|---|---|
| Timber | |
| NTFPs | |
| Value-adding | |
| Carbon | |
| Scaling up | |
| Financial support system | |
| Tenure security | |
| Effective enforcement | |
| Awareness | |
| Monitoring system | |
| Incentives | |
| Conflict resolution system | |
| Shared common interest | |
| Clearly defined boundaries | |
| Powerful grassroots organization | |
| Multi-level governance | |
| Equal participation and benefit distribution | |

# 5. Monitoring and evaluation

As noted above, the existence of a monitoring and evaluation scheme is of importance for the self-sufficiency of CFM projects. In the Naivasha catchment, the KFS will regularly monitor the state of the environment. However, a socio-economic monitoring scheme, equally important for successful governance, is absent. In this chapter, a proposition is made for such a scheme, by suggesting indicators linked to the socio-economic goals of the Linking Futures programme.

## 5.1 Methods of data collection

When choosing a suitable method of data collection for indicators, it is important to optimize tradeoffs between the cost of learning and the usefulness of information (Chambers, 1994). This can be done by assessing aspects such as quantity, relevance and accuracy, following the strategy of 'optimal ignorance' (Campbell, 2001); the importance of knowing what is not worth knowing, i.e. the level of ignorance that can be afforded. When measuring indicators, money and time can be wasted by pursuing a too detailed analysis of certain indicators while a general overview would suffice. On the other hand, a too general approach could cause important details to be overlooked. With this in mind, in this section a selection of methods of data collection for indicators are considered, namely household surveys, key informant interviews and focus group discussions.

*Household survey*

This is a very widely used method of data collection. A household survey consists of a set of questions designed to indicate the views, characteristics and activities of people at the household level. Researchers visit a sample of the studied population at home, use the phone, internet or mail to create a database of answers, which consist of quantitative and sometimes also qualitative data. The results provided by this data may then be generalized to draw conclusions about the entire population from which the sample was drawn. Applications of this method include violence related mortality in Iraq (Alkhuzai *et al.*, 2008), global household wealth (Davies *et al.*, 2008) and the value the people of Davao, The Philippines,

place on the improvement of water quality (Choe *et al.*, 1996). These cases illustrate the wide range of topics and scales for which the household survey is suitable.

However, there are certain risks to the method that need to be taken into account when conducting a survey, as outlined by Groves (1989). The main downside to the survey is the time intensive nature; visiting individual houses on a regular basis is very costly and thus this method should only be employed when the data is necessary and will be used in management decisions. As household surveys are conducted on just part of the researched population, sampling errors may occur. A non-random sample of the population leads to biased results which cannot be generalized to the entire community. This can for example occur when part of a certain group of respondents is not willing to cooperate (e.g. women). A random sample that is too small may lead to similar problems, because a biased respondents base can also happen by chance. When the response is too small, statistical analysis will not allow the researcher to generalize the results. On the other hand, there are certain risks related to the researcher rather than the respondents. A researcher has to be very cautious with the type of questions asked. When conducting a survey, respondents may very easily be influenced by predisposed questions, creating a bias in the results. The same goes for the interviewer; different interviewers may receive different answers from the same respondents group, because of their style of questioning.

When the pitfalls as outlined above are taken into account (by means of providing for a diverse and well represented respondents group, unbiased questionnaires and interviewers) the household survey can prove a useful tool in the monitoring and evaluation of the achievement of the project goals in the Linking Futures project area. The household level is the desired level for the project's aim to improve the livelihood of local people, and a survey can generate data on whether this is accomplished sufficiently. Its most positive aspect is that it creates a dataset of the characteristics and opinions of the entire community, and not just the leaders of the community projects. Also, by conducting the same survey on a regular basis, trends in the community may be observed.

