

# SHARING EXPERIENCES AND LEARNING LESSONS IN COMMUNITY BASED CONSERVATION INITIATIVES

## THE INDIAN EXPERIENCE

### Introduction

This report summarizes personal experiences gathered during a two-week visit (7<sup>th</sup> and 22<sup>nd</sup> December 2003) to three states of India: Karnataka, Tamil Nadu and Kerala. The visit aimed at sharing community conservation experiences from a developing nations perspective on challenging facing the conservation of their very rich biodiversity taking into account local community needs to benefit from biodiversity via improved rural economies. Both Kenya and India share similar challenges: poverty, governance, HIV AIDs, and serious losses due to wildlife damage without appropriate compensation yet the two countries continue to host a significant global heritage: plants, animals and habitats critical for the amelioration of global climate change e.g. Forests.

The visit was timely for the Biodiversity Conservation Programme (BCP) having been in operation for three years supporting community conservation and development initiatives: awareness creation, enterprise development, human and biodiversity conflict mitigation and in reducing threats to biodiversity. This unique BCP focus to taking action for biodiversity conservation is highly welcome by local communities and conservation Societies e.g. Nature Kenya that work with local communities to create and enhance the capacity of site support groups to conserve species and habitats as they derive direct benefits from nature-based enterprises e.g. bee-keeping, sericulture, kitchen gardening and ecotourism among others. A review of BCP had indicated significant success but also identified the need to enhance interaction with local communities through innovative approaches. The visit to India was an effort for BCP to learn from the rest of the world innovative state-of-the-art tools and technologies that can be adapted to the Kenya situation for the benefit of Kenya's people and biodiversity. Experiences gained will in doubt be useful in re-orienting the remaining and future phases of the BCP enhancing focus, delivery and the generation of desired biodiversity impacts.

The lessons learnt will be useful in service delivery to the beneficiaries while innovative measures will be employed to reduce cost and to enhance projects sustainability. BCP will also have initiated international collaboration with other partners in conservation.

### Evolution of Community Based Natural Resource Conservation Initiatives

#### *International context*

Community Based natural resource management (CBNRM) is a system that attempts at allocating all or a proportion of ownership, rights and control over natural resources to a section or group of local communities. CBNRM is aimed at enhancing the livelihoods of poor people in remote and marginal areas, through empowerment, improved governance, and increased income impacts through tourism and natural resource management initiatives. The best

known examples of CBNRM initiatives are Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe and the Luangwa Integrated Rural Development Project (LIRD) and Administrative Management Design (ADMAD) for Game Management Areas, both in Zambia. Other areas where success has been reported include: South and South Asia where CBNRM incorporates wider development issues rather than focusing on conservation-led initiatives; South Africa, on experimental basis focus on conservation-led Community Based Wildlife Management without integrating wildlife management in to the management of other natural resources (DIFID Livestock & Wildlife Advisory Group, Wildlife & Poverty Study, 2002); In Kenya, Nature Kenya is piloting participatory forest management in Arabuko-sokoke Forest and the Site Support Group (SSG) is showing promise for the establishment of community based institutions for participatory natural resource management in Kenya.

David Western and Michael Wright (1994) have in their book *Natural Connections* given a detailed account of the evolution of Community-Based Conservation and even definition of Community-based conservation. CBNRM attempts to: reverse top-bottom, center-driven conservation by focusing on the people who bear the cost of conservation; and includes natural resources or biodiversity protection, by, for, and with the local community. The studies by Western and Wright (1994) indicate that community based conservation will be realized if the rights of the local communities and landowners to use resources are recognized. Key ingredients for success include: responsibility to society and appropriate management capacity; and devolving authority to local communities to use resources as anything less could lead to even greater environmental degradation. However, Western and Wright caution on the communities' ability to resolve resource conflicts and slow environmental degradation with more success than central authorities.

#### **What triggered CBCIs?**

Human population coupled with technological innovation resulted in major developments, which put a lot of pressure on the environment necessitating the critical need for policies and legislations to regulate natural resources and protection to be established. However the laws and legislations did not stop commercialism and local interests, which caused serious environmental destruction. Multinational organizations accelerated destruction through unsustainable unregulated extraction e.g. logging as poverty among local communities increased. The strict laws prohibiting local communities access and use of natural resources resulted to serious conflicts. As a result, the world soon recognized the need to involve local communities but most projects developed remain too small to make significant impact in rural livelihoods. In Brazil the Yanomami and in Australia, the Aboriginals of (Berger, 1979; Miller 1993 quoted in Western and Michael Wright 1994) are increasingly winning recognition as significant players in biodiversity conservation.

The need to promote development and conservation as interdependent units was underscored by the international community at the Earth Summit held in Rio de Janeiro, in 1992 that discussed the state of the environment as an integral part of development.

The concept of sustainable development was re-emphasized while call for whaling and ivory trade bans gained strength and access and benefit sharing issues were addressed through the agenda well established in the Convention on Biological Diversity that emerged from the Rio Global Meeting. This however caused a deep tension between the rich and poor nations for it was interpreted to mean regulation and control of access of resources and the sharing of the costs accruing from conservation of biological diversity. Since then, local communities have continued to gain ground in conservation but they continue to bear the costs for conserving species and habitats for global benefits. The parties of the World Summit have failed to honour their much needed commitment and they continue to impose conditionalities on poor governments if they are to benefit from development and conservation resources. Support to local communities has continued to low and highly erratic and not making much change in rural livelihoods leading to ever continuing loss of species and associated habitats. The BCP and resources available are a major addition to the small pot that exists for awareness, income generating initiatives e.g. beekeeping, sericulture and *eco-tourism among others*. *Other issues e.g. Green economics, intergenerational equity, debt for nature swaps, green consumerism and people based conservation require fairly huge resources which must become available through massive transfer of funds from the north to the south*. A bottom-up approach is critical and examples can be found from the BirdLife International Partnership whose global agenda is developed by country partners Site Support Groups.

#### **Success or failure?**

Community based conservation has been dogged by problems of definition as meaning to terms like community, conservation and development remain a subject for discussion. The involvement of local communities in conservation remains the only hope to safeguard ecological integrity. Many challenges though lay ahead such as breakdown of traditional societies, population and commercial pressures, nepotism, corruption, lack of awareness, knowledge, and skills among a myriad of problems.

#### **The Kenya context of community conservation successes or failure**

Wildlife conservation in Kenya has a long history with the first game reserve and legislation being introduced in 1898. The first Park and game reserve were later established in 1948 (Barrow, Gichohi and Infield 2000). Eight per cent of Kenya's land is under conservation with twenty six national parks and thirty national reserves. This area is considered insufficient for the survival of the country's biodiversity and currently 70% of wildlife is found outside protected areas (KWS, 1994).

Conservation areas have not reduced biodiversity loss as habitat quality has continued to decline due to ever increasing human population leading to unsustainable extraction of resources. Others include: unplanned development; ineffective policies and poor governance. Corridors have been taken over by settlements and migratory routes no longer exist, instead, wildlife-human have intensified and unfortunately wildlife is on the losing end. The loss of wildlife habitats and encroachment of traditional wildlife areas by people has created a recipe for human/wildlife conflict culminating in further loss of biodiversity including occasional loss of human life and

frequent loss of property and means of livelihoods. The Kenya government has realized the need to involve local communities but lack a tested methodology to do so and the appropriate legislation and policy is either weak or not existing. However, some effort has gone into trying to develop show cases to convince the government that community wildlife conservation is possible: Kenya Wildlife Service Community Conservation Programme of 1991; African Wildlife Foundation (AWF) Tsavo Community Conservation Project; Nature Kenya Site Support Group approach; USAID-COBRA (Conservation of Biodiverse Resource areas) USAID-CORE (Conservation of Resources through Enterprise); USAID-FORREMS; the Biodiversity Conservation Programme (BCP) setup in 2000 to specifically offer financial and technical support to communities in areas of biodiversity importance among others have registered some success.

In the mid 1990s KWS commissioned studies, consultancies and task forces to address issues of wildlife management and conservation. Some of these studies e.g. Utilization Study paved way for utilization guidelines culminating in communities participating in game farming and selective game cropping. Group ranches and individuals put up ostrich farms, while use right was granted to ranchers after a game count. Overall, the studies indicated that, given an economic incentive local communities are willing to conserve (KWS Annual report 1996). Other studies on land use, wildlife utilization, tourism and the ideal legal framework for wildlife conservation were done. Unfortunately, KWS continued to lack a community friendly conservation approach, legislation and attitude since a protectionist approach still lingers. A Wildlife policy has been developed but is stalled at cabinet quarters. KWS also developed the Wildlife Policy Framework on Community Conservation and Management Outside Parks and Reserves.

