CHALLENGES AND OPPORTUNITIES IN COMMUNITY BASED DRYLAND NATURAL RESOURCES MANAGEMENT

A community member expressing her view on management of the community based organization

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Abstract

Community based natural resource management is often framed as alternative to top-down development planning. This paper describes the challenges and opportunities of community based natural resource management. The case implemented in a Kenyan dryland region under the Elangata Wuas Ecosystem Management Programme (EWEMP) funded by the Ford Foundation and the International Development Research Center (IDRC) of Canada demonstrates that community-based approaches can be effective ways of addressing some of the key problems facing rural people and especially those in drylands. Results obtained from individual study themes and micro-enterprises reveal noticeable progress in building community governance structures, ecotourism, consumptive and non-consumptive use of wildlife, sand harvesting, woodland management, non-timber forest products and women in development and their operative organs. Despite gains realized, community based natural resource management as a

construct is not easy and takes time and resources and relies heavily on community empowerment as a crucial ingredient to success and demands a co-ordinated multisectoral approach with negotiation at different levels from the community to government. However, when understood broadly, community based natural resource management can do more than simply organize interventions and make a substantial contribution to a broader rethinking of sustainable development, one that takes account of ways that rural people can act collectively and bring positive synergy to address poverty and natural resources degradation trap.

1.0 Introduction

The search for sustainable methods of land use goes back to the 1950s when planned community development trusts were introduced but later abandoned in the 1960s. In the late 1960s to early 1970s the concept of equity and participation re-emerged, to be buttressed a little later by concept and approaches based on integrated rural development projects. In the late 1980s, large international conservation organizations began to work closely with local organizations and communities to support creation of protected areas and strengthen the conservation of endangered ecosystems. These efforts led to much community- based integrated conservation and development of programmes, which attempted to provide local benefit through wildlife and ecosystem protection programmes.

Community Based Natural Resources Management (CBNRM) thus grew out of attempts to find new solutions for the failure of top-down approaches to conservation. The approach was based on the idea that communities residing adjacent to game reserves would derive benefits from wildlife in order to motivate them to look after the resource and reduce human-animal conflict. The difference with CBNRM is the starting point - with recognition that local communities must have direct control over the utilization and benefits of natural resources in order to value them and desire to utilize in a sustainable manner. This implies finding ways of increasing the participation of rural communities in resource management for it's a fact that rural communities have a more intimate knowledge of their localities than state agencies. They too have a greater stake in managing resources sustainably as their livelihoods depend on it. CBNRM thus as a construct emerges as a conservation and rural development strategy, involving community mobilization and organization, institutional development, comprehensive training, enterprise development, and monitoring of the natural resource base.

In Kenya, natural resources are managed under different statutes. The forests are gazetted and under management of Kenya forest service, unless found on private land. Land on the other hand is owned as either private or trust land or state land. The government is empowered by the Water Act to act as the custodian of the water resources in the country. As a result, all ownership and control of water is vested in government, subject to any user rights that may be granted or vested under common law. Each of the various types of resource management has been faced by challenges that have impacted on the status of the natural resources. The challengers are in terms of ownership, control and access to resources especially in environments where resources are claimed as state property by

government resource agencies: forestry, water, fisheries and other wildlife (Kituyi, 1990, Rutten, 1992).

Within drylands, the situation is further compounded by consecutive prolonged severe drought with detrimental consequences on livestock in the predominantly pastoral economies, which negatively impact on already impaired livelihood. These developments and related shortcomings triggered misgivings about the effectiveness of classical forest and wildlife management systems. This realization therefore, underpinned the recognition that sustainable natural resource management (SNRM) depend on application of suitable technologies and dispensation of rules and practices by institutions of effective governance structures that enable communities to participate in decision making and to derive socio-economic and cultural benefits from biodiversity.

2.0 The Case of Elangata Wuas Ecosystem Management Programme

The Elangata Wuas Ecosystem Management Programme (EWEMP) was initiated in 1992 in response to search for community-driven sustainable dryland natural resource options. At the time, wildlife around the area had progressively migrated from the national parks and game reserves into community ranches, following heavy wildlife build up and concomitant habitat degradation in the conservation areas. This posed heavy burdens to communities, as they were forced to shoulder heavy responsibility for conservation in addition to livestock rearing without benefiting from this lucrative resource.

