

**Wildlife Conservation and
Management in Kenya: Towards a
Co-management Approach**

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NOTA DI LAVORO 47.2004

MARCH 2004

NRM – Natural Resources Management

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Summary

The co-management approach of managing natural resources has increasingly become popular among conservationists and development practitioners since it overcomes the shortcomings of both the centralised management and community-based approaches that hinder harmonization of conflicting interests among diverse stakeholder groups. Considering criteria developed from theoretical advancements on co-management and drawing on empirical studies conducted in Kenya, the paper examines how successful the co-management approach has been in terms of meeting the needs and interests of local communities and conservationists. Further, it analyses some of the factors or conditions that contribute towards the emergence and subsequent adoption of the co-management approach in the conservation and management of wildlife. These factors, which may also be important in other developing countries, include the provision of a favourable policy framework, institutional capacity of organized user groups to co-manage wildlife resources, land tenure conditions and accessibility to wildlife resources. It is emphasised that the co-management approach has had, so far, mixed results and there are certain important factors challenging its successful implementation in Kenya.

Keywords: Kenya, Co-management, Wildlife management, Conditions for co-management, Sustainable management

This paper has been presented at the 4th BioEcon Workshop on “Economic Analysis of Policies for Biodiversity Conservation”, Venice, Italy, August 28-29, 2003, organised on behalf of the BIOECON Network by Fondazione Eni Enrico Mattei, Venice International University (VIU) and University College London (UCL).

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1 Introduction

1.1 Evolution of Different Management Approaches of Wildlife Resources

Searching for viable and sustainable strategies of wildlife conservation in developing countries, which are typically rich in biodiversity, traces back to the times when the *fence and fines* approach, also known as American National Park model, was commonly being applied (Borrini-Feyerabend, 1996: 5; Songorwa 1999: 2061; Venema and van den Breemer, 1999: 5). This led to the establishment of protected areas (PAs) or ‘fortress parks and reserves’ which did not condone wildlife consumptive utilisation and entailed high management costs for governments, with majority of the benefits not accruing to local communities. To enhance the biological integrity of the parks, this model has been adjusted to the more attractive “*protected areas outreach*” (PAO) model which encourages working and educating local communities and sharing with them some benefits (Barrow and Murphee, 2001: 32-33). However, with high population growth, governments’ shrinking budgets and subordination of natural resources to short-term economic or political interests, neither the PAs nor PAO has succeeded in curbing biodiversity loss (Baland and Platteau, 1996: 420; Meinzen-Dick and Knox, 2001: 44-45). Thus, there has been a shift from this ‘protectionist’ concept or states’ centralised management strategy towards a community-based model, which emphasises on transfer of wildlife rights and responsibilities to local institutions.

Over the past two decades, several developing countries in Sub-Saharan Africa have adopted the community-based approach, which is often implemented in form of integrated conservation and development projects (ICDPs). Such projects include the Communal Area Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe, Luangwa Integrated Rural Development Programme (LIRD) in Zambia and Community-based Wildlife Management in Tanzania (CWM) (IIED, 1994; Virtanen, 2003). Although this approach has helped to tackle some of the shortcomings of the centralised and ‘protectionist’ approach, it has some significant limitations and obstacles to implementation and therefore some of the ICDPs have not been successful (Kiss, 1999: 14; Leach et al., 1999: 225; Songorwa 1999: 2062; Virtanen, 2003: 187). As documented by several authors (see for example Wainwright and Wehrmeyer, 1998: 934; Songorwa, 1999: 2068; Virtanen, 2003:

187), most of these ICDPs have not only experienced low community participation but have also failed to achieve their conservation and development objectives, and to produce sufficient benefits that can improve communities' living standards.

Thus, although at first the community-based approach seemed quite promising as an effective and efficient tool in achieving both biodiversity conservation and socio-economic development goals, many conservationists are now recommending its review. Further, biodiversity conservation funding organisations (e.g. World Bank, bilateral donors, etc.) and international conservation non-governmental organisations are calling for the application of a combination of the states' centralised approach and the community-based models. Combining both models is regarded essential for ensuring sustainable biodiversity conservation since needs and interests of both conservation managers and local communities are fulfilled. 'Dangers of decentralisation and devolution' which arise due to certain resource characteristics (e.g. endangered species) could also be avoided (Lutz and Caldecott, 1996: 2). In supporting this view, Kiss (1999: 14) argues that "community-based conservation activities are essential for generating political support for conservation and reducing and mitigating human-wildlife conflicts, but they can rarely, if ever, fully substitute for direct protection of unique and valuable biodiversity resources".