#### *Evolution of BCP*

The Biodiversity Conservation Programme (BCP) funded under the European Union was created by the Kenya government to provide financial and technical support to communities to participate in biodiversity conservation in and around key biodiversity areas (KBAs). The Programme, which is a five-year funding mechanism was set up in 2000 and is expected to end by September 2006. The Programme will contribute to reducing the human pressure and anarchic land use practices, which are currently putting natural resources to unsustainable use. The funding covers: biodiversity conservation education and awareness; conservation based revenue generating projects; initiatives that reduce conflict between human and biodiversity interests and initiatives that reduce threats to biodiversity conservation. The Programme is integrated within and complementary to the existing CDTF, established jointly by the European Commission and the Kenya government on 26<sup>th</sup> March 1996 under legal notice No. 303 of the Exchequer and Audit Act of the Government of Kenya, a legal framework for the Community Development Programme (CDP). Conservation initiatives were originally integrated in CDP through the Community Wildlife Initiative (CWI). The implementation of the initiative within the first phase of CDP failed as most effort went towards provision of the social infrastructure. CDP only managed to implement less than 20% of the CWI and this culminated in the creation of BCP whose initial recommendation was to be formed a Trust Fund (The Biodiversity Trust Fund – BIOTF), However, due to the bureaucracy involved in its formation, the idea was abandoned and the

Programme was housed in CDTF. The Programme is also managed by the existing Board of Trustees of CDTF drawn from the representatives of the Government, the European Commission (EC) and NGOs.

#### *Why BCP?*

The Biodiversity Conservation Programme (BCP) was established after a realization that loss in biodiversity was on the increase in spite of the important role biodiversity played in the economic and political stability of the country. BCP was created to supplement and complement NGO and government effort by providing a service towards biodiversity conservation where financial resources would be allocated directly to the beneficiaries rather than their intermediaries. The continued conversion of rich ecosystems into farmlands and settlements and the unsustainable utilization of natural resources in most parts of the country continue to offer a challenge to the government and others involved in conservation. Other challenges include fragmentation of the policy and institutional environment, reluctant involvement of crucial stakeholders in the implementation of conservation policies, as well as the lack of criteria for conservation based on biological resources when their conservation should be high on the agenda. Availing resources directly to CBOs provides an opportunity for capacity building however, BCP has realized that strategic partners e.g. Nature Kenya play a critical role in the initial CBO strategic guidance and capacity building. The BCP promotes pro-active and innovative approaches to biodiversity management.

#### *Achievements realized to date*

The BCP mid-term review of March 2003, at about half of its lifetime indicated that BCP remained focused addressing the objectives for which it was established. Thus the BCP: identified conservation challenges; supported some 29 projects distributed across the country on conflict management, enterprise development, education and awareness creation and initiatives addressing threat management; has endeared itself to the general public as an effective tool for channeling conservation related funds to Kenyans committing some Kshs. 279 million representing 91% of all development funds of which some Kshs. 68million has been disbursed representing 34% of the funds; the beneficiaries have witnessed a new form of development as opposed to the past, physical development in their areas. More importantly the CBOs have learned how the funds released by BCP are spent based on an agreed financing agreement. Although too early to tell a story, the review indicated that Community attitude towards conservation is slowly changing with the creation of BCP supported conservancies.

The support of conservation areas has led to other communities embracing conservation by accepting activities that are in harmony with conservation hence increasing constituency for wildlife; helping to address poverty reduction as a key objective of BCP's supported projects. The BCP expects the local people to contribute to conservation projects as a means to enhancing ownership and reducing dependency. This is excellent and the right way to look at conservation problems and solutions but unfortunately, the world itself is not committed to conservation meaning that local communities continue to bear more costs on biodiversity conservation. There is clear need to recognize and compensate the full cost of conserving biodiversity at a local setting. The BCP funding is very appreciated by local communities but like many funding agencies e.g. GEF, the support is too small to make significant impacts to

biodiversity conservation in Kenya. There is critical need for the global community to re-look global budgets and finances to ensure massive flow of funds from the west and north to the South. The beneficiaries are expected to develop a sustainability plan on how they will manage the projects once the BCP support comes to an end but it should also be noted that there are not many examples of real sustainable projects.

*What has contributed to success of BCP?*

The success of the Programme is attributed to its small size that is focused owing to high level of professional approach and objectivity in analysis of problems. The success is also attributed to the Programme formulation. The process of creating BCP was interactive through a series of workshops where stakeholders were involved in problem identification. The interactive process ensured that BCP was structured to deliver with limited administrative costs compared to other donor institutions. BCP has been able to deliver service with a staff of 7 people and though they might be overstretched, they have been able to deliver at reduced transaction, institutional and management cost of about 25% of the total Programme cost. The rest 75% of the funds are used for direct investment on environmental conservation. The success of BCP is also attributed to its marketing approach. The Programme has received up to 400 proposals attributed to the use of brochures, workshops and regional meetings where all stakeholders were involved. The use of the existing CDTF institutional framework and administrative system also has reduced costs that BCP would have incurred if it was an autonomous institution. The main problem of linking BCP to CDTF is that CDTF uses styles that are not applicable to conservation projects. The grant application procedure is extremely confusing, matching conservation objectives and activities to the CDTF standard application form is not straightforward, there is too much text and planning prior to projects getting approved. The too much fairly rigid focus on CBOs means that some very young CBOs get swamped with too much money for their capacity. BCP must reconsider this to give room for strategic partners to help CBOs develop appropriate capacity to deal with BCP funding.

Success at the project level is attributed to:

- Projects are target specific: biodiversity conservation awareness, capacity building in environmental conservation and management, reduction of conflict between people and biodiversity and interventions that reduce threats to biodiversity.
- Projects adopt an ecosystem approach: areas lying in certain high value ecosystems receive priority considerations and projects must address specific known problems.
- Projects are demand driven: reflect community needs.
- Projects adopt an integrated approach
- Process of project identification, development and implementation is highly participatory and include all stakeholders at all levels of Project Cycle Management.
- Project implementation highly encourages community empowerment through decentralized decision-making process. All projects have an elected Project Implementation Committee (PIC) responsible for day to day management of the project and decision making on matters of project finances and accounting.
- BCP uses a project screening process that ensures only high quality projects are accepted.

- Field appraisal to verify facts on the ground: Project Management Unit (PMU) to ensure all issues relating to BCP objectives are addressed and get consensus on suitability of the proposal.
- Project Steering Committee (PSC) appraisal
- Technical Advisory Committee (TAC) appraisal. This committee comprising of highly experienced individuals on conservation and related entrepreneurship advise and recommend on which proposals to be funded.
- Board of Trustees (BoT) approval. The board comprising of The National Authorizing Officer (NAO) Director Kenya Wildlife Service (KWS), NGO Council, Kenya World Wild Forum (KWWF) and European Union (EU) approves projects, which meet all the criteria that have been set.
- The FA spells out the mandate of both CDTF as the financier on behalf of the government and the beneficiaries.

*Challenges in implementation:*

- Incompatibility between Biodiversity Conservation Programme (BCP) and Community Development Programme (CDP) owing to differences in scope. This must be re-thought to ensure that biodiversity projects are not taken through the same process as pure development projects.
- Lack of capacity by communities to manage complex conservation initiatives. The problem is being addressed by use of strategic partners to provide technical backstopping or integrating technical government departments in community projects.
- BCP technical staff lacks adequate time to fully interact with communities to understand their problems in depth and provide answers. However, too much time with local communities might result to micro-management. The BCP needs to establish a relationship with strategic partners to ensure that programme objectives are met without overwhelming BCP staff with too much involvement in project implementation. An annual visit to each project by BCP staff might be the best strategy.
- Some projects lack accountability and transparency, which occasionally delay implementation when such projects are audited. Before CBOs are given resources there must be prove of financial capacity and reporting otherwise strategic partners become handy in ensuring that CBOs receive on job training and capacity to manage their projects. Some strategic partners have shown that this can work.
- Diversity in donor conditions: Some communities had previously benefited from other donors whose conditions are less stringent and are at times uncooperative after signing the financing agreement. The problem is that many development agencies usually do not expect accountability since the projects are simple and very straightforward e.g. piping water, building a school etc very different from difficult unique initiatives such development of eco-tourism facilities where even the definition itself is neither reconciled nor understood. BCP needs to take these issues into account and try to look at conservation projects as such but not at the same footing with pure CDTF projects which are usually simple and obvious to local communities. More over, pure development projects derive 100% benefits to local people whereas conservation projects are an investment of human effort for a potential future benefit.