*Key informant interview*

A key informant interview is the questioning of a person very involved and informed in the project under research (Scheele & Tsaravopoulos, 2008), such as an ecotourism project

leader or a member of the board of the CFA. They are interviewed intensively over an extensive period of time, while covering a large amount of topics (Tremblay, 1957). Tremblay (1957) points out the features of an ideal key informant:

> *Role in community*. Their formal role should expose them to the kind of information being sought by the researcher.
>
> *Knowledge*. In addition to having access to the information desired, the informant should have absorbed the information meaningfully.
>
> *Willingness*. The informant should be willing to communicate their knowledge to the interviewer and to cooperate as fully as possible.
>
> *Communicability*. They should be able to communicate their knowledge in a manner that is intelligible to the interviewer.
>
> *Impartiality*. Key informants should be objective and unbiased. Any relevant biases should be known to the interviewer.

The primary advantage of using key informants is the quality of data that can be obtained in a relatively short period of time. Where surveys can be very time-consuming, a key informant may divulge the information a survey can provide in as little as an hour (Lincoln & Guba, 1985). However, there are important downsides related to Trembley's features of the ideal informant that cannot be overlooked. The identification of a good key informant is prone to error, especially when assessing the impartiality, willingness and knowledge of the individual. Marshall (1996) argues that it is unlikely that an informant represents, or even understands, the majority view of the people the researcher is interested in. When the knowledge is present, impartiality and willingness come into play. If a key informant is very well informed in the views of people and in running of the project, it is unlikely this person will be without a stake. An informant may be unwilling to reveal information about possible failures or information that may jeopardize the his or the project's position or status. Giving invalid information to achieve the contrary is also a plausible scenario.

Similar to survey, while conducting key informant interviews the researcher can create a bias in the results. The way a question is worded is one of the most essential elements determining how the interviewee will answer (Patton, 1990). By asking questions that are leading, un-

clear or dichotomous, the interview might not yield the desired results. Patton (1990, chap. 7) provides a manual on how interview questions should be worded, and it is important for the interviewer to follow such guidelines.

The use of key informants can be a very good option to gather valuable data in a very short period of time. However, caution must be taken with the selection of the informants. Relying too much on the information received from a few individuals may end up in having a biased and false representation of reality. Also, interviewers should be careful with creating a bias in the results by asking questions that do not prompt the desired response.

*Focus group discussion*

Focus group discussions can be used to provide the researcher with a general and balanced impression of a project (Scheele & Tsaravopoulos, 2008). A focus group can for example be composed of a group of leaders of ecotourism projects or of representatives of CFAs. The focus group method has a number of advantages, and may provide information not disclosed by interviews or questionnaires (Kitzinger, 1995). As key informant interviews, focus group discussions have the ability to provide condense and useful information in a short period of time. Its efficiency can even exceed individual interviews, because the views of different people are observed in a single discussion. (Morgan, 1997 pp. 13-14). In focus group discussions, the researcher does not ask all the questions. Rather, group interaction takes place which can prompt additional information the researcher did not expect to find and thus to ask for (Kitzinger, 1995; Morgan, 1997 p. 15). Moreover, focus group discussions do not discriminate against people who cannot read or write and promote input from people hesitant to be interviewed on their own (Kitzinger, 1995).

However, Morgan (1997, p. 15) argues that the advantage of group interaction also has an associated weakness. Group dynamics may create a tendency towards uniformity, where some group members may withhold information which may have been revealed in private. In contrast, a group may also experience a tendency towards polarization, in which some partakers may state more excessive views in groups than in private. These tendencies can be a potential source of weakness in the data and must be considered. Again, the researcher is a determining factor in the responses yielded, because he will act as the discussion leader. However, this role will be smaller than in an interview and will probably not create as much

bias in the results. Compared to an interview, the participants will not be tempted as much to withhold information or give the wrong impression, because the presence of other community members acts as a controlling factor.

The choice of method of data collection is an important factor in the quality and cost of an indicator. Household surveys can provide a very good overview of certain aspects of the entire community, while the costs are high. Key informant interviews may provide an equally good overview using less time and money but are prone to much more bias and flaws. Focus groups have advantages of both, but they also have weaknesses of their own. When designing a set of indicators for the monitoring scheme for the Linking Futures programme, the most plausible option is to decide on a combination of the three methods, while also using documents and statistics from alternative sources.