In light of these scenarios, the Elangata Wuas Ecosystem Management Programme (EWEMP) was initiated in an attempt to broaden livelihood base and expand opportunities through income diversification. This was viewed along the broader research approach to rural poverty and environmental degradation. The activities were built on research for development interventions focusing on infusing traditional knowledge with modern scientific land management and resource use technologies, under promising “best bet” micro-enterprises. Projected activities were anticipated to be a bridge to reduce the enormous pressure exerted by the impact of population structure, changing policies on the rural economy and reduce pressure on natural resources.

Its premise laid on sustainable livelihood approach at the local level. Activities focused on small scale and micro-enterprises that use local resources and skills; that are equally accessible to women and that reduce the pressure on natural resources. It was envisaged that such interventions should stimulate desirable empowerment, competence building and capacity enhancement at the local level. Such a platform was also considered critical for promoting desirable economic interactions between the community and the outside world. This understanding further gained support on the assumption that such developments would over time, enable the community to take control and plan the management of their resources, lobby for recognition and support from government and development partners.

The general objective was to establish a community-driven approach to sustainable management of dryland renewable resources that balances conservation with development using a participatory bottom-up approach.

3.0 Programme area

Elangata Wuas and Kilonito locations lie in the Central Division of Kajiado District - Kenya, located at the Southern tip of Rift Valley province between latitude 1^0 $10^{'}$ and 3^0 $10^{'}$ South. It has an area of 21,105km^2 with the general topography characterized by plains and occasional volcanic hills and valleys (ASAL, 1990). The district is generally a rangeland, primarily semi-arid where other land uses like agriculture are minimal. The Maasai are the dominant inhabitants of the district and are largely semi- pastoralists with more than 70% of the population deriving its livelihood from livestock and its products. The Maasai have for a long time relied on livestock for their livelihood and also as a source of income by selling milk, hides and cattle for meat (GOK,1992).

The programme area occurs within ecological zone V and VI and receives an average annual precipitation of 600mm. Drought is a recurring and inevitable phenomenon in the area. The vegetation is dominated by *Acacia-Commiphora-Balanites* woodland formation and is generally well adapted to defoliation by grazing and browsing.

4.0 Intervention Pillars

4.1 Governance

A study on the development of a governance structures for a viable community based institution was mounted. The study attempted ways of working with the community to seek options that would equip men, women and the youth with capacity to undertake enterprises and activities for a decent livelihood and to demand and control enhanced benefits of development. The local institutions studied included women groups, age-set groups and the provincial administration (chiefs and their assistants). The study identified three key levels in the decision-making process i.e. avenues for participatory resource management: the household, village and community levels. It was noted that most crucial decisions affecting the community are made within the households. Consequently, the power of such decisions are weakened by levels of participating members and in some cases, by extended family members.

Consequently, a community based organization with programme planning committee, programme management committee and finance committee was operationalized with roles and mandate of each player defined and registered with the Ministry of Culture and Social Services and is evolving as a focal point in building sustainable local livelihood framework. Various positions so established were filled through elections. Training was undertaken for the programme management committee on organizational skills, book and record keeping, entrepreneurial skills and governance.

The community after about five years has now taken visible control of programme management and the programme management committee is acquiring a voice and has been involved in negotiation with the government on rights of the community in development, particularly in the use of natural resources. The programme endeavored to include the local government structures (County council, local chief and his assistant) as non-voting members of the Programme management committee. The goal was to forestall

creation of opposition to the market or state as many falsely argue that local resource rights are in opposition to claims of state resource agencies.

4.2 Development of Community-driven Eco-tourism Initiatives

Eco-tourism was established as a component of the programme with the aim of supporting the local community to generate income. The beautiful scenic features comprising hills that dot the Rift Valley floor, bird species, diverse wildlife and the rich culture among others were seen as opportunities for eco-tourism. Historical sites, nature trails, rocks and other attractive features in the programme area were identified and demarcated. The canopy of the wooded bush land dominated by *Acacia- Commiphora-Balanites* formation provides a beautiful site especially when viewed from the elevations of a base camp.

The micro enterprise began by awareness creation, capacity building and training. Educational workshops were held with community representatives to enlighten them on present schemes of wildlife utilization and eco-tourism that exist in other ranches in the country. Three nature trails were identified which incorporate wildlife and bird-life, rock reptiles (lizards, hyrax, rock pythons), ostrich, dik dik colonies, hare, kudus, Eland among others. Members were introduced to the concepts of wildlife utilization, benefits and constraints. Ecotourism facilities including restaurant, bar and conference facilities was built. This entails a campsite with a capacity of 32 people in 10 bandas and three staff quarters. Additionally a hall with a capacity of over 60 people is at the site with a fully-fledged kitchen. Wind and solar energy have been harnessed to provide efficient and environmentally friendly power source both in direct and alternating currents at the camp.