- Environment conservation issues are complex lacking a clear approach but some lessons are noted:
- With capacity building, conservation initiatives can work through community support
- Rural communities hold important indigenous knowledge that could contribute to enhanced biodiversity conservation
- Local communities have enormous potential for conservation when well organized and focused but this takes time before fruits can be realized
- Significant population of wildlife (plants and animals) resides outside the protected areas hence the need for local communities to be involved and benefit from these natural resources
- Wildlife affects community livelihoods negatively causing serious losses and conflicts hence negative attitude on communities towards conservation
- Conservation development efforts have been hampered through skewed allocation of resources with most funds supporting administrative costs and little on conservation efforts. BCP allocates 25% to cover administrative costs while 75% goes towards development issues. Some strategic partners have argued that the 10% allocation by BCP needs to be increased to 15% for effective project administration both to NGOs and CBOs.
- There is potential for eco-tourism exploitation outside the protected areas
- Strategic partners are crucial to the success of conservation projects especially due to their complexity
- Most communities are already sensitized on matters of conservation but their capacity to act is still low
- There are many conservation NGOs and CBOs formed to exploit donor funds which explains low level of conservation
- Communities living in close proximity to conservation areas are very poor probably because of losses attributable to wildlife damage
- Protected areas are being converted into ecological islands through loss of migratory routes and wildlife corridors
- Conservation based enterprises take long to realize returns
- Projects such as fences which bring quick return receive full support by communities as opposed to conservation projects whose return take long to realize
- Communities are willing to contribute labour and materials to projects as long as quick benefits can be seen
- Though fences offer a quick fix to social and economic challenges which face communities living in high wildlife conflict areas, their long term ecological impacts are not fully understood.

#### Lessons on project implementation and monitoring by BCP

- It is important for BCP to receive a detailed work plan from the project beneficiaries before the project commences which has to be adhered to without exception taking into account that work plans should not be rigid documents.
- Once a project has been approved, project specifications have to be adhered to in total and even where it is

important that the project scope be changed; correct specifications have to be used

- While communities should be allowed some flexibility, care should be taken to avoid costly experiments. Flexibility should be allowed where communities would not commit BCP into irreversible actions.
- Some community members can be ungrateful after receiving financial and technical support especially when their actions are questioned.
- Contractors can be dishonest in matters of products quality especially if specifications are vague
- Conflicts within communities can cause serious delays in projects and even discontinuation
- There are legal and policy issues which if not properly addressed can affect the project such as water abstraction permits, authority to operate in government gazetted forests
- Success or failure of development projects is dependent on effective coordination. Where many stakeholders are involved, with no project management staff, projects are slowed down as opposed to where project staff exists.

#### *The Indian context*

Over the years, rural communities in India have relied on natural resources (Ashish, K. et al 2000). This dependence has led to development of intricate and diverse practices for managing natural resources. This is based on self restraint, and abstinence, based on aesthetic, religious, practical consideration and beliefs.

#### *What triggered?*

In 1934 the Indian National Parks Act was passed culminating in gazettelement of Corbett as the first part in 1935. In 1972, the Wildlife (Protection) Act consolidating existing wildlife laws was enacted allowing establishment of protected areas. This act described as the most comprehensive act on biodiversity conservation since the attainment of independence incorporates the National Parks, Sanctuaries and Closed Areas. Like in Kenya, National Parks in India are strictly protected, allowing no human activities except those in the interest of wildlife. In Sanctuaries, traditional resource collection and land based production activities are allowed. While strict protectionist approach has contained destructive commercial and industrial forces likely to impact negatively on the ecosystem and people, it has alienated communities living around these protected areas. Review on wildlife policy has continued to take place recommending development of skills and knowledge for conservation, rehabilitation of people displaced from protected areas, involvement of NGOs, citizen groups and village institutions such as forest panchayats and gram sabha in development activities. Despite efforts to provide policy framework, on biodiversity conservation, degradation of biological resources has intensified while government/community conflicts inside and around protected areas has heightened.

These issues have led to government taking some initiatives of involving local communities in conservation. The best demonstrated of these initiatives include: the Joint Forest Management (JFM); and eco-development approaches. The latter is based on the 1980 World Conservation Strategy proposed by World Conservation Union (IUCN), United Nations Environmental Programme (UNEP) and the World Wide Fund Union (IUCN), which

emphasized the importance of alleviating rural poverty as a component of conservation planning (Ashish et. Al., 2000). Recently, eco-development proposals have involved a broader consultation between NGOs and local community, which was previously missing. However, this has not addressed the root causes of conflicts in and around India's protected areas due to the following challenges:

- The management still excludes people through misconception that people's pressure should be reduced.
- People are not involved in the management of protected areas but rather involved in eco-development activities.
- The existing laws are restrictive to fully participatory approach.
- There is little regard for existing community structures and communities are forced to structures pre-determined by the government.
- The concept of concentrating development around protected areas has not been properly tested and there is a feeling that it could itself bring more pressure to protected areas by attracting more people.

Other attempt to incorporate local communities into conservation is through creation of Biosphere Reserves (BRs). The concept launched by UNESCO in the early 1970s was aimed at conserving and developing a knowledge base about the biodiversity within an area with emphasis on humans as an integral part of that ecosystem and that local communities should be actively involved in conservation programmes. The practical translation of this has been wanting. A study by the Indian Institute of Science revealed that management of established BRs is based on protected area concept. There is little attempt also to reconcile development activities with conservation or involve local communities in management in order to realize the objectives for which they were set. BRs lack legal status as they are not recognized by the Wildlife Planning Act or other laws.

#### **Achievements realized**

- Democratic practices are being built in areas of community based conservation.
- Democratic space is being realized by local communities especially with the 1992 amendment of the Indian constitution providing local communities and local authorities (panchayats, gram sabhas and municipal councils. For example, PESA, a piece of legislation gives tribal communities ownership rights over "minor forest produce", the right to be consulted before any land acquisition is taken up; control over plans and resources allocated in tribal sub-plans of state governments; the right to plan and manage minor water bodies.

In areas where success has been recorded, reports indicate that forests have regenerated while some revival of wild animal populations is reported. In forest related projects, water availability has been the best success, which has resulted in increased food productivity and improved livestock breeds due to increased fodder. This has resulted in more people leading more sedentary lives.

**Challenges:**

- Complete devolution of power over natural resources not always positive, as village institutions can be destructive and exploitative.
- Inequities within and between communities can create serious problems in community wildlife management, while commercial forces can be very powerful

**Evaluation of any impacts should be based on:**

- Ecological (any desired change in the natural resources being conserved, wildlife/biodiversity and habitats)
- Economic and livelihood (change on survival and livelihood security of the communities involved in the initiative)
- Social/political (changes on social status, political empowerment among other desired changes)
- Policy (national, international, legislation relating to natural resource management and conservation)

**Lessons learnt and application**

- Tribal communities are better placed to embrace community based conservation initiatives which is already part of their live. They have all along exploited the environment sustainably for their needs.
- Community conservation initiatives need to be harmonized with existing laws while existing management structures need to be strengthened rather than forming new ones.

*Annex 1:*

***Organization of Visit***

To optimize on time, the process of experience sharing and lesson learning was shared between office discussions and field based excursions.

*Office discussions*

The office discussions aimed at having a personal touch took place between 8<sup>th</sup> and 10<sup>th</sup> December 2003. Discussions were held with individual researchers and managers at the Center for Ecological Studies of the Indian Institute of Sciences. The same period was used in sharing the Kenyan experience with staff at the center through a two hour plenary session. The thrust of discussions with center staff helped participants understand issues on elephant conservation, management and conservation challenges such as declining habitats, quality of habitat, size, corridors, effects of poaching, and conflicts. Further discussions were held with the Chief Conservator of Forests-Social Forestry (Karnataka State) covering social forestry focusing on Joint Forest Management (JFM), an initiative aimed at involving communities in forest conservation and management in areas of rehabilitation of degraded habitats and support of the social infrastructure. Further discussions were held with a number of local conservation agencies: Ashoka Trust for Research in Ecology and the Environment (ATREE); Nityata Foundation and A ROCHA, the Indian chapter; Director of Center for Environment Education (CEE), (a national institution engaged in developing programmes and material to increase awareness about the environment).

## *Annex 2:*

### *Site seeing*

A two days site seeing was conducted in Bangalore City between 12-13<sup>th</sup> December 2003. This was aimed at experiencing the culture, religion and social-economic structure in the urban set up.

### *Experience sharing*

The staff of the Ecological Study Center was briefed on the evolution of BCP, its achievements in terms of realizing its goal of biodiversity conservation, meeting its objectives of awareness creation, enterprise development, conflict management and threat reduction. Challenges facing the Programme in its effort to implement projects were also expounded and two case studies relating to the Imenti Solar Fence Project and Mt. Kenya Biodiversity Conservation Project were presented. The Kenyan experience sharing ended with questions from the Center staff. The objective of sharing the Kenyan experience with the Indian was to make them have a feel of what the Kenyan people are doing towards community based conservation and also provide the safari organizers an opportunity to understand BCP interest during the visit for purposes of planning to ensure maximum benefits.