1.2 The Emergence of the Co-management Approach

The failure of both the state-based and community-based models of managing wildlife and other natural resources to successfully fulfil goals of conservation and meet the socio-economic needs of the local communities is regarded as the impetus for the evolution of collaborative management (in short, co-management) approach. The co-management approach (also sometimes referred to as participatory management, joint management, shared management, management in partnership, multi-stakeholder management or round table management) seeks to create negotiated agreements between the protected areas' managers and other interest groups, including local resource users (Hilhorst and Aarnink 1999; Borrini-Feyerabend et al., 2000). Within the current discourse on decentralisation and devolution of natural resource management authority to local organisations, the co-management approach has increasingly gained support among the common-pool resource experts. It fits well into the devolution process because it seeks to complement the

weaknesses or shortcomings of both the traditional or community-based natural resource management systems and the centralised strategies of the state.

Meinzen-Dick and Knox (2001: 41) emphasise that the co-management approach emerges when the state retains a substantial role in resource management, while the role of the local resource users or landowners is expanded. Thus, it is different from community-based approach, which is characterised by more or less complete control of the natural resources by the local user groups. Clear differences also arise from the focus of each of these two approaches. While the community-based approach is people-centred and community-focused, the co-management strategy focuses more on a partnership arrangement between the government, resource users or landowners and other key stakeholders in the society, and has therefore a broader scope and scale (Pomeroy, 2001: 119-120).

Though co-management can positively contribute towards successful achievement of goals of conservation and socio-economic development, co-management arrangements cannot emerge or be effective without an enabling political framework and favourable government policies. A strong political support and enabling policies would particularly create incentives for the local resource users to participate fully in management partnerships and afford them protection from powerful outsiders (Borrini-Feyerabend et al., 2000). Co-management cannot also be regarded as a panacea to the problems of natural resources management, since, as evidenced from past studies, results of its feasibility and viability have been mixed. In the light of these arguments and drawing on empirical cases conducted in Kenya, this paper tackles two important issues that concern implementation of partnerships or co-management projects. First, it looks at how the adoption of co-management approach has so far been dependent on the Kenyan wildlife conservation policy. Second, it examines how successful the co-management approach has been in fulfilling needs and interests of different stakeholder groups and mentions major challenges that are faced with the implementation of co-management initiatives in Kenya. The paper adds to the growing discourse on the relevant conditions for successful management of natural resources in developing countries, which, though known to be rich in biodiversity, lack the capacity for long-term sustainable management.

2 Shifts of Wildlife Management Strategies in Kenya in Relation to Policy

In Kenya, which is one of the most developed wildlife-based tourism destinations in Sub-Saharan Africa (Sindiga, 1999), searching for a sustainable approach of managing wildlife traces back to the 1970's post-independent wildlife policy that gave emphasis to preservation of land occupied by wildlife leading to creation of numerous National Parks and Reserves¹. Under this strategy, hunting was disallowed and tourism activities were limited to land within in the protected areas. Although the policy contributed towards reduction of wildlife losses in protected areas (Norton-Griffiths, 2000), it led to local communities being evicted from their ancestral land. Since the local communities never participated in the establishment of the protected areas, this policy neither provided for their interests nor gave them access to wildlife benefits. Moreover, with seventy percent of wildlife living outside protected areas either on permanent or seasonal basis, greater wildlife losses arose from outside the parks and reserves and therefore this strategy failed to support the objective of total protection.

The enactment of the Wildlife Act (also called the Wildlife Conservation and Management Act) by the Kenyan Parliament in 1977 (Western, 1994: 34) led to a major overhaul of the conservation policy. As indicated in Sessional Paper 3 of 1975 (Republic of Kenya, 1975: 13), the new policy called for direct negotiations on the future of wildlife in dispersal areas between the newly created Wildlife Conservation and Management Department (WCMD) and the local communities. However, due to an inadequate legal framework, political and bureaucratic interference, and corruption, the (WCMD)² did not succeed in tackling the increased levels of human-wildlife conflicts and loss of biodiversity, which are the two major wildlife management problems it had been created to deal with (Kock, 1995; Honey, 1999). Further, the local communities, who bear both direct and indirect costs of living together with seventy per cent of wildlife, remained excluded from direct cash benefits that

¹ Currently the country has 26 National Parks, 28 National Reserves and one Sanctuary, which occupy 44000 km² (8% of the total territory) and harbour about 25% of total wildlife populations (Watson, 1999: 1). About 75% of wildlife animals therefore live in privately owned lands, which are adjacent to these protected areas. The majority of the protected areas are situated in the savannah grasslands and semi-arid lands, which previously had been occupied by traditional pastoralists.

