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The Selous – Niassa Wildlife Corridor in Tanzania: Biodiversity Conservation from the Grassroots

Practical Experiences and Lessons from Integrating Local Communities
into Trans-boundary Natural Resources Management





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**Dr. Rolf D. Baldus
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Wildlife management and conservation can provide great opportunities for livelihoods improvement and food security, especially in remote rural areas. Sustainable use of wildlife resources generates considerable income at local and national level in many countries in the world, however with the migration and mobility of wildlife, wildlife management and conservation goes beyond national borders and has to be addressed at regional, continental or even global level.

Southern Africa has several transboundary protected areas, known also sometimes as Peace Parks, which are part of a large ecological region that straddles the boundaries of two or more countries. Effective management of these transfrontier conservation areas and their further development is one of the highest priorities in the wildlife management in the sub-region and is clearly stated also in the SADC Protocol on Wildlife Conservation and Law Enforcement signed by the great majority of SADC countries. Apart from promotion of co-operative management of shared wildlife resources and wildlife habitats across international borders, the Protocol also stresses the need for information sharing and capacity-building for effective wildlife management.

I believe this publication, which is part of our ongoing joint FAO/CIC initiative to share best practices and experience in wildlife management and conservation, will contribute to the efforts by SADC countries to further develop transfrontier conservation areas. It is hoped that sharing of practical experiences and lessons learnt from implementation of transboundary conservation approaches in Selous-Niassa wildlife corridor between Tanzania and Mozambique, will assist decision-makers and practitioners to better plan and implement activities in protected areas under their responsibility.

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1. INTRODUCTION

In Southern Africa cross-border conservation initiatives traditionally started from the top with the signing of protocols by the heads of state. However, trans-boundary conservation activities ultimately take place at local level and more often than not the local level administration and managers, and in particular local communities most dependent on natural resources, have been neglected in the planning and implementation process. Since there is growing consensus that conservation of biodiversity, natural resources and wildlife depends on the cooperation and involvement of communities living at the resource base, their level of participation and ownership are also key for the development of successful cross-border conservation.

How this can be achieved in practical terms is demonstrated with the development of the Selous – Niassa Wildlife Corridor, an initiative receiving official support from the German Government and the Global Environment Facility in form of different projects based on agreements concluded with the Tanzanian Government.

2. EXECUTIVE SUMMARY

This case study describes the development of the Selous – Niassa Wildlife Corridor (SNWC) and its concept of enabling and empowering local communities to manage their land and natural resources on landscape level with the view to conserve and maintain a viable biological linkage between the largest game reserves of Africa, the Selous Game Reserve of Tanzania and the Niassa National Reserve of Mozambique. Initiated ten years ago cross-border cooperation in conservation and natural resources management in this context has grown gradually from an informal local level based initiative to a formal cooperation agreement on regional level and aims at the establishment of a greater trans-boundary conservation area. Although the development of the SNWC is still in progress, this bottom up approach supported by Community Based Natural Resources Management (CBNRM) is already showing first positive results on the ground.

3. THE SETTING

3.1 Location and Description of the Selous - Niassa Wildlife Corridor

The wildlife corridor is essential for the conservation of the Selous - Niassa Miombo woodland ecosystem, one of the largest trans-boundary natural dry forest eco-regions in Africa. With an area of about 154,000 km² it extends across southern Tanzania into neighbouring northern Mozambique and includes major parts of the Rufiji and Ruvuma River basins, the latter the largest of East Africa. For its continued existence two core conservation areas are of importance. Those are the Selous Game Reserve of Tanzania and the Niassa Game Reserve of Mozambique.

With an area of around 50.000 km², representing 6% of Tanzania's land surface, the World Heritage Site "Selous Game Reserve" is the largest single protected area in Africa. It is also the oldest dating back to 1896. The reserve contains some of the most important populations of elephants, buffalos, antelopes, lions, wild dogs and other predators in Africa. With its extensive area of natural Miombo woodlands, the Selous is also one of the most extensive forest areas under protection. During the 1980's the rapid increase in poaching for ivory and rhino horn led to a steep decline of the elephant and rhino populations and threatened the reserve's ecological integrity and survival. With assistance from the Federal Republic of Germany and through the Tanzanian-German Selous Conservation Programme (SCP) it was successfully rehabilitated to a self-financing conservation area between 1987 and 2003.