## 5.2 Indicators

Following the above analysis of methods of data collection, a possible monitoring scheme to assess the successes and failures of the Linking Futures programme in Lake Naivasha is created. Table 5 shows suggested indicators, linked to the impact-oriented goals of the Linking Futures programme (WWF, 2006b), the method of data collection and the academic source (if any).

Impact oriented goals of the Linking Futures programme (numbers refer to the numbers in Table 5):

1: Poverty reduction

> 1.1: Increased competitiveness of the poor (benefit sharing NR, compensation resource use, legal framework, access rights).
>
> 1.2: A designed and implemented incentive structure that promotes equitable and sustainable use of land, water and forests.
>
> 1.3: Process of change to sustainable land-use practices that facilitates sustainable livelihoods and decreases vulnerability.

2: Building civil society

2.1: Strengthened capacity of CBOs to voice the needs of the rural poor and advocate pro-poor changes at the appropriate levels.

2.2: Established and supported network of actors working on nature and poverty that has the capacity to implement appropriate actions.

2.3: Established strategic partnerships with development organisations and the private sector.

3: Influencing policies

3.1: Management plans include the rights and needs of the rural poor and minority groups.

3.2: Strengthened representation / participation of the rural poor and minority groups at the highest appropriate level of land management authority ensured.

3.3: Pro-poor and pro-environment policies integrated into national and sub-national development strategies and programs.

*Table 5 Suggested list of indicators*

| ***Goal*** | ***Indicator*** | ***Source*** | ***Method of collection*** | ***Comments*** |
|---|---|---|---|---|
| 1.1 | Percentage of revenue flowing to project participants | - | Key informant interviews with project participants | Shows the success of the project in terms of benefit sharing and poverty reduction |
| 1.1 | Ratio of project-leader income to project participants income | - | Survey of project leaders and members | Shows whether there is an equal benefit sharing in place, or that the elite takes the benefits |
| 1.1 | Distance from producers to selling points | Valentin & Spangenberg (2000) | Sales records | A measure of access to markets; if producers can sell their products far away, their competitiveness is increased |
| 1.1 | Ratio of project-participants income to average local income | Belcher et al (2003) | Survey about income of participants. Statistical information on average income of community as a whole | If the income of the participants is higher than that of the rest of the community, the project probably has increased their income. However, the project could also have richer people as participants to begin with, a baseline is necessary |
| 1.1 | Percentage of revenues saved and re-invested | Harger & Meyer (1996) (World Bank) | Interview with financial chairman of the project | Reinvestment of the revenues into the project is a measure of self-sufficiency. |
| 1.1 | Funds received | UNDP(1997) | Interview with project's financial manager | If the government, or other investing agencies, provides funds or credit to the project, it is successful in their eyes. |
| 1.1 | Ratio of income derived from project to total income of participants | Shyamsundar (2002) | Survey of project participants | Measure of the projects' success in terms of creating an alternative source of income |

| *Goal* | *Indicator* | *Source* | *Method of collection* | *Comments* |
|---|---|---|---|---|
| 1.2 | Number of people that have adopted an alternative sustainable livelihood (beekeeping, etc.) | Empaform (2005) | Key informant interviews with leaders of AL projects | Gives a very clear picture of how deeply the AL is embedded in society |
| 1.2 | Percentage of those who adopted an AL that are women, youth | - | Key informant interview with leaders of AL projects | Provides information on whether the project is successful in providing equal opportunities to marginalized groups |
| 1.2 | Ratio of female/youth income share to female/youth proportion of participants | Dijkstra & Hanmer (2000) | Survey of female participants | Measure of whether women and youth are equally benefiting from the project |
| 1.2 | % of women/youth on management boards of CBOs and CSOs | - | Review of project documents | Measure of whether women and youth are equally represented in the decision making bodies of the projects |
| 1.3 | Number of women, youth present at decision-making meetings. Ratio of input from women and youth to all participants | Empaform (2005) | Review minutes of meetings: how often do women or youth make statements | A measure of how much women and youth are participating in the project |
| 1.3 | Turn-out at community wide elections. Percentage of voters that are women, youth, indigenous people | UNDP (1997) | Voting records / Representative sample of the voters surveyed | The turn-out at the elections shows whether the community cares for the institution (e.g. WRUA, CFA). The number of marginalized people voting shows whether they are participating equally |
| 1.4 | Awareness of relationship land-use practices and environment | Harger & Meyer (1996) (UNEP) | Household survey | Awareness of environmental issues is vital to the success of projects |