² The WCMD was formed by combining the National Parks Board and Game Department. Though the National Parks Board had professional staff, those of the Game Department were corrupt and had been politically misused. Also, WCMD was made a department under the Ministry of Tourism and Wildlife and therefore wildlife management continued being guided by top down policy decisions (Republic of Kenya, 1975: 4)

could be derived from wildlife in their privately owned lands (Norton-Griffith, 2000: 13). The 'negotiating policy' could not allow initiation of management partnerships with local communities since it lacked a clear framework to facilitate its implementation.

In an attempt to improve the relationship between the state and landowners in the wildlife dispersal areas, and curb the biodiversity losses of the 1970s and 1980s, the Wildlife Act was amended in 1989 and WCMD was replaced with Kenya Wildlife Service (Barrow et al., 2001). As a semi-autonomous parastatal, Kenya Wildlife Service (KWS) could raise and manage its own funds, hire its own staff and run its operations independently of the Ministry of Tourism and Wildlife, and hence, it had the incentives that its precursor (WMCD) lacked. During the first two years of operation, KWS drew up a new policy framework and development program (also known as the Zebra Book) for the period 1991 to 1996 (Honey, 1999). Through this framework, Community Wildlife Service (CWS) was created to forge co-management initiatives or partnerships with communities outside the parks and reserves and hence enable them to derive direct cash benefits from the presence of wildlife in their land. By 1999, KWS had implemented such projects in the wildlife dispersal areas of Amboseli-Tsavo National Parks, South Coast and Laikipia-Samburu region. From the perspective of Kenyan conservationists these projects are considered as a major breakthrough in wildlife management since they have contributed towards increased wildlife populations and reduction of human-wildlife conflicts.

The foregoing discussion supports the premise that political framework and government policies are an important subset of the conditions determining the application of the co-management approach in a given region or country. However, even with a favourable policy in Kenya, the adoption of co-management has not been widespread. Moreover, the question remains as to whether this approach has been successful in reconciling the conflicting interests of the diverse stakeholders involved in the conservation and management of wildlife. In Sections 3 and 4 these two shortcomings that concern the implementation of the co-management approach in Kenya are discussed in detail.

3 Extent of Adoption of Co-management in Kenya

A country survey carried out by Mburu (2002) showed that adoption of management partnerships in Kenya is dependent on wildlife management policy, institutional capacity to co-manage wildlife, land tenure conditions and access to wildlife resources. As far as

wildlife policy is concerned it is evident that KWS, as the national custodian of wildlife, is only able to forge partnerships in areas where the current policy allows its direct involvement in conservation issues. As such, in the dispersal areas of the protected areas where it is not directly involved with wildlife management, communities can organise themselves into conservation groups without entering into any negotiations with KWS. Such community-based conservation projects are implemented under the authority of the respective County Councils and KWS's role is reduced to seasonal provision of security³ (see Table 1). Thus, due to a weak policy that denies KWS full control and management rights to all wildlife resources in the country, though it owns them, it has not been possible to adopt co-management in all wildlife dispersal areas (Poole and Leakey, 1996). This implies that the claim that the failure to grant local communities property rights and non-consumptive user rights over wildlife resources limits local communities' participation in conservation initiatives (Honey, 1999; Norton-Griffiths, 2000) may not be playing a relatively important role in the adoption of co-management as it is the case with the wildlife conservation policy and its provisions.

In Kenya, adoption of co-management is favoured by owning titles to land. For instance, the Golini-Mwaluganje co-managed project in Coastal Province did not start off until the community members had acquired title deeds to their land (Kiiru, 1995), a process that was mainly driven by the relatively high incidences of human-wildlife conflicts. However, there are many dispersal areas of Kenyan protected areas where local communities fail to benefit from co-management due to lack of claim to land ownership since the relatively low level of human wildlife conflicts does not attract the attention of conservationists and government as was the case with Golini-Mwaluganje. This lack of land ownership weakens the bargaining position of such communities, making it difficult for them to seek the option of co-management. In general, local communities with group titles to land have a relatively higher access to wildlife resources than private landowners with smaller units that fail to provide suitable habitats. Thus districts with group ranches, such as Kajiado and Laikipia, have more wildlife partnership activities than other areas. The land subdivision policy can therefore be regarded as an anti-conservation policy that create perverse incentives for the formation of organizations such as wildlife associations which would enter into partnerships with KWS

³ The county councils have also their own security arrangements. However, they are required to call for the assistance of KWS in situations that are difficult for them to handle and particularly if decisions to eliminate certain rogue wildlife have to be made and executed.

for the purpose of ensuring that benefits flow to the communities and losses to wildlife resources are reduced.