The Niassa Reserve is with 42.400 km² the largest conservation area of Mozambique and contains the greatest concentration of wildlife in this country. Located in northern Mozambique, the Ruvuma River constitutes the northern border of the Niassa Reserve and at the same time the international border with Tanzania. Despite many years of independence and civil wars it supports a rich and diverse collection of wildlife. The reserve has received support from a number of private and Governmental donors.

Both reserves are located on national land. The Wildlife Department of the Tanzanian Ministry for Natural Resources and Tourism manages the Selous Reserve, whereas the Niassa Reserve is managed by the "Sociedade de Gestão e Desenvolvimento da Reserva do Niassa" in the form of an innovative partnership between the public and the private sector, where the Government of Mozambique retains ownership of the land and wildlife. Hunting tourism and to a lesser extent wildlife based non-consumptive tourism contribute to self financing of both reserves. However, after the end of the SCP the Tanzanian Government terminated



the Selous retention scheme which allowed the reserve to retain 50 % of its income for management and investment.

The Selous – Niassa Wildlife Corridor, entirely located on village land in Tanzania, provides with a total size of approximately 9000 km² a significant biological link between the two reserves and consequently for the miombo woodland eco-system. Starting at the most southern border of the Selous the corridor stretches over 160 km southwards until reaching Ruvuma River, the border of the Niassa Reserve in Mozambique. Following its course for 176 km the river constitutes the interface between the corridor in Tanzania and the Niassa Reserve of Mozambique.

In general the northern part is hilly while the area towards the Ruvuma River is slightly undulated to flat with isolated hills, some of them having prominent rock outcrops (inselbergs). Mtungwe Mountain (1284m a.s.l.) in the centre of the corridor is the highest elevation. From the North the plateau slightly slopes to the Ruvuma River which reaches its lowest level of about 460m a.s.l. in the south-eastern corner of the Corridor. The soils are generally very sandy and washed-out. Two drainage basins exist in the SNWC. North of the watershed, located along the Lake Niassa – Indian Ocean Highway, the rivers drain into the Rufiji River while the area south of the watershed is part of the Ruvuma drainage basin. Some of the major tributaries like Mbarangandu, Lukimwa, Luchulukuru, Luego or Msanjesi are usually permanent watercourses.

The corridor has the typical unimodal rainfall system of the miombo woodland ecosystem. The southeast monsoons, bearing moisture from the Indian Ocean, are responsible for the rainy season chiefly occurring from mid-November to mid-May. The rainfall generally decreases from the northern part with about 1200-1300 mm rainfall per year towards the south having a mean annual rainfall of about 800 mm along the Ruvuma River. The mean annual temperature is about 21°C.

The wide variety of its wildlife habitats – miombo woodland dominated by *Brachystegia spp.*, *Julbernardia spp.* and *Isobertlinia spp.*, wooded grasslands, open savannahs, granite inselbergs, seasonal and permanent wetlands and riverine forests along numerous perennial and seasonal streams - account for globally significant biodiversity. Although vegetation studies are still in progress about 500 plant species including one tree species (*Xylopia sp. nov.*), which has been never described before,

have been identified. A number of these plant species are either CITES listed or are of the IUCN category for threatened species and endemic to Tanzania.

Several dry season aerial censuses were carried out simultaneously in both countries at intervals of three years - the latest in 2006. Accordingly the total elephant population of the entire Selous – Niassa ecosystem seems to exceed 70,000, with the majority in Tanzania. Globally significant populations of Lichtenstein's hartebeest (*Alcelaphalus buselaphus lichtensteinii*), African buffalo (*Syncerus caffer*), Niassa wildebeest (*Connochaetes taurinus cooksoni*), Eland (*Taurotragus oryx*), Greater kudu (*Tragelaphus strepsiceros*), Common waterbuck (*Kobus ellipsiprymnus*), Bushbuck (*Tragelaphus scriptus*), Common Reedbuck (*Redunca arundinum*), Zebra (*Equus burchelli*), Impala (*Aepyceros melampus*) and Klippspringer (*Oreotragus oreotragus*) are linked by the corridor. Their distribution and occurrence varies substantially depending on the rainy or dry season and their location in the corridor. Large numbers of Roosevelt's sable antelope (*Hippotragus niger roosevelti*) are widespread throughout the corridor. Beside these species both reserves and the corridor are home of a variety of large carnivores including African wild dog (*Lyacon pictus*), Lion (*Panthera leo*) and Leopard (*Panthera pardus*) and Spotted hyaena (*Crocuta crocuta*). Other wildlife includes Crocodile (*Crocodilus niloticus*) and Hippopotamus (*Hippopotamus amphibius*). The highly endangered Black rhino (*Diceros bicornis*) is still found in both reserves and the corridor, but numbers are low. The ecosystem has also a rich diversity of bird life. Migratory birds use the Ruvuma River area as a nesting or resting place on the flyway route from Northern Europe to South Africa.