### *Lessons learnt*

- Religious and cultural ties lead to conservation of the Asian elephant. People have greatly tolerated the elephant even after destroying their property, maiming and even killing them. The Asian elephant is referred to as a god following the believe that people are killed or injured as a punishment. This is similar to the Samburu culture where it is believed that elephants kill to punish. The Indian scenario has offered a dilemma on how to resolve elephant/human conflict. Despite the heavy economic loss occasioned by elephants, the religious/cultural attachment militates against translocation in some areas and control through shooting of problematic elephants as is the case in Kenya is an anathema. Most Indians have adapted Buddhism, which advocates vegetarianism, which has acted towards conservation with most animals being considered sacred (Cheryl personal comm. 2003).
- There is a very strong attachment to wildlife especially elephants by the Indian people which has culminated in national animals, birds and plants. For example, the omniscient and generous elephant-headed god; Ganesha or Vinayaka is worshipped by millions of people throughout India (Cheryl, D. & Sukuma, R. 1998). This close elephant relationship has led to more tolerance of elephant depredations.
- India has a monetary compensation system of crop damage losses and human/death. Kenya scrapped compensation for loss of property owing to difficulties in determining authenticity of such claims. Though the Indian compensation system is in place, there are few farmers who are keen to file claim. This is attributed to:
  - *Complicated procedures which are beyond the understanding of the farmer while evaluation of damage is not properly done*
  - *Farmers being paid way below the actual loss*

- *The bureaucratic nature of the government*
- *Process being long leading to corruption and farmers spending own money to follow up very little.*

India is undertaking some limited elephant translocation exercises as a way of easing crop raiding. This is mostly on male elephants suspected to be habitual raiders. Tranquilized elephants are loaded by tamed elephants (kumkies) as opposed to human labour in Kenya. The captured elephants are transferred to training camps where they are trained and later sold to private individuals, temples or zoos. Captured elephants can also be used for tourism such as elephant back rides to forests, to pull logs in forests, maintenance work and to scare away wild elephants. Captured elephants in Kenya are transferred to restock Parks/Reserves whose elephant numbers and structure was affected by heavy poaching witnessed between the late 1970s and late 1980s.

The capturing and training exercise in India is estimated at Rs. 1, 00,000 (US\$) while a trained elephant can be sold at Rs.3, 00,000 (US\$). However, sale is affected by high cost of maintaining captive elephants, declining use of elephants in the timber industry and objections raised by animal rights groups to the capture and taming of wild elephants.

India like Kenya scares problem elephants using firecrackers and guns using skilled personnel from the Forest Department (watchers or guards). India also utilizes temporary workers during the crop raiding season. They drive elephants back to forests using guns shots, firecrackers and noise. Kenya also mounts elephant's drive using thunder flashes and currently is using helicopters for such drive. The exercise provides short relief to farmers, as elephants will still revisit the areas.

Some farmers in India have adapted new land use as a way of reducing human/elephant conflict. Due to preference for paddy, some farmers have resulted to growing cotton and tea which provides a buffer between the forest and other crops such as coffee which is equally a preferred crop.

India like Kenya has adapted elephant proof trenching commonly referred to as game moats in Kenya. In India, elephant moats are mechanically done using an excavator though in some cases is done by hiring labour on contract. In Kenya almost all game moats are done using human labour attributed mostly to rugged terrain. Trenches in India are done by the Forest Department, which has jurisdiction over forests and is supposed to maintain the trenches by hiring human labour. This is similar to the Kenyan situation where up to the 1980s the Forest Department was responsible for digging game moats around forests while game department was responsible for game moats on areas under its jurisdiction. Labour was normally hired to dig the trenches through funds voted from the consolidated funds. The same labour was expected to maintain the moats. While moats are effective when well maintained, maintenance is rarely done leading to elephants and other animals finding access through sections where earth is filled back, or where trees have fallen and where there are administrative tracks. In Kenya, game moats are now being done through partnerships between communities

and the relevant government departments, which is either Forest Department or Kenya Wildlife Service in collaboration with a development partner. The development partner provides implements to dig moat while the community digs and maintains the moat.

#### *Cost of doing 1km of moat*

##### Moat dimension

Though trenches differ in dimension, the official prescribed dimensions are 3m x 2m x 1m (top width x depth x bottom width) Cherly, D.N. & Sukumar, R, 1998. However, the dimensions are as diverse as the people involved in their construction.

##### Cost of excavation

Excavation is either done using mechanical excavators but hired human labour is the most common. Cost of excavation is dependent on soil, topography among other factors. However, on average, they have been found to cost on average Rs. 85,000/km.

##### Effectiveness and lessons learnt

###### *Effectiveness*

- Moats or trenches are effective for the first few years after excavation but this is dependent on the level of maintenance
- Their effectiveness is also dependent on length as a very short one will easily be circumvented by the marauding animals
- Moats or trenches are not suitable in areas of loose sandy or rocky soil, severally undulating topography and high rainfall
- Moats or trenches require reinforcing in sections where they are weak to ensure they are effective
- These barriers require the cooperation of forest personnel and local community and Wildlife personnel in the case of Kenya

###### *Lessons*

- Excavation is mechanized or through use of human labour as opposed to Kenya where moats are 100% excavated and maintained using human labour.
- Trenches in India are excavated by the government through the Forest Department which is a shift in the Kenyan context where the activity previously done by government through Forest Department and Wildlife is being done by communities through donor funding as is case around Mt. Kenya forest
- Trenches are as effective as they are maintained
- Kenya moats measure 7ft deep x 3 ft wide with a 2ft kink.

India is creating wildlife corridors by buying land from farmers. The interface between communities and government is provided by NGOs, which create awareness and broker a deal with the local people.

## **Electric Fences**

### **Indian case**

India like Kenya has embraced conventional electrified fences. These are also referred to as psychological deterrents and in both countries there are government, community and private fences. Fences in India consist of 3-4 wires fixed 1ft. apart, to a height of around 5ft with a voltage of 4000-8000V. The fence is designed not to kill but to offer a psychological deterrent. Fences in India vary depending on whether they are done by government, individuals, private companies or the community. There is a high variability in fence design and use of fence products. Posts range between wooden, metal, concrete, stone pillars, aluminum posts, steel posts to live posts. Fences range between 0.75km and 15km being the longest. Installation cost is estimated at Rs. 32,904 ( US\$ ) per km but this is a conservative figure. Individuals have substituted brand name parts with alternatives as a way of reducing cost. Ceramic insulators being replaced with rubber hosing, live trees instead or treated posts, recycled automobile batteries and chargers instead of company supplied battery packs. As is characteristic of government supported projects, fences by Forest Department in India have not performed very well as opposed to privately managed fences. The performance by government managed fences is attributed to low level of maintenance, inappropriately trained personnel, inadequate maintenance funds and vandalism/breakage by local people to gain entry into the forest. This scenario is not different to the Kenyan case especially where fences were put up with minimal consultation and involvement of local communities.

### **The Kenyan case**

Electric fences date to the early 70s when the first barrier to separate people and wildlife when a short two strand electric fence was put up in the (salient) Aberdares by Jenkins. The fence comprised a positive and a negative and was to complement a moat. An elaborate fencing scheme took place in 1981 through the RBD project supported by the World Bank. The project supported high tensile fences in Loita in Narok, western boundary of Meru National Park and southern boundary of Shimba Hills National Reserve. These were not electric fences but were an attempt to separate people and wildlife. The first electric fences were put up through Save Rhino Project launched by the Kenya government in 1984. The objective was conservation of the black rhino by establishing sanctuaries. These electric fences were put up in Ngulia (Tsavo West), Nairobi National Park, Lake Nakuru National Park and Aberdares (salient). These fences were quite effective and so many other fences coming up. In 1991, Kenya Wildlife Service developed a policy spelling strategies of addressing human/wildlife conflicts. After identifying hotspots in the country, KWS recommended need for 2,225km of electric fences covering the entire country. To coordinate this enormous task, KWS formed a fencing unit which would also address fence design, initiate fence development and coordinate maintenance of existing fences. KWS with other partners (small scale farmers and BCP) has put up a total of 1,300kms of electric fences while large scale ranches have put up similar length if not more. Electric fences are quite expensive to put up and maintain. On average they are estimated to cost between Kshs. 400,000 - 800,000 (US\$ 4000-8000) per kilometer and maintenance Kshs. 60,000 (US\$600) per kilometer.

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### **Effectiveness of electric fences**

Electric fences are only as effective as they are maintained (Joakim Kagiri, Personal communication). If properly maintained they are very effective psychological barriers. Putting up a fence is easy but the challenge is maintenance. Not many of the fences that have been put up are effectively maintained and it is not surprising that only 50% of the existing fences are effective. Like other sectors of development, fencing has been liberalized with everybody putting up fences with little consideration for standards. Prior to 1995, KWS used to provide standards even in private ranches. The scenario changed with donors funding private ranches directly and when KWS engaged contractors. There is need for an elaborate maintenance system if fences will be effective. Fences also have to be properly designed and constructed if they have to be effective.

### Challenges in putting up electric fences

- Poor understanding of the way electric fences work. Electric fences are taken as physical barriers while they are psychological barriers. Effectiveness of electric fences are a factor of sustained current and voltage not the size of the post or wire.
- Lack of a land use policy making it difficult to place a hard line between different land uses. This has at times resulted in some fences becoming white elephants, as was the case for the Loita fence.
- There are no standards for fencing products owing to the competing forces. This has led to all manner of fences and as the country lacks a national body to regulate the operations, this has led to some wildlife being electrocuted and even people. NEMA may be handy in regulating this area.
- High construction and maintenance costs leading to substandard products being used or high conflict areas being ignored.
- Inadequate expertise in the field leading to either delays or ineffective fences being put up.