| *Goal* | *Indicator* | *Source* | *Method of collection* | *Comments* |
|---|---|---|---|---|
| 1.4 | Perceived vulnerability of people's lives (climate change, hunger, education, income etc.) | - | Household survey | Vulnerability reduction shows the success of the project. This should be a longitudinal study |
| 2.1 | Number of meetings attended by CSOs, at what level of policy | Empaform (2005) | Key informant interviews with project leaders | Shows the ability of CBOs to voice their needs higher up. Distinction should be made between micro, meso and macro level meetings |
| 2.1 | Representation of rural poor in a CBO (ratio poverty of leaders to poverty of other participants/community members) | - | Key informant interviews with leaders of AL projects, household survey of other participants/community members | Measure of the representation of poor in the CBO. Poverty could be assessed by measuring what is perceived as wealth by the local population, for example the number of livestock owned |
| 2.1 | The household number of memberships in associations | Rodriguez & Pascual (2004) | Household survey | Shows the participation of community members in CBOs |
| 2.1 | Number of successful proposals for funds from government | Empaform (2005) | Key informant interviews with project leaders | If government responds to requests by poor-peoples organisations, they have effectively voiced their needs |
| 2.2 | Number of cross-visits CBO has done | Empaform (2005) | Key informant interviews with project leaders | Can show how active the CBO network is |
| 2.2 | Number of regional seminars of similar CBOs | Empaform (2005) | Key informant interviews with project leaders | Can show how active the CBO network is |
| 2.3 | Amount of partnerships | - | Interview with CBO participants | Distinction between different types of partnerships must be made |

| *Goal* | *Indicator* | *Source* | *Method of collection* | *Comments* |
|---|---|---|---|---|
| 3.1 | Number of references in each management plan to women, youth, poor | Empaform (2005) | Review management plan | When women or youth are mentioned it is probably because they receive extra rights/benefits |
| 3.2 | Number of meetings attended by CBO, at what level of policy | Empaform (2005) | Records of meetings attended, or key informant interviews with CBO leaders | Shows the participation of CBOs at different levels of governance |
| 3.2 | Representation of rural poor in CBO (ratio poverty of leaders to poverty of other participants/community members) | - | Key informant interviews with leaders of AL projects, household survey of other participants/community members | Measure of the representation of poor in the CBO. Poverty could be assessed by for example the number of livestock owned |
| 3.2 | Accountability of leaders to community (transparency, perceptions) | Agarwal (2001) | Focus group discussion with participants of projects | If leaders are accountable to community, they will serve them well |
| 3.3 | Number of successful proposals for funds from government | Empaform (2005) | Focus group discussion with leaders of AL project | If funds are readily available from the government, apparently the right policies are in place |
| 3.3 | Investment by government in pro-poor and pro-environment policy | | Review of government budget allocations on different levels | When governments invest in pro-poor and pro-environment projects, the proper policies are in place |
| 3.3 | number of policies that protect environment per year that were translated into local implementation guidelines | | Review of government documents | Policies at national level do not necessarily lead to an improved situation locally. The policies need to be incorporated into local governance. |

## 5.3 Who should monitor in Lake Naivasha?

Monitoring provides improved understanding of local environment, assesses the impact of interventions and enhances accountability of the participants (Abbot & Guijt, 1998). These reasons are normally given to answer the question "why monitor". Academic literature on this subject is readily available. As to answering the question who should monitor, suggestions are harder to find.

Naturally, all development agencies and NGOs have ways of monitoring progress of programmes that they implement. Unfortunately, these institutions enter the local arena only for a short period of time and thus cannot provide but for the monitoring of more immediate output. To be able to monitor impacts of development programmes, consistent data collection and analysis should be performed for a long period of time to show the trends of change. Once the development agencies and NGOs leave the projects communities and governmental bodies are the ones left behind. These are the decision makers for whom monitoring is relevant.