The Selous - Niassa ecosystem is one of the largest trans-boundary natural dry forest eco-regions in Africa. With a size larger than Malawi it constitutes one of the largest elephant ranges in the world and contains half of the world remaining wild dog population. Furthermore it supports a large number of other globally significant, threatened and CITES listed fauna and flora species. In order to conserve the integrity of this eco-system it is of utmost importance that the SNWC provides and maintains a permanent link between two largest protected areas of Tanzania and Mozambique enabling migration of wildlife and gene flow and contributing to the conservation of biodiversity.

3.2 Historical Background of the Area: From War to Peace – Poverty Remains

In order to comprehend the development of the conservation concept and the process of trans-boundary cooperation it is necessary to have a look at the history, which has been dominated by decades of slave trade, migration, displacement of people and armed conflicts. Long distance trade mainly with slaves and ivory using old trading routes to the settlements of Kilwa and Mikindani at the Indian Ocean and wars in the pre-colonial and colonial time as well as later in Mozambique for independence had its influence on the culture and the livelihoods of the people living in and around the corridor.

The original ethnic groups settling in the corridor area were the Udendeule and Ngindo. Whereas the Udendeule remained in the area the majority of the Ngindo migrated north eastwards and settled later in the Liwale and Rufiji districts in the course of time. The Ngoni, a splinter group of the Zulu warrior tribe, migrated from South Africa, and the Yao, known for their slave and ivory trade, moved from Mozambique into Tanzania as early as in the 19th century. The area was then divided into chiefdoms and ruled by local chiefs. Raids of villages by the Ngoni tribe, slave trade and the Maji Maji War against the German colonial administration (1905-07) followed by World War One (1914-18) had caused a tremendous depopulation. Gravesites of famous chiefs, caves used as hide out during the Maji Maji War and battlefields from World War I are still relicts of this era.

Whereas Tanzania had reached peacefully its independence in 1961, Mozambique became independent only in 1975 after years of bloody guerrilla warfare. Independence did not bring peace. Instead one of Africa's most cruel civil wars continued with foreign involvement until an UN-negotiated peace agreement ended the fighting in 1992. It left infrastructure destroyed, 900.000 deaths and 1.3 million refugees in the neighboring countries.

The Mozambique independence war and the following civil war destabilized the entire Southern Africa. The Pan-African and anti-colonial President of Tanzania, Julius Nyerere, supported Mozambique even at the expense of the welfare of his own country. Consequently the south of Tanzania suffered from the ongoing war in the northern provinces of Mozambique. Many thousands of war refugees were hosted in numerous refugee camps in the south. With the permanent fear of an invasion, the Tanzanian Government closed the southern border area for many years and moved villages along the Ruvuma River further north. After 1992 the

war refugees of Mozambique were peacefully repatriated, but still the common border of 756 km length witness this era of war, as it still remains one of the most underdeveloped zones of both countries. Until 2008 there has not been even a single bridge crossing the Ruvuma River, which forms the boundary, thus preventing transport, communication and trade and consequently economic development.

The end of the civil war in Mozambique changed the regional political scenery, which led to the establishment of majority governments in Zimbabwe and South Africa, and the end of the cold war enabled both countries to redefine the contours of their policies. They provided for multiparty elections and a development towards a free market economy. Mozambique and Tanzania are members of the South African Development Community with the vision of a common more prosperous and peaceful future within a regional community. An initiative by the Governments of Tanzania, Mozambique, Malawi and Zambia and supported by South Africa aims to develop the Mtwara Development Corridor, including the Ruvuma interface. This focuses on the regional integration of infrastructure networks and all kinds of development initiatives. Its aim is to reduce poverty by stimulating broad-based economic growth. Wildlife and forests are still abundant, however threatened, and their sustainable use including tourism could develop into an important regional asset.