### Lessons learnt

- Most of the fences that have been put up are a response to political pressure and community cry with little planning leading to poorly developed fences, poor consultation with the beneficiaries (poor maintenance once completed).
- Effective fences require data and information (are scientific) as a basis for design, construction and maintenance and monitoring is paramount.
- Fencing products are dynamic in nature and people in the industry have to keep abreast with new products in the market.
- There is need to standardize fencing products due to their varied nature.
- Electric fences are effective barriers in conflict resolution and in biodiversity conservation especially threatened or endangered species.
- Capacity building is critical for technical staff, managers and members of the community involved in fence development.
- Community involvement is not uniform being dependent on the development partner, the specific

group. Some development partners involve communities while others are not keen. Some communities such as Naari, Imenti and Sagana have been very effective.

- Communities fail to meet their obligation to maintain fences once completed. Once the fence is complete, the assumption is that it will continue keeping off the wildlife. There is a feeling that the fence offers a solution to all their past suffering and is time for them to rest.
- Maintenance is a 24hour activity if the current and voltage will be sustained for 365 days. It is expensive and a clear maintenance plan should be inbuilt in fence development plan. It is estimated to be 10-15% of the development cost.
- Designing and constructing fences requires knowledge of biological issues (animal involved), geographical issues (terrain, river regimes, soil types) climatical issues (temperature, rainfall, humidity levels) and vegetation type.
- An effective barrier is one, which will not electrocute people, wildlife and has a clear maintenance plan.
- The sector lacks transparency with most suppliers lying about the quality of products.

#### Conclusion

As to whether electric fences are working or not working is a factor of design, construction and maintenance. There is need to standardize fencing products and develop a national fencing policy which is lacking. The government needs to develop a land use policy. Most fences are tending to fencing in people hence creating islands. With large scale plantations encroaching wildlife areas, more private electric fences are expected restricting wildlife movement. This implies survival of wildlife being restricted to protected areas. It is coming to a time when wildlife has to compete with other land uses, economically, generate goods and services for people and create employment.

Annex 3:

## **Community and forest conservation and management**

### *Indian situation*

The 1988 Indian National Forest Policy identified need to involve people in the development and protection of forests. The government of India, Ministry of Environment and Forests in 1990 issued guidelines for involving Village Communities and Voluntary Agencies in the regeneration of degraded forest lands. The guidelines have proposed formulation of Joint Forest Planning and Management (JFPM) scheme charged with responsibilities of preparing plans for the development and protection of forests with community participation. The Forest Act has been amended providing for the constitution of the Village Forest Committees (VFC). Community involvement was a result of pressure exerted on natural forests due to increased human needs. The government realized need to support social forestry on government land and private lands.

The exclusion and expropriation of communities, has a long history world over which has greatly alienated people from their rights to, and responsibilities for natural resources (Edmund Barrow et al. 2002). The increased alienation of rural people from their forest resources has intensified degradation and encroachment. Policing has failed due to under-resourcing of forest sector, short-term political expediency, exacerbated by increased patronage and corruption. "Traditional" Forest Reserve management has failed being unable to address habitat loss, meeting livelihood and environmental needs. This has led to new thinking where collaborative, joint forest management and even changing status from National to Local forest reserves are being explored. Community involvement in forest management and conservation is being tried in Tanzania, South Africa and Uganda. This is a way of restoring community rights to forest management. The inclusion of communities has led to policy change in terms of decentralization, use of participatory process, formalized collaborative management arrangements to sustainable forest management.

Impact of involving communities in forest conservation and management;

- Improved relationship between Forest Department and communities
- Decrease in encroachment
- Reduced fire incidents
- Reduced illegal felling of timber

### **Challenges**

- Non prudent financial management
- Lack of a clear system to ensure that members are adequately involved in critical decisions affecting them and are not used as rubber stamps.
- Danger of domination by the committee members and forest staff in making important decisions affecting the larger community.
- In large villages, there is heterogeneity leading to difficulty in decision making
- High illiteracy level especially on women

- Influence by Forest Officers who are secretaries to the committees
- Dependent on religious and political affiliations
- Are people competent and or prepared to be responsible for environmental matters. Do they have the capacity and or are they transparent enough

#### **Threats**

- Mining, quarrying
- Low funding level
- Funds reaching target community and prudent use of financial resource

#### **The Kenyan situation**

The current forest policy (Sessional Paper No. 1 of 1968) is that all the forests belong to the government. The major emphasis is protection and also utilization of both indigenous and industrial plantations for fuel wood, round wood, pulp and paper and non-timber forest products base on the principle of sustained yield.

The main objectives of creation or maintenance of forests is fourfold:

1. Main and improve the climatic and physical conditions of the country
2. Conserve and regulate water supplies
3. Prevent soil erosion and desiccation
4. To develop economic production of sufficient forest produce to satisfy the needs of the community and to provide exportable surpluses

This policy is under review. It was actually Okayed by the Cabinet in 1994 but has never been translated into a Sessional Paper of Parliament. It went through more stakeholder discussion between 1999 and 2001 and it has been with the Attorney General since then.

#### **Community involvement**

The current policy (1968) has little to say on community involvement except that it seeks to ensure that the 'growing needs of the community for timber and other forest produce are adequately met'. The policy does not see the community as part of this process. Of course the policy mentions Local Authority Forests but does not say how local people are supposed to get involved in managing them.

The proposed (Kenya Forest Policy 1999) policy sees community involvement as critical for the success of forestry. It gives prominence to farm forestry. On government land, the community can make an application to conserve and manage a section of a forest for the benefit of that community. This is with the normal government oversight role. This is also supported in the proposed Forestry Bill 2002.

The proposed Bill has provision for community involvement. Some critics say the provisions are not clear. As

indicate earlier, Community Forest Associations (registered under the societies Act) can apply to the CCF to manage or conserve, either a State Forest or Local Authority Forest. The association must do a mgt plan to show what they want to do in the forest and must enter into a management agreement with the CCF.

Effective change in forest sector has been affected by:

- The review of the forest Policy taking too long
- Industrial Forest establishment has made use of local community through the Non Resident Cultivation but this has never been acknowledged in the Policy & Act
- Political interference has been the greatest hurdle to forest management in Kenya. This is the reason even the review of the policy and legislation has been difficult. There is hope with the new government

### **The National Biodiversity Strategy**

The National Biodiversity Strategy and Action Plan (NBSAP) was discussed and passed by stakeholders sometimes in the year 2000. It is a government document that envisions the Kenya's status of Kenya's environment in the next 20 years (year 2020). It deals with literally all matters of natural resource management and environment, including management of arid and semi arid areas, protected areas, genetic resources, forests etc. A copy can be got from the Government Printers. As far as implementation is concerned, former NES now within NEMA might have the latest. NBSAP

#### ***Annex 4:***

##### ***Field excursions***

As a way of solidifying gains realized during the office discussions, a 7 day field excursion was conducted from 13<sup>th</sup>-19<sup>th</sup> December 2003 covering three states of Karnataka, Tami Nadu and Kerala. The visit was preceded by a planning session involving a research officer and a development officer both at the Asian Elephant Conservation Center linked to the Center for Ecological Sciences of the Indian Institute for Sciences. The planning session was aimed at optimizing on available resources. The meeting culminated in my hiring a vehicle to cover over 1000km at 4 Rupees/km and provide support for the officer accompanying me to the field.

##### **Day one**

The first day entailed traveling from Bangalore, to Mysore, some 140km away. The city is famed for its silk and sandalwood while it is the focal point to major sites such as the Mysore Palace, the largest of its kind in India and whose architecture dates back to 1912 incorporating the Indo-Saracenic style. Among its many attractions are the golden royal elephant throne and Durbar hall. Other sites visited include the Jayachamarajendra Zoological Garden (Zoo) which has many world wildlife species including the African elephant, black rhino, common zebra and reticulated giraffe all in captivity.. Other sites include the St. Philomena Catholic Cathedral whose architecture dates back to the medieval times. Other key areas are the Chamundi Hills, which towers over the Mysore city. At the apex stands the 2000-year-old Chamundeswari temple, dedicated to the patron goddess of the royal family. The hill is dotted with wild honeycombs dangling from huge Tamarindus trees.