Table 1: Co-management wildlife projects in Kenya: viewed from the perspective of KWS

Project	Role of KWS	Co-managed stages of project cycle	Co-managed activities	Overall type of co-management ^a
1) Golini-Mwaluganje of Taita-Taveta/South Coast	Provides security and involved in all decision-making activities	All stages	All activities	Co-operative
2) Lualenyi, Oza and Mramba in Taita-Taveta/South coast	Provides security, does fencing and makes key decisions	Planning stage	All activities	Consultative
3) Laikipia Wildlife Forum	Assist sometimes in providing security and making some decisions	Implementation stage	Mainly security	Advisory
4) Group Community projects in Laikipia/Samburu	Provides security (sometimes)	Implementation stage	Security only	- (KWS has no management rights)
5) Group Community projects in Maasai Mara	Provides security (sometimes)	Implementation stage	Security only	- (KWS has no management rights)
6) Kimana, Selengei, Mbirikani and Lorarashi in greater Amboseli	Provides security, assists in fence maintenance, gives advice when consulted	All stages	All activities	Delegated

^a Since the wildlife projects were not studied in detail, only a general classification of co-management can be given at this stage. It is envisaged that different management tasks will have different kinds of co-management arrangements.

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As has been pointed out by Norton-Griffiths (1997), this disincentive has greatly contributed to relatively higher wildlife losses in districts where land has been subdivided and is privately owned by individuals and where it has been difficult to organize local communities to form wildlife associations or user groups.

Closely related to land tenure and access of wildlife resources is the capacity for the local community to organize themselves into a formidable stakeholder group that can negotiate partnership conditions with KWS and ensure effective local participation of landowners. As Mburu et al. (2003) document, local communities in group ranches have a relatively high capacity for self-organization and access to social capital at both household and community levels, which, because it reduces the effects of heterogeneity, enhances their potential for participation in co-management. Moreover, such groups of landowners have the incentive to lease the co-managed area (e.g. a sanctuary) to tour operators, a strategy that results in efficient management arrangements and which does not only reduce transaction costs borne by landowners but also increases their cash benefits. Having the institutional capacity to co-manage wildlife with KWS is therefore an important criteria which ought be considered when determining community groups that can successfully adopt co-management. In essence, without such organized groups co-management may not emerge and thus this factor is as important as the provision of a favorable policy framework.

4. Rating the Success of Wildlife Co-management in Kenya

Since the partnership approach or collaborative management seeks to create negotiated agreements between the state and the local communities (other stakeholders may be included), it has been recognised in Kenya as a promising approach that offers a possibility to overcome conflicting interests over wildlife exploitation. However, achieving successful partnership is confronted with many challenges, which may eventually hinder the approach from becoming widespread. In this section, the criteria for assessing the success of co-management are developed and drawing on results of a number of case studies, the situation in Kenya is evaluated.

4.1 Considerations of Criteria for Evaluating Successful Co-management

Within the context of sustainable development (WCED, report 1987⁴) and Convention on Biological Diversity (CBD), three broad criteria i.e., economic, ecological, and social (socio-cultural), can be used to evaluate success of co-management in developing countries. However, considerations of success in a short-term perspective will entail further elaboration of these criteria. As Sen and Nielsen (1996: 409) urge, evaluation of co-management does not necessarily entail quantification of these three components of sustainable development, but assessing whether co-management has positive or negative effects on them. The most common evaluative criteria that can be applied practically are: efficiency, equity and sustainability (Hanna, 1995; IFM-ICLARM, 2001).

Efficiency of co-management can generally be considered in terms of cost-effectiveness where the lowest costs to achieve a particular or stated level of benefits is determined (see, for example, Kuperan et al., 1998). However, there are also situations where flows of both costs and benefits have to be considered (see, for example, Norton-Griffiths, 1996; Barnes et al., 2002; Mburu and Birner, 2002) in order to identify the level of conservation benefits that is efficient (allocative efficiency). The third aspect of efficiency is organisational efficiency (Mburu and Birner, 2002). This latter aspect involves comparison of benefits and costs in order to identify the organisational structure of co-management that would make it possible to achieve certain objectives, for example, maximum net benefits from conservation. It is therefore closely related to allocative efficiency. An important question in this case is as what kinds of characteristics or conditions (e.g. leasing conservation area to tourism operators) make some co-management arrangements more efficient than others both in terms of allocative and organisational efficiency. More, it is important to consider whether transaction costs (costs of participation) play any important role in influencing efficiency of co-management.