Today the border between Tanzania and Mozambique is rather a zone of underdevelopment and poverty than a zone of hostility or border conflicts. For the peace to continue it needs the development of infrastructure, communication and economic growth, which is only possible if both countries join hands. The Selous-Niassa Wildlife Corridor, which is presented in this paper, is an integral and important component of this process.

3.3 Communities of the SNWC

The corridor extends with about 9000 km² protected area entirely on the land of 29 villages within the administrative areas of Namtumbo and Tunduru districts in Ruvuma Region. With approx. 4.5 people/km² the area is sparsely settled. The main ethnic groups are the Udendeule, Ngoni and Yao. They still keep up their own culture which is expressed in their own language, music and dance. The chiefdoms have been abolished years ago and replaced with local government structures, but the chiefs maintained their function as spiritual and cultural leaders. Local people

still maintain strong cross-border ties with people of the same ethnic groups settled in Mozambique. Relatives are visited regularly, intermarriages take place and pilgrimages to grave sites of famous chiefs are undertaken annually. While using locally made dug-out canoes to cross Ruvuma River, a more or less porous border between both countries, a local barter economy developed. Some of the traded items like bush-meat, ivory and weapons and ammunition left over from the war times in Mozambique contributed to the depletion of wildlife in the border area.

The economy of the corridor communities is based to 95 % on subsistence farming. Staple crops grown are maize and cassava, with cash crops predominantly of tobacco, sesame, sunflower, rice, groundnuts, beans, cashew nut and occasionally green or red pepper. In the absence of or because of the exorbitant prices of fertilizer shifting cultivation is still practiced. Livestock is mostly restricted to goats, sheep and chicken. Cattle are rare due to the presence of trypanosomiasis transmitted by Tsetse flies in the region.

Their dependency on natural resources is rated as “very high”. Natural products collected regularly include poles and timber used for house construction, furniture and household items, tree bark is converted into containers, local canoes and ropes, trees used for the construction of dug out boats, grass for thatching, reeds and fibres serve for mats, baskets and fish-traps. The natural environment also contributes to the steady supply of wild fruits, mushrooms, honey, beeswax, traditional medicines and (legally or illegally) fish and bush meat. Firewood is the main source of domestic energy for cooking for over ninety-six percent of all households in the two districts with no affordable energy alternatives in the foreseeable future.

Because of reasons explained in the previous chapter the area has been isolated for many years preventing the development of infrastructure and social amenities. Roads have been impassable during the rainy season and public transport is very limited. The entire area does not have electricity supply and clean water supply is limited to a number of wells. Although schools can be found in all villages high drop-out rates and low quality teaching resulted in a comparable low educational level. Only recently the rehabilitation of rural roads and the extension of a country wide cell-phone network improved the situation somehow.

There have been severe threats to the continued existence of the SNWC before any development and conservation initiatives were started. If they would have left unattended they would not only have blocked the migration of wildlife and the genetic exchange facilitated by this important biological link. They would also have lead to irreversible loss of biodiversity and reduced ecosystem services provided for by the natural forest systems. This includes their positive impact on the water balance and prevention of flash floods and soil erosion on regional level. On global level they have the potential of carbon dioxide sequestration impacting on climatic change. Ultimately those threats described in this chapter might also destroy the resource base on which the livelihoods and survival of the local communities depend.

Uncontrolled and unsustainable natural resources use and unplanned and unregulated conversion of land for agricultural as well as ribbon strip development along the major transport routes were the main threats to the biodiversity within the SNWC and its role to provide a biological link. They are exacerbated by the high human population growth rate in the corridor area of 4.3 %.

Immediate threats were the bush-meat trade supplying the local markets and ivory poaching, both a local and trans-boundary problem. Already as early as 1989 surveys showed that poaching of elephants for meat in southern Tanzania was a grave problem. It could not be solved by international trade-bans. An agreement on cross border law enforcement between the Tanzanian and Mozambique Governments did not exist at that time.

A further threat is habitat degradation due to uncontrolled wildfires caused by the local population. In the long run the high human population growth and associated agricultural expansion will increasingly convert this still biologically intact corridor to cultivation.