##### Lessons

- India has a rich diversity of culture and religion and every point provides an opportunity for the local and foreign tourists to appreciate the rich heritage.
- Domestic tourism is a major source of revenue for the government with majority of people visiting tourist sites being the local people. This is different from the Kenyan case where majority of holiday makers are either foreigners or people who are currently residing in Kenya but not indigenous Kenyans. Domestic tourism in Kenya has not recorded much success owing to lack of transport to Parks and Reserves as majority are in remote areas where road accessibility is poor requiring service of a 4WD vehicle which is beyond the reach of majority Kenyans. There is also the cultural background with majority Kenyans feeling that they spent their earlier part of life in the rural areas and hence have no interest in wildlife.
- In India game drives are organized by Park management where tourists are driven around in Park vehicles. This ensures negative environmental impacts associated with off road driving, animal harassment, discharge of wastes are regulated. Tourists to Kenya conduct game drives in their personal vehicles, hired vehicles or mini busses causing untold environmental degradation especially in Reserves that are outside the jurisdiction of Kenya Wildlife Service.

## **Day two**

Drove to Mandya for a brief meeting with the local District Forest Officer aimed at providing a practical experience of how local communities are involved in the Joint Forest Management and Planning (JFMP). The office discussion was proceeded by a meeting with representatives of a village who form the Village Forest Committee (VMC). The meeting which had been organized in advance by a member of the NGO in the District Forest office took place in a temple and in attendance was the village President Mr. B. Jayaramegida, men and women from the village.. The meeting was preceded by the guest being adorned with a bouquet of flowers followed by a brief from the officer from the NGO. The visit was to evaluate the extent to which the VFC were being involved in forest management and conservation and determine parallels if any between the VFC s and the Kenyan equivalent of the Project Implementation Committees (PICs).

### ***Composition of VFC:***

The VFC is formed for a part of a village, a village or for a selected group of villages. The general body of the VFC consists of every adult member within the jurisdiction of the VFC and interested in conversation, development and management of forest. One becomes a member by paying Rs.2/-. In addition to the registered members, there are ex-officio members of the general body include the Gram Panchayat member(s) from the areas forming part of village/villages or the selected group of VFC, village accountant, Gram Panchayat secretary, Agricultural Assistant/agricultural extensive officer responsible for the village or group of villages, officials of the animal husbandry department at the village level forest motivators/extension workers of social forestry division responsible for village or group of villages, forest guard, Forester, school teachers working in the primary school/middle school / high school in the villages, one representative from each of the non-governmental organizations, and ex-officio member secretary. It is only the registered members of the VFC who are entitled to benefits under JFPM the ex-officio members together with representatives of non-governmental organizations are not entitled to any of the benefits.

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### **Management Committee of the VFC**

The affairs of each registered VFC are managed by a managing committee, which is also responsible for effective performance of the duties and responsibilities of the VFC. The managing committee of each VFC shall consist of the following:

An elected Chairperson and 14 other members including 10 elected members and 4 ex-officio members to include 10 elected members, 2 SC/ST of which one is a woman, 2 landless labourers of which one is a woman, villagers artisans, 2 non forest product collectors of which one is a woman, and 4 general categories of which two are women and 4 ex-officio members to include the village accountant, Gram panchayat secretary, Ngo representative, member secretary (forester or forest guard with SSLC qualification or agricultural assistant (in case of non-forest lands) in the order of preference)

### **Conducting elections for managing committee of the VFC.**

Elections of the management committees of the VFCs are conducted by the member secretary convening a meeting of general body which is presided by the revenue inspector of the revenue department with quorum being formed when more than 50% of registered members for the 1<sup>st</sup> meeting and 25% of the registered members in the adjourned / subsequent meeting.

### **Challenges facing VFCs -**

- High illiteracy especially among women
- Domination by a few elites among members of the committee
- Decisions not being made by majority members of the VFC. Women felt that unilateral decisions were being made without necessary consultation. Their views were not being sought.
- Complexity in environmental matters
- Making forest officer as secretary presents a danger of influencing decisions and or steering the activities to suite the government rather than the community

### **Parallels between VFC and PIC**

- Both created to address ecological, socio-economic issues afflicting the society
- Both integrate technical people from the government and local NGOs to provide technical skills who are not project beneficiaries
- The central committees face danger of assuming fair consultation while decisions are made by the central committee with little or reference to the general community
- Both make decisions on how resources are to be utilized based on an agreed plan of action
- There is danger of a few elites hijacking projects
- Those in center of power are vast with all issues while those at the periphery especially women are sidelined.

### ***Day 3***

Visited Keystone Foundation, a registered Trust under the Indian Trust Act, 1882 situated at Kotagiri. The Trust also has a partnership firm which has interest in honey hunters and beekeepers in the state of Tamil Nadu where a status survey has been carried out; working with tribal communities in Nilgiris in matters of appropriate technologies for agriculture: have experience in areas of income generation through recycled handmade paper unit in Delhi and has participated in eco-restoration efforts in mining areas. The visit was aimed at sharing experiences and learning lessons on aspects of quality control and marketing of honey and honey products.

### **Lessons learnt**

- Most of the honey received at the center is wild collected either from rock crevices or from cobwebs

deposited on trees. Most Kenyan honey is from wild collections (rock crevices, trees, traditional logs and from modern bee hives).

- Honey collection from modern bee hives had been affected by a disease outbreak that wiped many bees.
- In India, modern bee hives are being issued free of charge to trained individuals who at first receive 1-2 hives which are increased depending on the success. Bee hives in Kenya are also issued free of charge to groups though in some projects like Arabuko Sokoke, Kikuyu/Kinangop and Mt. Kenya communities are paying a small fee that goes to meeting labour requirements.
- Honey collection is done by individuals within a group as not all people are conversant with honey gathering. Funds are then divided equally among members of the group.
- The wild bee gives maximum yield though farmers are being given a higher price for honey from modern bee hives to encourage them to enhance production
- Beeswax is being done by communities in the village for production of candles and balms which are being sold to the center

#### **Day 4**

Had an early game drive in Mudumalai Wildlife Sanctuary having put up in a guest house at Masinagudi Research Station of the Indian Research Institute having come from Ooty. Had an opportunity of being in a jungle habited by tigers though I only managed to see a herd of elephants and spotted deer.

The game drive was preceded by a visit to Kerala state. The aim of the visit was to have practical experiences of how elephant/human conflicts were being addressed. After a briefing from the Research Officer at Wynad, we visited a tribal community living inside Wynad Wildlife Sanctuary. The visit was aimed at evaluating methods being used to wade off wild animals especially elephants. While enroute, we encountered some tribals carrying herbs harvested from the forest. The community which was growing tapioca (cassava) and plantains, (bananas), coffee and black pepper was using observatory towers and crackers as a warning of invading wild animals.. Use of crackers is quick innovative as it entailed ringing the farm with a single wire connected to an assembly which comprised of a cracker suspended over a stone. Any disturbance to the wire would lead to offsetting the assembly leading to the cracker tied to a stone dropping over another stone exploding. The resulting noise would alert the farmers of invasion by an animal and the farmers would drive away the animals.

#### **Day 5**

This was a continuation of day four. We visited number solar fences, elephant proof trenches, a mechanical device and observatory towers. The first to be visited was a 2km solar fence ringing a community living inside the Wynad Wildlife Sanctuary a pilot by the Asian Elephant Research and Conservation Center. A small section has been covered with a mechanical device comprising of old railings, rollers laced with pheromones. The fence enclosed a community of approximately 200 people all tribals living in Ramballi village. . They grow tapioca (cassava) and plantains (bananas), ginger and some paddy.

#### *Fence design*

The posts are aluminium coated, approximately 3” in diameter, widely spaced while these posts are interspersed with just a flat steel bar easy to bend. Wire connected to posts though plastic insulators a blend between Gallagher New Zealand and India. Sections of the fence have eight strands of wire while other section has five strands. Solar panels, solar batteries have been utilized. A section of the solar fence has been replaced with a mechanical device comprising of old railings and rollers laced with pheromones.

#### Observations

- One energizer has been put in one of the farmer’s house to the energizer
- Other energizer was high up in a observatory tower
- Some posts, wires, insulators and connectors had been broken by elephants
- Some elephants had knocked some of the plantains
- The community was not involved in fence maintenance

- Tapioca (cassava), plantains (bananas) and ginger were doing well in area though area had experienced drought
- A combination of different methods was being utilized to keep off elephants
- The tribals were getting all support free from the government on all aspect of their lives and nobody was willing to question this as would be dubbed anti tribals who were almost sacred. This had spoilt them as they were getting things like tractors that they did not even need along with individual water pumps among other items. The tribals were becoming a useful cow as they offered an opportunity for those in power to acquire items for them every year hence make a kill
- Some members of the community are appreciative of the impacts of the fence while others believe that the fence has been of any value to them
- While fence has not been 100% effective, there was evidence that it had reduced frequency of crop raiding as some luxuriant tapioca (cassava) and plantains (bananas) were growing
- Community not involved at problem identification, design, implementation and maintenance stages
- There was inadequate knowledge of fencing skills on the part of technical staff
- The fence had not stopped entry of deer and wild hog over a 35 acre land with approximately 100 relatives
- The fence could be affected by low voltage leading to breakages with elephants moving in
- The dependency syndrome has made community to view the government and private organizations as their savior and do little to help them. Though communities may be willing to contribute to their own well being, the mechanism does not exist. The current government thinking that it can give people what it thinks they need is lopsided and a bottom up approach should be explored
- Parks have clear rules on driving after 6:00pm and have core areas where tourism is expected
- Community involvement in conservation is in its infancy stages, weak and requiring strengthening. The programme is theoretically designed at national level and prescribed to people at grassroots level.
- NGOs are only called in at the last minute to rubber stamp government decisions long after they have been arrived at.