The programme facilitated the community to form an Eco-tourism Developed Group with constitution and operational rules and registered with the Department of Culture. The group is charged with the responsibility of coordinating all eco-tourism activities in the area. Members were trained on handling resident and non-resident visitors and campers. The programme trained staff-tour guides and produced a map of the area with blocks showing touristic features.

4.3 Consumptive and Non-consumptive Use of Wildlife

The ecology of Elangata Wuas characterized by sparse human settlement favors co-habitation of game and livestock. This allows wildlife movements with little restriction. However, Increase in game population has in the recent past, caused pressure on existing water resources and grazing areas, which has in turn caused degradation of vegetation cover.

The programme established a record of animal census covering a period of four years with information on their periodic dispersal in the region. Game scouts were employed by the programme and trained on game census techniques with exposure to census equipment and field practical. The programme also undertook research and developed a low technology ostrich husbandry. Under this initiative, ostriches were herded together with sheep and goats as there is minimum competition between the two. This has

impressed experts who have recommended the replication of the technology in other areas.

Additionally, a breeding stock of Guinea fowl was established and locals trained on raising them together with the traditional poultry. Currently, game census methodologies have been mechanized and the community can now carry out census through the community scouts when equipments are provided. The work recognized that wildlife management and conservation depends on information on their numbers, distribution and dynamics.

4.4 Use of Sand Resources

Sand harvesting along river Toroka in Elangata Wuas had the potential to become an alternative source of income. However, since a considerable amount of water is retained in the sand, controversies surrounded sand mining in the region. On this basis, it was imperative to carry out a survey to avail baseline information to aid in decision making. Inventory of sand and water resources was done through identifying, setting out and mapping water points. A summary of thickness of sand bed along river Toroka was documented and areas where sand could be sustainable harvested mapped.

Feasibility study on harvesting established that five billions tones of sand can be harvested sustainably annually from the area. The cost is about 95 Kenya shillings per ton (1.5 US$). Environmental impact assessment of the mining confirmed the environmental viability of the activity and was submitted to National Environmental Management Authority (NEMA) for approval. An institution for managing and harvesting sand known as The Sustainable Sand Harvesting Management Unit was formed to regulate and guide the business.

Sand mining has been successful both at the individual and community level. In the recent past, more than two million Kenya shillings (USD 30,000) was made from the micro-enterprise in the area with collaboration from Magadi Soda Company and the proceeds used to facilitate land demarcation process and pay for title deeds acquisition.

4.5 Woodland Management

The community is becoming increasingly vulnerable to drought, which systematically undermine the viability of pastoral-based livelihood. Community members are as a result turning to commercialization of wood, which is likely to cause degradation. The situation is likely to be compounded by the ongoing exercise to sub-divide group ranches in an area that is already ecologically fragile.

This possible vicious degradation cycle required immediate action to arrest and reverse. Permanent sample plots were established for woodland assessment with measurements taken on trees, saplings and seedlings within 0.02ha plots replicated ten times in different stations. Species composition and abundance, horizontal structure and species diversity were derived. Assessment of species preferred for quality charcoal production, source of labour for charcoal production and major problems experienced in biomass production micro-enterprise unit were conducted.

Analysis of the data on woodland species composition and abundance reveal that *Acacia drepanalobium* and *Balanites aegyptiaca* dominate Elangata Wuas. Based on this information among others, a charcoal production unit was formed and members advised on the appropriate tree species and sizes to target for charcoal production and threshold levels that would ensure sustainability. Delineation of felling blocks/coupes in the members' ranches for monthly and annual off-take followed low impact harvesting plans under management blocks was undertaken based on 15-20 year rotation cycle. Management plan proposal for the woodland was done and forwarded to National Environmental Management Authority (NEMA). An Environmental Impact Assessment for wood and non-wood utilization was done and awaits NEMA's approval.

To operate fully as an enterprise, Elangata Wuas Charcoal Management Association was established with 52 registered members. This association is charged with recruiting members, formulating rules, enforcing quality and quantity assurance, marketing of charcoal, financial management and environmental conservation. The members of the Sustainable Woodland Management Unit concluded discussions with charcoal dealers and transporters on contractual terms of agreement between them and laid out ground rules for sustainable production and business.