Equity refers to fairness to all stakeholders in co-management arrangements or how the outcomes of the management arrangements affect the local communities in terms of race, ethnicity, class and gender (Hanna, 1995: 26; IFM-ICLARM, 2001: 2). It has four main

⁴ WCED Report (1987) (also called BRUNDTLAND Report) defines sustainable development as development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

components which are, however, not addressed in detail in this paper. These are: representation, process clarity, compatible expectations and distributive effects.

Sustainability in the context of the co-management can be divided into three components: stewardship, resilience and governance. Stewardship is defined as the tendency for resource users to maintain productivity and ecological characteristics of the resource (Sen and Nielsen, 1996: 409). In evaluating the management process in fisheries, Hanna (1995: 26-27) identifies three components of stewardship: time horizons, monitoring and enforcement. If resource stewardship is to be enhanced, management should contain incentives to lengthen the time horizon beyond the short term, have adequate and practical systems devised to monitor ecological conditions and human behaviour, and lead to regulations that promote compliance and permit cost-effective enforcement. Resilience is the ability of the co-management systems to absorb and deal with changes and shocks (Nielsen et al., 1998: 16). The co-management process is expected to have rules that are flexible enough to respond quickly to changing conditions and at the same time be able to adapt to both changes in the structure of the industry and changes in the market. Governance is mainly measured in terms of the level of rule compliance. Other measures may include overall reduction in conflict, existence of an effective conflict mechanism, and existence of practical and implementable enforcement procedures.

4.1.1 Efficiency of the Co-management Approach in Kenya

The first and most important challenge of co-management in Kenya has been the struggle to create financial incentives that could continually motivate local communities to participate in conservation activities (Watson, 1999). Mburu and Birner (2002) analysis of costs and benefits of co-management initiatives in the dispersal areas of Amboseli National Park and Shimba Hills National Reserve provide useful insights into this aspect. In their financial analysis, local communities' costs arising from contributions in terms of land, time and effort, and cash were discounted and compared with discounted revenue from the tourism activities. Their results showed that none of the three partnership projects in the analysis could be considered profitable from the local communities' perspective. Even under conditions where local communities have leased conservation land to tourism business operators, wildlife does not earn enough revenue to offset costs arising from different streams such as the opportunity costs of land that is set aside for wildlife conservation; costs of installation and maintenance of infra-structure, such as fences, roads, offices, houses for

wildlife wardens, etc. and maintenance of wildlife; costs arising from destruction to structures, losses of human life, damages to crop and livestock production by wild animals, and the costs incurred to prevent such damages; direct management costs which include recurrent costs from reception of tourists, office work, stationery; and transactions costs arising from the stakeholders' participation (see also Norton-Griffiths, 1996; Emerton, 2001). It therefore seems likely that the partnership projects, whose costs of establishment were mainly subsidized by the state agencies and NGOs, may not continue to operate without assistance from outside. Thus creation of co-management approaches that are not dependent on external funding is yet to be realized in the country. Coupled to the financial incentives aspect is the question as to who bears relatively the bigger proportion of management costs (Meinzen-Dick and Knox, 2001). Mburu (2002) showed that the co-management approach in Kenya has implied a shift in who bears the costs of wildlife conservation and management, from state agencies to local users or landowners, who particularly shoulder the burden of operational production costs of the projects.

The analysis of different categories of costs of wildlife co-management by Mburu et al. (2003) indicated that in situations or conditions where production costs play an overwhelming major role, transaction costs arising from information acquisition activities, negotiation and operation activities of collaborative management are not a major factor influencing the efficiency of co-management governance structures. However, since it is the local communities who bear these transaction costs, it would be expected that with more devolution of wildlife management to well-organized and competent groups and adoption of co-management, the state and conservation NGOs could save some of their conservation expenditure at the expense of the landowners.

4.1.2 Distributive and Representational Aspects of Co-management

Distributional aspects of power and project benefits can be regarded as the second major challenge that may hinder the success of the co-management approach in Kenya. Drawing on co-management examples from Kenya and several other African countries, van den Breemer and Venema (1999) argue that one major condition for the approach to be effective is fair distribution of political power (among the stakeholders) and particularly in the decision-making arrangements in order for stakeholders to be socially recognized and have control during enforcement of rules or agreements. Mburu's (2002) analysis of participation in Kimana and Golini-Mwaluganje partnership projects also showed that co-management