#### *Recommendations*

- A community scout to be identified and trained on aspects of fence maintenance such as replacement of broken posts, wire and insulators and to take daily readings (voltage readings)
- The Asian Elephant Research and Conservation Center along with the beneficiaries to draw an exit versus maintenance strategy for the fence
- Future fencing projects to involve the community fully in project identification, strategy formulation, provision of inputs, implementation and maintenance
- A officer from the elephant programme to visit Kenya and or any other country where fences have met some level of success to understand how communities have integrated in the whole project cycle management

### *Government supported fences*

A government installed fence was also visited in the same area. This was erected by the Forest Department to enclose forest settlements in the Wynad Wildlife Settlement. The fence had a combination of posts with some sections being steel posts, others were live trees and another section had wooden untreated posts collected from the forest. In all these cases there were no insulators used and wire was tensioned by tying it round the post.

### *Observation*

- The Forest Department was responsible for the maintenance of the fence and at the time of visit, the fence was in very poor state
- The fence design was poor with little standards being observed. The materials were of low standard for even wire was rusty, some posts were broken, distances between posts quite wide while there was no alignment
- There was little effort to clear undergrowth and branches leaning on the fence
- The community had low attitude towards the Forest Department and felt that the Department was not doing enough for them

### *Recommendations*

- Communities should be involved at all stages from problem identification, design, contribution, implementation and maintenance
- Some standards should be adapted while designing fences in relation to post size, fencing items and alignment
- Community should be involved in fence maintenance as a way of enhancing sustainability
- Regular monitoring of the fence should be mounted especially voltage reading and replacement of broken parts
- More funds should be set aside towards maintenance
- Communities should be sensitized on the importance of the fences and be involved
- On fences communities have been recommended to pay 50% and government rest 50%. Communities are required to form committees which will seek financial support from government while Forest Department will provide technical support.

### *Lessons learnt*

- An effective fence is attributed to good design, quality fence products and good maintenance
- Community involvement in all stages of fence development is a panacea for a good fence
- Elephants are the single most problem animal to the farming community
- Success of erecting a wildlife barrier is dependent on the involvement of all key partners which brings together the resource owners, those affected by the wild animals and those in the industry (manufacturers)

## *Kenyan situation on fence management*

### *Extraction of Forest Products*

#### *Indian experience*

The tribals have set up a cooperative shop at Wynad stocked with forest products in form of different medicinal plants, honey and lichens (used in paint industry). The cooperative has a credit facility extended to its members.

#### *Issues*

- Harvesting is not done in a sustainable manner as the motive is commercial which has opened flood gates for non tribals to engage in the sale of non forest products.
- The cooperative members do not get value for their money as these products are later sold to multinationals who make huge money
- Lack of a monitoring system on collection of non forest products can lead to extinction of some products in the wild.

#### *Kenyan experience*

Currently there is no legislation specific to Non Timber Forest Products (NTFPs). The current Act says that these can be collected from the forest with authority from the CCF

There are many establishments who are dealing or trading with things like gum arabica, honey (from forest or other areas) and other products but regulation is between Forest Department and Ministry of Agriculture.

In the Forest Bill (2002) regulation by the CCF is envisaged but this only applies to areas designated as forests. This needs to be widened to include even the ASAL areas.

The common Non Forest Products in Kenya being extracted in the wild include:

- Honey
- Gum Arabic, Gum Resin (Myrrh),
- Pasture (grass)
- Honey
- Dyes & beauty products (Henna etc)
- Aloe Vera

Others include indigenous fruits which are used mostly by pastoral communities while tending livestock while some have potential for commercial exploitation. Oil from the seed of *Jatropha curcas* (physic nut) is used for candle and soap making. Powered leaves of *Lawsonia inermis* (henna) produce “henna” a dye used by the Muslim community

for decorating women's hands, feet, and finger nails and dying men's beards. Seeds of *Vernonia galamensis* produce commercial oil. The Neem tree has many commercial exploitation.

There are no known policy guidelines that regulate NTFPs in the country while production practices are poorly developed. Quality control is affected by collection methods resulting in the mixing of gum Arabic and gum resins ([Chikamai & Odera, 2002](#)). Appropriate policies need to be developed, while methods for field production and post harvest handling need to be improved. In the absence of a regulating body, NEMA should provide necessary guidelines while land tenure issues should also be streamlined. KEFRI has carried out some work in the gum producing ranges and its experience is critical. Kenya Association of Forest Users (KAFU) might have some initiative to document some of this but it may not be nationwide. The Kenya Forest Users Association is trying to come up with ways of certifying some of the forest products so that they can compete in the world market with other products.

Kenya like India has communities living and depending on forests and their products. The Ogiek's or Dorobo were originally forest dwellers. Today even the few who claim they live in the forest have changed their lifestyles. Times have changed so much that the hunter-gatherer lifestyle is not possible to maintain. But, these people's ancestors lived in the forests and have no other place they can call home, regardless of changes in lifestyle.

What has happened in forests such as Mau is that the original Ogiek were displaced and these areas settled by other people. The Ogiek have a case in court to challenge this. There is a plan to issue the Ogiek with title deeds. There are still a few Ogieks in Ndoinet and Kiringet areas of Mau; maybe these are the areas the President was referring to. But these are the few areas patches of natural forests are remaining!

#### *Day 6*

##### *Discussion with a Government Representative*

The field excursion culminated with discussion with the Conservator of Forests and the Field Director, Project Tiger, Bandipur and RajivGandhi National Parks. The discussion was aimed at lapping up discussions, personal experience from the field and receive the official position of the government on community involvement in matters of conservation from a high ranking government officer based on the ground. The government decided to involve communities in forest conservation and management after hostilities escalated between Forest Department and neighboring communities. Though the government has power, resources and authority, human pressure continued to impact negatively on forests. Conflicts were common resulting in communities setting forests on fire to teach the government a lesson. The increasing human population only exacerbated the situation by increasing pressure. The more the government intensified policing, the more the communities hit back. As the quality of forests went down due to increased loss of cover this made the government rethink its position culminating in the formulation of the JFMP and incorporation of the VFCs. The objective of integrating communities in forest management is to ensure that they contribute to forest conservation and

management and help them improve their livelihoods through government support at village level by supporting the social infrastructure. The idea is to create a buffer zone of 2-5km which will be entrusted under the environmental development committees (EDC). The forest act is being reviewed to incorporate these EDCs. Communities will be allowed to undertake activities in the multiple use area where through a grant of Rs 4000 can raise plantations over a 50 hectares. The world Bank gave support of Rs. 300,000,000 of which Rs. 100,000,000 have been spent on villages to provide solar power, cookers, cooking gas, stoves, bicycles as a way of cutting on dependence on fuel wood. Communities were required to contribute 25% by opening an account for purpose of maintenance. Their contribution can also be used in buying shares under guidance of forest officers. Each Park was given Rs. 10,000,000 per year. The support to Parks is in 7 Tiger States out of 11 which is on experimental basis. The Forest Development Agency was allocated Rs. 4000,000,000 for community development to go to 450 forest divisions each receiving Rs. 10,000,000 per year.

### **Personal experience at the Park**

“Had a lifetime experience’ a personal touch with mother nature. Riding on the back of an elephant is an experience that cannot be bought with money. Given the aggressive nature of the elephant from the number of people killed, maimed and property destroyed, it is gratifying to learn that the same animal can be so gentle and be a faithful taxi. The ride which was on an evening took me to the periphery of a jungle. The beast was controlled by a taxi man - who being barefooted gently stepped on the back of the elephant ears to turn to a given direction while another ground man used a twig. You are wrong I was not hit by branches from trees, there were some designated paths. You are wrong again, it is not bumpy nor does it make noise and even you who is on the back is not sure what you are riding on until you cast your eyes and see a deer take cover or a hare scampers for cover. To sum it all--- it is the gentlest of animals despite its sheer size. The massive taxi is steered back to a lump where the cargo is off loaded. Yes I would go again if I visited India and venture more in to the jungle if the authority would allow. As a Wildlife person worked in Parks for over 14 years, I had close contact with nature but being on the back of this mega herbivore made the contact become real as I was riding on nature itself. The ride was like no other”

Yes you are right I was anxious at first but I gained courage because that morning, I had read from my small book Psalms 23 that “God leadeth a sheep to a table that overflows”. A shepherd takes risks and identifies best place for the sheep. The best comes only a result of hard work and risking for the sheep”. I therefore had to risk if I was to reach the climax of my visit to India.