Impact remains to be fully felt as the wood land management plan has not been fully implemented. However, the interest of the community in woodland and its resources has been aroused. It is only after NEMA's approval of the project using EIA report that the relevant authorities at the district level will be able to sign a working document legitimizing the production and sale of charcoal by the sustainable woodland management unit.

4.6 Non Timber Forest Products

Extraction, processing and trade in non timber forest products (NTFPs) have the potential for improving the livelihood of low-income farmers and pastoralists. The measurable economic value and services of NTFPs constitute an important reason for preserving forests from destructive uses and or conversion to other land uses.

Traditional medicine is popular in the area and by use of research techniques, over 268 species of medicinal plants have so far been verified to be effective and safe by gathering information on their preparation, route of administration, dosage and the required additives. Screening of the most widely used species was done for important secondary metabolites such as alkaloids, tannins, flavonoids, flavones among others by use of thin layer chromatography and the results documented by the programme. Also, phyto-chemistry of more than 15 locally used plants has been established. Selected herbalists have been trained on standard methods of processing herbal medicine. Seminars were organized to equip the herbalists with knowledge of standard and hygienic methods of processing the medicines.

The programme also introduced commercial beekeeping using the Kenya top bar hives and later the langstroth hives to land owners. Members were trained on hive and colony

management, harvesting methods, honey cleaning and processing. Bee keeping has progressed, and the programme has supplied over 250 hives distributed among ten women groups.

4.7 Women in Development

The programme over the years maintained a consistent support for women activities. This were meant to tap the skills the women already had in creating unique and authentic pieces using new materials and shifting away from the mundane bead works that already exists in the flooded market and to teach them new skills through demonstration. These were meant to improve existing skills by emphasizing on creativity and quality to ensure production of more marketable products that can compete in the flooded markets and to expand the knowledge of bead craft through exchange of ideas. Some of the products produced are exhibited in local art scenes.

Drip irrigation was initiated at a base camp provided with water for irrigating vegetables grown by women. The development of the drip irrigation has enabled the women to grow vegetables and fruits successfully and gained additional revenue apart from improving food security and health status of the populace.

5.0 Challenges in Community Based Natural Resource Management

Reluctance to change is perhaps one of the greatest challenges to CBNRM. Most CBNRM constructs attested to government line ministries holding on to the classical top-down planning and remain reluctant to consider or at least test the promising approach. For instance, the research team undertook a thorough analysis of the existing woodlands towards sustainable charcoal production. On presentation to the District Development Committee (DDC) for possible licensing of a sustainable charcoal production regime, a decision could not be made at that level. However, the argument of the team will likely get a boost with the new Forest Act 2005 that creates avenues for community involvement. But does it have to come from the top?

With the introduction of micro-enterprises and communities establishing their own rules and regulations to govern sustainable resources use, there are enormous weaknesses over power at the dispensation of communities to enforce the rules and regulations. More robust procedures and modalities are required to deal with, especially defiance. One route the programme is currently pursuing is avenues of entering into memorandum of understanding with local authority to give “biting” power to the rules and regulations on natural resource management so established by community members. This will for instance give game scouts and community forest guards powers to arrest and subsequently legal actions taken through the justice systems.

Management and leadership functions remain mostly closely intertwined within most CBNRM constructs. This creates confusion over what the community does, and the role of the project manager or facilitator. For instance, should the project manager hand over when the programme or project winds up? And if so what is he/she suppose to hand over and to who?

There is a notion that community based development initiatives are only about micro-level interventions a notion held by even a number of CBNRM proponents. A more robust notion could better highlight its potential and contribute to restructuring broader development practices, power relations and distribution of economic benefits at the macro-level. Such a stronger and nuanced concept of community is, therefore, an essential element of more effective practice in development work. The micro- level stereotypes inhibit the potential in promoting rural livelihood.

Instituting relationship between government agencies and rural institutions as catalyst for success is quite elusive during CBNRM constructs development. The question is how CBNRM constructs can be developed inside instead of outside government. In the presence of complex relationships that involve divergent parties. Moreover, many CBNRM initiatives continue to be relegated to the informal sector thereby inhibiting participation of local private and formal sectors.

Communities in drylands and a number of sub-Saharan countries represent fragile ecosystems that need continued effort to be sustained. This in essence, implies that programs/ projects need longer periods of support to guarantee sustenance. Thus, this often discourage potential supporters or those who move in for shorter periods and end up facing challenges with sustaining outputs that reflect often in post-evaluations.