In the Lake Naivasha context there is a number of governmental bodies to whom monitoring socio-economic and environmental changes in the basin could be useful. The most obvious examples include the Kenya Wildlife Service (KWS) and the Water Resource Management Authority (WRMA). Both these institutions have direct connections to the policy makers in Nairobi via their head offices; they are also accessible to the local communities for information and guidance and have communities as targets of their various activities. Moreover, they both run beyond the administrative and bureaucratic borders within the catchment.

KWS has been involved in community development for some time. In order to lessen human-wildlife conflict and limit the instances of killing of wildlife KWS has been incorporating communities into their activities. Local residents have been hired as guides, social projects have been initiated and community enterprises (campsites, conservancies, cultural tourism opportunities) have been started. KWS is an important governmental institution as it is in charge of national parks which are significant revenue-creators for the government. KWS

already has a research department which performs animal counts and environmental impact assessment, thus there is already a knowledgeable information-gathering and processing body. On the other hand, despite two national parks in the Lake Naivasha catchment and human-wildlife conflict being relevant to all, KWS is a self-sufficient institution that does not get involved in politics on the local level. This is a limitation for monitoring because the main decision-makers, who are flexible enough to respond to the information provided by the collected data quickly, are on the grassroots level.

WRMA's best selling point as data collector and processor is its outreach to the entire catchment and its field of work that involves many stakeholders on different levels. However, the organization is not very interested in monitoring socio-economic improvements caused by various projects. Environmental impact is the most interesting to them. Nature Kenya (a local NGO) who has been collecting data on birds in the area for a number of years would also only be interested in environmental impacts, taken from slightly different angle.

Universities were thought to be the missing link that can help with data collection. In the presence of baseline study for the region involving a PhD student in database creation and Master's students in annual data collection was the proposed way to go. Informing the stakeholders that this data exists can initially be facilitated by non-governmental bodies. Since word-of-mouth is an important tool of information sharing in Kenya, the NGO's early involvement would soon become redundant. Ideally, information provided by the data is available to all for own interpretation. However, as one of the stakeholders pointed out, information sharing between institutions is not one of Kenya's strong points. A way to reach compromise could be to use KWS capacities for data processing but in partnership with division and district environmental officers who can then provide access to the results to a broader audience. Universities can be the data collectors and are able to provide consultations based on their scientific knowledge.

# 6. Conclusions & Recommendations

This report consists of three parts. In the first section, a way is proposed to classify the self-sufficiency of CFM projects. This was done by analyzing long-term success factors in the existing scientific literature on CFM projects. Several important aspects of CFM are identified, and grouped together in the categories financial viability, limitation of natural resource use and local acceptance and execution. It is important to note that this framework was established using academic literature, rather than field data. Even though most of these sources were based on field data, the value of the proposed framework can be disputed. Future research into CFM can focus on the validation of the factors described in this report, by analyzing these in projects that have shown their long-term success or long-term failure. A coupling can then be made between the observed self-sufficiency of projects and their rating for the self-sufficiency factors.

In the next section, the proposed framework was employed to assess the self-sufficiency of a CFM project facilitated by WWF in the Lake Naivasha basin, Kenya. The results, depicted in Table 4, p. 43, provide a grim picture for the future success of this project. However, it is important to take into account that the project is only in its initial phase, and it is not surprising that many factors have not yet been accomplished. In the two years WWF remains in the project area, many improvements can be made rendering the chances of success much more likely than is suggested now.

This study leads to several recommendations to improve the chances of self-sufficiency of CFM projects in the Naivasha catchment:

***Financial Viability:***

1. *Benefit sharing of timber revenues:* WWF East African Regional Programme Office (WWF-EARPO) is currently creating a country-office for Kenya. The existence of this office will increase the influence of WWF on Kenyan policies. This influence should be used to persuade KFS to install a benefit sharing mechanism for the timber revenues it obtains
2. *Improve marketing capabilities of NTFP enterprises:* As noted, a market study of honey and silk in the Naivasha catchment is underway. Unfortunately, results are yet unavailable, but if these provide a positive outlook, NTFPs can provide a great step towards self-

sufficiency. The marketing capacity of CFA enterprises can be improved through workshops with the results of this study as backbone.