may not be implemented successfully in conditions where the local communities are under represented in the management boards; their views and desires are disregarded by other stakeholders; management boards lack transparency in their activities; and decision-making process is hijacked by some of the stakeholder groups. Such unfair distribution of power could lead to mistrust of stakeholders and act as a disincentive for the participation of the local communities. According to Hanna (1995) such problems are normally related to the way the local communities are involved during the initial phases of the co-management process and particularly the negotiations. If, for example, the local communities fail to be fully incorporated into the co-management process at the ex ante phase, they are likely, at the ex post phase, to become suspicious of the importance of co-management arrangements leading to non-compliance with the implementation of some activities of the initial contract. This kind of behaviour can result in both local communities and other stakeholder groups incurring considerable production and transaction costs at the ex post phase, as has been empirically investigated by Mburu et al. (2003). But participation in co-management initiatives in Kenya has also been hindered by the heterogeneity of local communities, which is a key factor for facilitating collection action (Baland and Platteau, 1996; Ostrom, 1999). Except in group ranches which are mostly occupied by Maasai and Samburu⁵ ethnic groups (see discussion in Section 3), most of other areas of strategic importance as far as conservation of wildlife is concerned are occupied by landowners who are relatively heterogeneous in terms of culture, social background (ethnic, race, religion, etc.) and economic interests. While it is possible to deal with the problem of heterogeneity by designing appropriate institutions (Varughese and Ostrom, 2001), such options have not been pursued within the Kenyan projects.

4.1.3 Stewardship, Resilience and Governance of Co-management

As reported by Norton-Griffiths (2000) and Mburu (2002), one important positive result of KWS forging partnerships with local communities has been the improvement of the condition of the wildlife resource. For instance, Mburu (2002) reports that after adopting co-management in the dispersal areas of Shimba Hills National Reserve the elephant population in Golini-Mwaluganje grew to the extent that it went beyond the area's carrying capacity and thus translocations to other protected areas had to be conducted. In Laikipia District

⁵ Maasai and Samburu are closely related ethnic groups that have a similar language, are semi-nomadic pastoralists and have a common culture and traditions. Though they do not live in the same area, they occupy similar agro-ecological zones in the country.

where Laikipia wildlife forum (LWF) has been in partnership with KWS since 1994, elephant numbers in local communities' land have also increased tremendously, prompting KWS to conduct several translocations to Meru National Park. As Gachigiri (2002) reports, more than 2,500 elephants in this area co-existed with livestock by the year 2002, after leaving the surrounding protected areas for better habitats outside. The wildlife count by the Department of Resources Surveys and Remote Sensing (DRSRS) in 1997 also shows that management partnerships improves the level of stewardship and contributes towards resource improvement. Notably, the count showed that between 1994 and 1997 wildlife numbers had either remained unchanged or increased in areas with management partnerships while in other areas losses over the same period were above thirty percent (Norton-Griffiths, 1997). In areas where numbers have increased, wildlife animals, and particularly elephants, have become friendlier to human beings since their existence in the dispersal is not under much threat. This improvement on the nature and number of wildlife has been a great incentive for conservation state agencies and NGOs to continue participating and spending their limited resources in the co-management arrangements. With increased level of stewardship the local communities have, as a result of being involved in management partnerships, gained incentives to lengthen the time of their participation in wildlife co-management and tourism activities beyond the short term. For example, empirical data collected in Golini-Mwaluganje showed that 74% of the sample landowners preferred to continue investing in the wildlife conservation even in the long term (Mburu, 2002b).

An important impact of the partnerships, which is also related to the issue of stewardship in wildlife management, is the change of attitude and perception of the landowners towards pro-conservation stakeholders and wildlife resources. Before the sanctuaries were created, the relationship between KWS and landowners had deteriorated to the extent that the latter had developed a tendency to kill wildlife secretly rather than reporting rogue animals and damages to the former as required by the law. However, with the presence of the partnership arrangements, the landowners have developed a positive attitude towards wildlife animals and have stopped killing them indiscriminately. Nevertheless, due to the unresolved problem of human-wildlife conflicts and the thorny issue of property rights allocation (Norton-Griffiths, 2000) landowners still refer to the wildlife animals as "KWS animals". Moreover, the local communities' main interest has remained unchanged: still want to cultivate their land and do not desire to keep wildlife animals as an alternative (see Section 4.2.3).

Whether or not the co-management arrangements in Kenya are flexible enough to absorb shocks and deal with changes (e.g. in markets, organisational aspects, etc.) depends mainly on landowners' organizational capacity and the type of management arrangements adopted in different regions. With a 'delegated'⁶ type of co-management e.g. in Kimana (see Table 1), the landowners are able to adapt to changing conditions easily. For example, the Kimana landowners were able to reach a decision to lease their conservation area to a tour operator after failing to cope with the marketing burden which was bringing their revenues down. The landowners of Golini-Mwaluganje, on the other hand, had a 'co-operative' type of arrangement, which means that their decisions have to be approved by a conservationists-dominated board in order to be implemented. Landowners who are not well organized are also more predisposed to outside influence, particularly from local politicians. Such external influence also adversely affects how the management board reacts to changing conditions and therefore the success of the partnerships.