### **Day 7: Recap of Safari with host**

On the 13<sup>th</sup> day, I met Professor Sukumar of the Asian Elephant Conservation Center after his arrival from Harare where he had attended an international conference. Our discussion revolved around the realization of my objectives for the safari to India. Generally, the objectives were met as I had a good interaction with scientists at the Ecological Sciences Center who had provided a detailed account of elephant management and conservation and the interrelationships between wildlife and the people. Conflict related issues and mitigation had been discussed in

detail with the center scientists. I had also held fruitful discussions with senior government officers on forest conservation and management issues and the interplay between forests and the local communities. At the field level, I had an opportunity of meeting and discussing with community representatives comprising both men and women on their role in conservation matters and benefit sharing. The meeting also gave me an opportunity to evaluate the relationship between their committees and those established by BCP. It was also in the field that I was able to evaluate the socio-economic status of the community and get in touch with the social issues afflicting that community. The social structure was better understood where women have little place in the society and are engaged in such tasks as road construction, and other manual tasks which is uncommon in Kenya. This is based on the caste system which relegates individuals to this state. I was also able to see the countryside and evaluate the socio-economic activities undertaken by various social structure of the society. I was able to appreciate the position of a farming community, pastoral community, large and small scale farmers. I also appraised communities relying on natural resources for their survival. I interacted with nature through visit to forests and National Parks to appreciate nature and understand the relationship between these protected areas and those communities living around them and those living inside them. The biggest lesson learnt is that these communities like those in Kenya are greatly marginalized and the human-wildlife conflict is the major cause for this impoverishment. Like their Kenya counterparts living in such areas, these communities have resulted to traditional methods to protect themselves and their property from depredation from wildlife. Their methods only succeed as long as the human presence is there and removal of human presence results in invasion. India like Kenya, has adapted similar methods of controlling invasion by wildlife such as use of scare, translocation, barriers in form of trenches (moats), and diverse fences ranging from solar, electric to mechanical devices. I was also able to evaluate the level of effectiveness on government fences and private fences. More importantly I was able to interact with communities that used to suffer greatly before a fence was put up and hear their views now that a fence exists. Just like in Kenya, it is those farmers who are close to protected areas who appreciate the role of fences while those dependent on forests for their livelihoods are critical of the role of fences. I was also able to appreciate the diversity in products utilized in fence construction, the level of maintenance, community involvement and the implication of either involvement or non involvement. It was while in the field that I understood the implication of large population on marketing. It was during a visit to one NGO involved in processing of honey I appreciated the importance of numbers in marketing as was informed that all the honey produced is consumed locally and demand cannot be met as long as quality standards are met. In that region which is in Tamil Nadu State, most of the honey is from the wild and is only now communities are being encouraged to use modern bee hives. It was in the field that I understood best the diversity in culture and religion and its implication in facilitating or impeding community based conservation.

#### Frustration

Inability to talk directly to local people to get their feelings without the use of a translator and failure to locate a tiger in the wild in spite of numerous trips made in Parks.

#### Best moments

Sharing experience, lesson learning with Professor Sukuma and Field Director, Badipur National Park

Sitting with community at Madya and visit to Cornerstone

To learn that Varma had made arrangements for me to visit contacts on the Sunday I was flying back to Kenya to avoid anxious moments

#### Worst moments

Failure to site tiger at either Banipur or mathului

Being left by aircraft at Mumbai on the first day

#### Acknowledgements

Professor Sukumar for approving my invitation and hosting me at the center

Joshua for providing link between Kenya and India and providing logistic support

Varma for coordinating office and field based programmes and most importantly for concern to ensure that expectations were realized. Being with me on my last day to ensure my comfort. Bhaskah for participating in field excursions, being my field guide, interpreter, advisor on Indian cuisines, and key sites and organizing for elephant ride and game drives

Entire staff at the Indian Institute of Science, Center for Ecological Studies and Center for Asia Elephant Conservation , CCF (Social Forestry, Karnataka state, Field Director Badiphur, DFOs Mandya, Bandipur, Wandiyar, staff at Muthumulai, Director ATREE, CEE, KEYSTONE, Country Director, AROCHA, Gopa Kumar

#### Annex 5:

##### ***Honey Production Issues***

***Who collects honey in Kenya, how are benefits shared***

***Honey collection in the country has a long history with majority of communities being associated with deriving their needs from forests and forest products. Honey gathering has been a preoccupation of majority of Kenyan tribes until modernization caught up with us and forests were replaced with agricultural lands. Traditional methods of honey collection have revolved around collection of wild honey from tree trunks and rock crevices using fire and later use of traditional logs. These methods are still in use among the pastoral communities. Honey production in the country is a multi billion dollar enterprise owing to the large area covered by asal lands with high plant diversity which flower at different times of the year. There is also potential in high agricultural areas where commercial honey production is picking up. The difference is that honey from asal areas is free of chemicals as opposed to that from the latter. However, honey and beeswax production remains largely unexploited due to a myriad of issues.***

***Who owns the hives given by development partners?***

***Current quantities being produced?***

***How does quality affect market?***

### *Quality control measures*

- Moisture levels have to be maintained at 24-25% beyond which honey is rejected at center
- Honey should not be heated
- Harvesting should entail cutting the wild hive and letting it drain as squeezing leads to collection of larvae, wax leading to fermentation
- There is a feedback mechanism using e-mail, leaflets
- Do not follow government standards but working towards influencing revising of standards especially for organic honey.

### *Issues*

*How is quality regulated for both honey and its products and inputs?*

### *Marketing*

- Targeting local market, which consumes 70% while rest goes to neighboring districts. The demand currently exceeds supply.
- Honey currently being blended with pepper, garlic among others and sold as such to meet consumer taste. Honey is also being packaged as balm and ointment.

### *Challenges affecting marketing*

- Un-hygienically processed honey
- Low budget for marketing
- Average to below average packaging, labeling
- Poor storage facilities, leading to product loss or deterioration and unreliable supply
- Unscientific methods of product costing and budgeting
- Diversity in processing methods

### *Lessons learnt*

- Marketing to begin with a limited geography such as a town, city, market to understand the consumer reactions to the product
- Organizations involved in marketing Non Timber Forest Products to come together to exploit a common brand and platform for mutual benefit, rather than compete for limited market space
- Use appropriate advertising methods: Due to tight advertising budgets, conventional methods on advertising to be employed- exhibitions, vehicle

### *Case from Zambia*

The Miombo woodlands of Zambia contain many tree species that are ideal for beekeeping. However, the

production of honey is often constrained by periods of drought or limited rainfall. Neglected or mis managed hives also lead to colony starvation, swarming or absconding. Data from the main honey producing regions indicate that about 6,000 beekeepers with almost 500,000 hives produce over 600 tonnes of harvested honey and 100 tonnes of wax. Only about 80-100 tonnes of honey is sold commercially with the remainder used locally in beer production. Until recently, any exports have been the monopoly of one private honey factory, North-Western Bee Products Limited, but with liberalization it is hoped that export sales to South Africa and Canada might be encouraged.



credit: Singy Hanyona

The World Wide Fund for Nature (WWF) in Zambia has supported the establishment of community apiaries in the northern region. More than 100 hives have been set up through the WWF beekeeping project and 210 litres of honey was recently harvested, processed and labeled for sale. According to Justine Lupele, the WWF education officer, the people involved in the project now have a better understanding of the importance of bees and are more interested in using improved methods of beekeeping. "They have discarded old methods of beekeeping that were destructive as many trees were cut down to extract tree bark, used in making traditional hives or, in some cases, the tree was killed when hollows were made in the trunks to create homes for the bees." Beekeepers are now encouraged to use wooden-framed beehives, which can be moved easily to increase the pollination and yield of crops, such as beans, sunflowers and citrus fruits. "Beekeepers have also begun to realize the contribution bees make to the sustainability of the forest through the pollination of wild fruits, many of which are harvested and used by local people."

In the Central Province of Zambia, beekeepers are complaining that their bees have been killed by the pesticides used on cotton although Clarke Cotton Zambia Limited, one of the cotton processing companies, has said that only a synthetic pyrethroid, Dealta Metrin (DECIs), is used for killing cotton bollworms before hatching. "Cotton needs insects, including bees, for pollination so there is no way we would use chemicals that destroy beneficial insects," says James Phiri, Operations Director for Clarke Cotton. "However, there may be some agents that are selling very strong pesticides that not only threaten the bee production industry but are also damaging to the environment."

Although the Forestry Department is responsible for the provision of extension services to promote beekeeping in rural areas, there are as yet, no known bee breeding programmes to improve beekeeping in the major beekeeping regions. Without knowledge of improved management techniques, very few farmers have the expertise to manage their hives effectively. Hives may be checked too regularly, or not often enough, which can result in hives being affected by pests and diseases or invaded by ants. During long drought periods, bees will feed on stored honey unless a beekeeper has the wisdom to move the hives closer to forage, or to feed them. As a result, many colonies are not fulfilling their potential and a lack of training and available vernacular beekeeping manuals is currently

limiting the further development of beekeeping in Zambia.

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