3. *Assess biofuel as an Alternative Livelihood:* Biofuel, a possibility not explored at all, should be assessed by WWF as one of the possible alternative livelihoods. The producer group in the Nyeri district seems to do quite successful, and an exploratory visit by WWF to this group would be a good first step to assess the potential of biofuel production in the Naivasha basin.

4. *Improve value adding through cooperation with neighbouring groups:* The WWF project in the Bogoria catchment has shown the capability of community enterprises to form cooperatives, scale up and diversify their production. Rather than inventing the wheel a second time, community groups should visit these and other successful groups to learn and possibly cooperate.

5. *Assess success of the proposal writing workshops:* WWF-Naivasha should assess the success of their proposal writing workshops, by assessing the capacity of CFA members to write successful proposals. If this is not satisfactory, a follow-up should be provided for the workshop participants.

6. *Persuade Kenyan government to improve availability of funds:* The availability of funds from the government is a factor to be discussed at the national level. WWF should persuade the relevant authorities to invest more in the fund set up for CFAs to benefit from.

***Limitation of natural resource use:***

7. *Teach local planning teams to write a management plan:* Through the creation of a management plan, tenure will be secure for the coming five years. However, after this time a new management plan will need to be created by the communities themselves. This will need to be anticipated by teaching the local planning teams how to write such a plan by themselves, possibly with help of the foresters.

8. *Initiate a socio-economic monitoring scheme:* A comprehensive socio-economic monitoring scheme is thus far unavailable, while a regular environmental monitor will be conducted by the KFS. In chapter 5, a socio-economic monitoring scheme is proposed. Together with the project participants, this monitoring scheme should be discussed, adapted to their liking and used.

***Local acceptance and execution:***

9. *Provide communities with a realistic outlook on the benefits of CFM:* Some expectations of community members are unrealistic, making disappointment further along the line a threat. To avoid this, it is important to make better information about the management power and possible benefits of CFAs available for project participants.

10. *Install a catchment-wide conflict resolution committee:* The common goals and interests mentioned above provide a good ground for cooperation between the project participants and between the CFA and institutions such as the WRUAs. However, in CFM projects conflicts are abundant, and in the Naivasha catchment there is also ground for concern. The unclear boundaries of the mandates of different institutions may cause conflicts, as well as the spatial overlap of CFAs and WRUAs. A catchment-wide conflict resolution committee should be formed, with representatives of all stakeholders involved in natural resource management.

11. *Cooperate with FCC Nyeri:* On paper, multi-level governance seems set in stone. But in reality the FCC, constituting the meso-level in Kenyan forest governance, is not ready for its task. Capacity to fully operate its task is lacking and WWF can play a role in this. By having a close relationship with the FCC in Nyeri, the needs and wishes of the CFAs in the Naivasha catchment can be put forward, providing for stronger grassroots organizations. An advisory committee to the FCC is formed, and it would be wise to ensure representation of the Naivasha CFAs.

12. *Ensure equal participation and distribution of benefits:* Equitable distribution of benefits has not been a priority of WWF or the CFAs yet. While this is logical, because in this stage benefits are still pending, it is important to discuss equity issues now. Management plans are being created without the whole community being aware of the new situation. This results in part of the population left out of initial steps towards new forest regulations. WWF should put pressure on the local planning teams to ensure and equitable distribution of benefits and power throughout the communities.

The final aim of this report was to provide a practically feasible way of monitoring the long-term success of WWF's Linking Futures programme in Kenya. Different methods of data collection each have their associated benefits and shortcoming. The household survey, key informant interview and focus group meeting are discussed as possible methods of data collection. The household survey gives a good overview of the whole community, but is very

time consuming and expensive. The key informant interview may give the same information in a much shorter time, but is prone to bias. The focus group interview has a smaller chance of biased information, because multiple opinions are heard, but group interaction may create additional lapses in information.