The levels of compliance with rules and the handling of conflicts within the conservation areas can be used to gauge how effective the governance of the wildlife resource under co-management is. However, analysis of compliance with rules in many of the areas where co-management has been adopted in Kenya are rare. It is therefore difficult to comment whether with the adoption of co-management governance of wildlife resources in the dispersal areas has been improved or otherwise.

4.2 Other Challenges Faced with Implementation of Co-management in Kenya

4.2.1 Losses of Biodiversity and Landowners' Sites of Socio-cultural Values

There are no empirical studies done in areas where the co-management approach has been adopted that can be relied on in assessing whether the increase of wildlife numbers, and particularly elephants, has had adverse effects on other forms of biodiversity. Although Mburu and Birner (2002) did not incorporate the costs of such degradation effects in their economic analysis, they report that the increased number of wildlife has resulted in losses of other kinds of biodiversity. This has particularly been experienced in the dispersal areas of Shimba Hills National Reserve where the considerable high population of elephants have

⁶ In 'delegated co-management' the government hands over authority to make decisions to user groups who are responsible for informing government of these decisions. In 'cooperative co-management' the government and user groups cooperate together as equal partners in decision making. The latter is viewed as the idealised type of co-management.

destroyed a number of endangered trees' and bushes' species in and around Mwaluganje Forest Reserve. In this same region, the landowners have also lost their shrine areas or *Kaya*⁷ forests, which have been local communities' sites of socio-cultural values for many years. Mburu (2002b) also documents that due the high density of wildlife in Kimana Sanctuary, the beautiful canopies of acacia trees, including important species such as *Acacia xanthoploea* and *A. abyssinica*, have greatly been degraded. Such environmental losses to the society, which can be viewed as negative external costs of wildlife management, cannot however be underrated when adopting and implementing the co-management approach.

4.2.2 Inbreeding and Hindering Free Movement of Big Mammals

Due to the fencing off (using electric fences) of the areas designated for wildlife conservation in order to separate them from the farms and communities' dwelling areas, the free movement of the big mammals has been restricted. Such a fencing strategy has, as expected, reduced the level of human-wildlife conflicts but has on the hand decreased the size of the grazing area that the elephants used to enjoy, forcing them to cloud in small, enclosed areas. In Golini-Mwaluganje sanctuary, for example, Kiiru (1995) reported that although the elephants could move freely between the sanctuary and Shimba Hills National Reserve, they could no longer reach other grazing areas bordering the sanctuary (such as Tsavo East National Park) as they used to before the creation of the co-management projects. This lack of free movement has resulted in the inbreeding of the elephants and a rapid increase of their population in the sanctuary. For instance, during the 1995 aerial census it was estimated that the density of elephant population in the sanctuary was about 2 elephants per km² (Kiiru, 1995). But within a span of 5 years this population density had risen tremendously to about 7 elephants per km² while that of adjacent Shimba Hills National Reserve stands at about 3 elephants per km² (Mburu, 2002). However, there are no studies done in this area to indicate the negative effects that this high population of wildlife could have on the environment and the society. Thus, it would be of paramount importance to assess the implications that inbreeding of wildlife and their lack of free movement could have on the future of the co-management projects.

⁷ The *Kaya* used to be the homesteads of the *Mijikenda* ethnic groups. Their location in dense forests and hill-tops was meant for avoiding attacks from raiding tribes. Today they are treated as shrines, which are of cultural and religious significance.

Mburu (2002) also reports another problem associated with the fencing strategy in co-management projects. He found that in the dispersal areas of Amboseli National Park fencing off the sanctuary area from important grazing areas and watering points of elephants has not only hindered free movement of the animals but has also resulted in diversion of crop destruction to new areas which never used to experience this menace before creation of the tourism projects. This negative impact arises since after creating the co-management projects the wildlife density and diversity has increased to the extent that it is difficult to contain the animals all the time in the fenced areas. As a result, crop destruction costs are also borne by landowners who are not living the project areas and therefore not involved in the co-management. This also demonstrates how complex investing in wildlife co-management can be for the participating stakeholders and how high levels of uncertainty with wildlife could lead to unanticipated production costs to the society.