Communities rightly feel conservation should justify its existence within their land areas and have renewed interest in benefit sharing mechanism(s) both within CBNRM constructs, and government programmes. Although proponents claim it's a clear challenge to even the classical natural resource management paradigms, CBNRM constructs are not spared. It still remains a challenge and can probably be worked out through "learning-by-doing" to device modalities to equally distribute benefits and specifically guarantee percolation of the same to majority if not all facets of the community with specific emphasize on the lower carder.

High poverty levels that force people to over-exploit the natural resources so as to provide food to their families.

Local community change agencies are commonly a target of interference from politicians and the few economically powerful at the expense of the majority. It is not easy to be savvy enough to understand the different interests that exist in local communities and avoid being hijacked by the agendas of the rich and the powerful even among community representatives that sit in elective positions. This easily leads to activities leaving out, neglecting or forgetting women, youths and the vulnerable.

Organization of local communities into legally recognized entities to participate in collaborative management with other stakeholders like government and the private sector is not easy.

6.0 Opportunities

In CBNRM, communities are considered development actors themselves, with very different perceptions and motivations from external interveners, but who nevertheless have significant, albeit unrecognized capacities. It concomitantly lays much greater emphasis on the perspectives of the local people and targets the infusion of indigenous (or traditional) knowledge in informing decision, policy and scientific understanding of natural resources and guide local interventions in environmental management. Therefore, in situations where entire communities or villages do not have secure property rights, such insecurities are better resolved through community based collective action than land reform.

Community based natural resource management is an effective vehicle for tapping positive synergy to address poverty and natural resources degradation trap. When supported with appropriate policies and incentives it offers a viable option in generating employment in the rural sector, improving the conditions of women, youth and the poor, and reducing the pressure on natural resources. The synergy expands and improves marketing of primary products to small towns and urban areas, for which a particular area has comparative advantage. Indeed, both micro and macro-enterprises if dully supported have great potential in creating small towns and absorbing the surplus labour force in rural communities thereby reducing rural to urban exodus.

CBNRM if well structured, can develop ties between rural communities and the state. Structures so developed, work out a repertoire of practices and institutions that can make sense both to villagers and to the government officials, enabling cooperation even where objectives may differ.

7.0 Conclusion

The sticking feature of this case is how hard the project staff (Elangata Wuas Ecosystem Management Programme), rural people, local universities, donor programme officers (especially International Development Research Centre and the Ford Foundation) and even government officials worked to achieve the results. This is not in pursuit of recognition for hard work and dedication but, points to a fundamental characteristic of CBNRM work; if communities are the outcome of ongoing work, it must be recognized that when people stop working, gains made will be reversed. What it does suggest is that communities are often fragile and unstable. Thus, when projects lose their funding, or when rural people lose commitment, momentum gained may decline drastically. Therefore, a central concern should be on actions necessary to ensure communities endure even without the input of project funding.

From our experience, CBNRM facilitate collective action. Although activities covered in case studies may vary, some of the important actions include managing resources, holding and exercising property rights, becoming vehicle for multiple development activities and other types of collective action, changing power relations and inequalities,

and becoming a voice for local communities so that they can communicate to project staff, governments and other actors.

Overall, the close relationship between state administration and the community (despite the weaknesses) belies images of rural communities that are separate from or in simple opposition to local government. However, government agencies and NGO's have to change their policies and the way they do business to sincerely support communities' efforts. That is particularly true when it comes to policies and practices that affect communities' access to land, forest, grasslands and governance.

Therefore, understood broadly, CBNRM can make a substantial contribution to a broader rethinking of sustainable development, one that takes account of ways that rural people can act collectively.

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Reference:

ASAL Programme Kajiado 1990. Kajiado District Atlas. Ministry of Reclamation and Development of Arid, Semi-Arid Areas and Wastelands, Kajiado. Kenya Litho, Nairobi.

Government of Kenya**.** 1992. Environmental Action plan for Arid and Semi Arid Areas. Government Printer. Nairobi.

Kituyi, M., 1990. Becoming Kenyan: Socio-Economic Transformation of the Pastoral Maasai. ACTS Press, Nairobi.

Rutten, M. M. E. M. 1992. Selling wealth to buy poverty: the process of the individualization of landownership among the Maasai pastoralists of Kajiado district, Kenya, 1890-1990. Verlag breitenbach publishers, Saarbrücken, Germany.