The indicators of a monitoring and evaluation scheme need to have the capability to alter governance in the Naivasha catchment. Therefore, the community members need to discuss and decide on the scheme they see best fit for that purpose. The indicators presented in this report may serve as the starting point for a monitoring and evaluation scheme in the Naivasha basin. With this monitoring and evaluation scheme, the success or failure of the programme can be assessed. The question who should perform the monitoring task should also be discussed further by the communities.

Clearly, WWF-Naivasha still has a daunting task in the short period laying ahead. In two years, the organization will leave the Naivasha catchment, and the CFM project will have to be on the way to self-sufficiency. Currently, most of the signs are on red, but the optimism of the project participants serves as a catalyst with which much can happen in the coming period. This report has provided recommendations and ideas for further investigations through which the project can become a success.

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# Appendix I Roadmap for the implementation of CFM

As described in the main text, the long-term success of community forest management projects is dependant on many factors. This appendix aims at providing a stepwise intervention strategy in which all of the identified factors have been taken into account. This strategy is an adaptation of the participatory forest management guidelines created by the KFS (2007b). Table 6 shows an overview of the six steps involved, including the factors associated with each of them and activities recommended to be undertaken by the facilitating body.

### *Step 1 Assess legal background*

The first step of starting a CFM project should be an assessment of the legal background of forest governance in the target country. Several factors important for the self-sufficiency of these projects can be rated in this stage, being tenure security, benefit sharing of timber (and other) concessions, the existence of a financial support system, clearly defined legal boundaries, powerful grassroots organizations and multilevel governance. With the result of this assessment, a decision can be made whether or not to continue with the implementation of CFM in the researched country. When the legal assessment provides encouraging results, a project can be initiated. If not, more work is first needed at the macro level, to improve the legal backbone for CFM.

### *Step 2 Identification*

If step 1 yields a positive result, the next step is the identification of the target communities and resources. Of importance in this stage is the choice of forest area the project wants to conserve and protect. This forest area should be under threat of overexploitation by neighbouring communities, and provide ample opportunities for the communities to extract resources sustainably. There should be a market for the forest produce, and therefore a preliminary market study should be part of this phase. This study will also show the potential

for the scaling up of forest based enterprises. Apart from forest conservation, CFM projects have poverty alleviation as a simultaneous goal. Therefore a socio-economic survey is necessary to reveal the need for a project in the identified communities. This survey can demonstrate awareness of the environment, the willingness to cooperate and expose equity issues. Later, the results can be used as a baseline for a socio-economic monitoring scheme.

Furthermore, it is important to find out which organizations and associations are already active in the area. Other NGOs can be cooperated with, and existing local associations can be prompted to include CFM into their activities. This takes away the need to create a new association for this purpose. Different stakeholders have different interests in the forest, and knowledge of these is important to counter problems and conflict later on in the process.

***Step 3 Sensitization and formation of a forest association***

The next step in the CFM process is the sensitization of the community members. Information meetings in the target communities should take place. During these meetings, the process of CFM and the advantages of participation can be explained. This increases the incentive for people to cooperate. Community members can then decide whether they want to be part of the project. Consecutive meetings with the participants can be used to form a forest association, or adapt an existing organization to perform CFM, with elections to ensure representation of the whole community. Special attention during these meetings should be given to marginalized groups, so they are equally represented in the association. A joint vision of the association should be defined, to demonstrate a shared common interest of all stakeholders.

When the association has been formed, it should be helped with the influencing of decisions made higher up. Initial contacts with regional and national organizations can be set up by the facilitator, and workshops in e.g. lobbying and debating can be organized. The results of the stakeholder analysis in step 2 can reveal possible conflicts that may arise in the future. When the forest association has been formed, it is important to discuss conflict manage-

ment with all relevant stakeholders. A general conflict resolution body for the entire area, with representation of all stakeholders, is recommendable.

***Step 4 Creating a management plan***

When the forest association has been formed, it is time to create a forest management plan. This will need a more in depth analysis of the region: the possibilities for forest based enterprises, current unsustainable use of forest resources, and a more detailed market study. In conjunction with the facilitating NGO, the association and other relevant stakeholders, a local planning team should use all available information to draft a management plan. Also, exchange visits with other forest associations can generate new knowledge and ideas for the drafting of the plan and should therefore be encouraged.