4.2.3 Altering the Economic Interests of the Local Communities

In analyzing the livelihood strategies of the local communities live together with wildlife, Bourn and Blench (1999) found that pastoralism, and particularly the nomadic pastoralism of the Maasai and their indigenous knowledge, are compatible with wildlife conservation. However, the analysis of interests by Mburu (2002b) showed that these communities are still not comfortable with the presence of wildlife in their land. Even after introducing partnerships or co-management, the landowners do not view wildlife conservation as a sustainable way of earning a household income and thus the objective of making wildlife-based economic activities become the communities' 'second cattle' (Western, 1994) is still far from being realised. The communities' greatest desire has remained to have all the wildlife kept away or be fenced off of their land. The presence of wildlife is regarded as a threat to the farming activities which many of the landowners dependent on for their livelihood. The wildlife is also considered as a great threat to their security and as a hindrance to the performance of other economic activities. Thus wildlife conservation through co-management has failed to be recognized as a livelihood option by the landowners. This may most likely be emanating from the fact that wildlife co-management is financial viable to the landowners as has been argued in Section 4.1.1.

The desire for communities to have the wildlife fenced off their land may also be emanating from the distribution of the land, and wildlife ownership and management property rights as has been highlighted in Section 4.1.3. Moreover, this desire has been greatly cultivated by

the savings in guarding costs and losses from crops and livestock that the landowners have received from the fence installed in certain areas. The landowners' main interest is therefore to enhance farming activities in order to make full benefits out of the investments in electrical fencing. This obviously contrasts with the pro-conservation stakeholders' desire of making wildlife conservation and tourism an alternative form of land use to the farming practices of the local communities in order to enhance, through minimization of human-wildlife conflicts and costs, the co-existence of wildlife and humans. To an extent, the landowners' behaviour is also related to their perceptions that the best option for wildlife management in their local areas is to have the KWS play a relatively bigger role even in the event of adopting the co-management approach (Mburu, 2002).

5 Concluding remarks

This paper started by looking at the evolution of different strategies of wildlife management in Kenya, and generally in developing countries, in order to examine some of the factors or conditions that lead to emergence and subsequent adoption of the co-management approach. It is clear from the analysis carried out here that co-management has become popular among conservationists and development practitioners due to the shortcomings of both the centralised management and community-based approaches to fulfil the conflicting interests of diverse stakeholder groups. It has been emphasised that the major condition favouring adoption of the co-management approach in a developing country like Kenya is the provision of a favourable policy to the implementing agency and devolution of management roles to organized user groups which have the institutional capacity to co-manage wildlife resources. Other factors that are also important in this respect include land tenure conditions that allow community members to own private land as a group and accessibility to wildlife resources.

Although wildlife co-management in Kenya has been successful in terms of reduction of human-wildlife conflicts and securing increases in wildlife numbers, not all the interests of the stakeholders have been met. The landowners, in particular, have to contend with the fact that there are considerably high production costs and transaction costs involved in the management activities, making the co-management projects financially unprofitable. This may be the main reason why the local communities have not been able to change their economic interests and make wildlife management a major livelihood strategy which could

also form a substitute for the subsistence farming. Notwithstanding, the reduction of human-wildlife conflicts and hence the increase in crop and livestock produce, and security for human beings can be regarded as key incentives that play an important role in motivating long-term involvement of local communities in the partnerships or co-management projects.

A key challenge facing co-management initiatives in the country is the involvement heterogeneous community groups who lack the capacity to participate effectively. In addition, problems associated with the application of the fencing strategy, for example, increased inbreeding and prevention of free movement of large mammals, increased losses of other forms of plant and animal diversity, etc., will need to be addressed. These problems, including the loss of local communities' socio-cultural wealth, have to be regarded as externalities of the co-management or costs borne by the society which may adversely affect the success of this approach in the future. Thus, one important policy implication is that these negative impacts of the co-management approach and its failure to produce financial incentives will have to be dealt with by conservationists and policy makers in Kenya before this strategy of managing wildlife resources in the dispersal areas of protected areas becomes widespread in the country.

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- (lxi) This paper was presented at the Eighth Meeting of the Coalition Theory Network organised by the GREQAM, Aix-en-Provence, France, January 24-25, 2003
- (lxii) This paper was presented at the ENGIME Workshop on “Communication across Cultures in Multicultural Cities”, The Hague, November 7-8, 2002
- (lxiii) This paper was presented at the ENGIME Workshop on “Social dynamics and conflicts in multicultural cities”, Milan, March 20-21, 2003
- (lxiv) This paper was presented at the International Conference on “Theoretical Topics in Ecological Economics”, organised by the Abdus Salam International Centre for Theoretical Physics - ICTP, the Beijer International Institute of Ecological Economics, and Fondazione Eni Enrico Mattei – FEEM Trieste, February 10-21, 2003
- (lxv) This paper was presented at the EuroConference on “Auctions and Market Design: Theory, Evidence and Applications” organised by Fondazione Eni Enrico Mattei and sponsored by the EU, Milan, September 25-27, 2003
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