In this plan, the factors for self-sufficiency should be prevalent. The plan should include ways to conserve and protect the forest, e.g. by local enforcement and maximum sustainable yield of forest resources. Also, it should include the ways in which the association is planning to make money of the forest, e.g. via NTFP businesses or carbon capture. In addition, it should contain a way to monitor the environmental and socio-economic aspects the CFM process is trying to improve. This can show which aspects the projects is successful in and, more importantly, which aspects need to be improved. Finally, the plan needs to explicitly state how potential benefits will be distributed fairly across the population. Once a first draft of the management plan is finished, it can be discussed and adapted by the forest association in a public hearing, in which the planning team defends its ideas. In this meeting, consensus can be reached about the final version of the management plan.

***Step 5 Implementation***

Once the final management plan has been accepted, it can be implemented. Groups of forest association members assigned to different tasks (enforcement of the rules, starting up

forest based businesses) start their initial operations, which will need support from the facilitating NGO. Adding value to forest resources in a way that is attractive for a larger market is probably very new, as is bringing the produce to this market. Workshops and other support for this purpose is needed in this stage of the process. Planning flaws may become visible in this step. The leaders of the association, together with the facilitating NGO, need to intervene timely if this occurs. Adaptations of the plan may be necessary to ensure success. The population should be informed and able to voice their opinion throughout the implementation and adaptation of the plan.

***Step 6 Monitoring & evaluation***

During the creation of the management plan, a monitoring and evaluation scheme was also developed by the planning team. When the process of implementation is firmly underway, monitoring of environmental and socio-economic aspects should commence. This can reveal areas where the CFM process is doing well and which aspects need to be improved, which can then be acted upon. Also, monitoring of the forest based businesses can show which ventures are very successful and could therefore be scaled up. The studies conducted in step 2 can provide baseline data for the M&E framework. Documentation of the M&E framework, about which approaches have been successful and which have failed, can serve as lessons for projects in other areas where CFM is newly implemented.

*Table 6 The steps of a successful CFM project*

| ***Step*** | ***Factors important*** | ***Activities*** |
|---|---|---|
| 1. Assess legal background | Tenure security<br>Benefit-sharing<br>Financial support system<br>Clearly defined boundaries<br>Powerful grassroots organizations<br>Multilevel governance | -Assessment of legal context of CFM in the target country<br>-Decide whether country is suitable for CFM project |
| 2. Identification | Timber<br>NTFPs<br>Carbon<br>Equal participation<br>Scaling up<br>Awareness<br>Incentives | -Preliminary assessment of forest area<br>-Preliminary market study<br>-Socio-economic survey of the target communities<br>-Stakeholder analysis of region |
| 3. Sensitization and formation of a forest association | Incentives<br>Equal participation<br>Shared common interest<br>Conflict resolution system | -Organize informational meetings -Form a forest association<br>-Define a shared vision<br>-Establish contact between association and higher forest agencies<br>-Establish conflict resolution body |
| 4. Draft management plan | Effective enforcement<br>Value adding<br>Scaling up<br>Conflict resolution system<br>Clearly defined boundaries<br>Equal participation<br>Monitoring system<br>Timber<br>NTFPs<br>Carbon | -Assess possibilities for forest based enterprises<br>-Assess current use of forest resources<br>-Conduct detailed market study<br>-Organize exchange visits<br>-Decide on conservation measures<br>-Decide on forest based enterprises to be established<br>-Create M&E scheme<br>-Create benefit sharing mechanism |
| 5. Implementation | Effective enforcement<br>Value adding<br>Conflict resolution system<br>Equal participation<br>Timber<br>NTFPs<br>Carbon | -Support initial operations of forest association<br>-Adapt plan where necessary |
| 6. Monitoring & evaluation | Monitoring system<br>Scaling up | -Address revealed weaknesses<br>-Scale up activities where possible<br>-Document M&E outcomes to assist other CFM projects |