Tobacco and increasingly paddy farming in suitable wetlands contribute to the loss and fragmentation of natural habitat. In combination with ribbon strip developments along the major roads they will form a genetic blockade between the world's largest protected miombo forest ecosystems and wildlife habitats. The obstruction of the movements of large herbivores such as the African elephant will ultimately result in increased human – wildlife conflicts. Crop damage by elephants and man-eating by lions are already major problems.

According to experience people will intensify farming and settlement along roads. There are still gaps between villages along the major roads through which the animals move, but it can be expected that in the future human pressure will increase and lead to the blockage of those gaps. This relates in particular to the Songea – Tunduru highway. This road is due to be upgraded and much speculation is already taking place in expectation of rising land values. A modernised highway will definitely improve the accessibility and open up the area for other markets including wildlife based tourism. However an environmental impact assessment and action is required to mitigate any negative impact on the migration of wildlife and consecutively to safeguard those bottlenecks of the Corridor. Dense human population and agricultural activities to the east along the Tunduru – Mtwara highway already prevent wildlife movements between the Niassa Game Reserve and Tanzania.

Within the corridor, intensive fishing activities and extensive snare-lines from poachers along Ruvuma River and some of its tributaries disturb the wildlife movements there and have lead to a dramatic reduction of wildlife populations and local extinction of some species. This effect is greatest in the dry season, when the animals are most dependent on water from the river. Furthermore destructive and uncontrolled fishing methods including the application of poisonous plants and pesticides deplete the fish stocks of the rivers and damage the aquatic fauna.

Uncontrolled and illegal commercial logging for valuable and marketable hardwoods was also observed to increase parallel to the growth of the major towns and the improvement of the road system. If not controlled or prevented it will soon lead to a genetic depletion of some valuable species and a massive financial loss for the local and national governments.

Of great concern are developments in the field of mineral exploration. Only recently large deposits of uranium were discovered in the northern part of the Corridor and within the Selous. Neither was an independent social and environmental impact assessment carried out previous to prospecting activities nor is one available for planned mining operations although hundreds of square kilometres of the pristine ecosystem will be affected. Also the actual high prices for gold and other minerals are increasingly attracting uncontrolled artisanal exploration resulting in major ecological damages within the ecosystem.

Those threats mentioned, although more specific for the Selous - Niassa Wildlife Corridor, are more or less representative for similar situations of other threatened eco-systems in Africa. They have complex causes like bad governance and corruption on different levels, inadequate management regimes and capacities, lack of law enforcement, poverty, lack of awareness, low educational level and therefore need an integrated approach towards improvement.

Looking at the history of the area, traditional management systems controlled by ethnic groups and chiefs have been lost and finally replaced with a centralistic state monopolizing the management of wildlife and other natural resources. That way communities living at and from the resource base lost control and ownership for the resources of their immediate environment. The Government however, was not able to provide enough resources for the protection and adequate law enforcement and consequently an “open access system” to the resources developed. In the southern part of the corridor in particular wildlife suffered from these phenomena, also called “the tragedy of the commons”, and was exacerbated by the isolation and limited accessibility of this border area during past armed conflicts.

4. COMMUNITY BASED NATURAL RESOURCES MANAGEMENT (CBNRM) IN TANZANIA: THE WILDLIFE MANAGEMENT AREA APPROACH

Almost simultaneously with a Government decentralization process a Community Based Natural Resources Management policy developed in Tanzania aiming at empowering district councils and communities to manage their own resources. For this purpose the experience gained during the implementation of various CBNRM initiatives in the wildlife sector have been combined and adopted. They were largely based on the Wildlife Management Area (WMA) approach pioneered around the Selous Game Reserve. In 2003 the Ministry for Natural Resources and Tourism legalised this approach with the endorsement of the Wildlife Management Area Regulations and the Guidelines for the Designation and Management of WMAs. They confirm the right of communities to conditionally manage and utilize wildlife and other renewable resources on village land registered under the WMA legal framework.

Legally the WMA process applies only to village land of officially registered villages. The land tenure in Tanzania is governed by the Land Act of 1999. In general, all land in Tanzania is public and vested in the President who is the trustee



of the land for and on behalf of the citizens of Tanzania. Village land is one of three official categories for public land and governed by the Village Land Act of 1999.

The establishment of a Wildlife Management Area in Tanzania requires participating villages to develop a land use plan with areas designated for specific uses. In the event that land from more than one village is included in a single WMA, a joint village land use plan has to be developed. Demarcation of individual village boundaries as part of the land use planning process is part of the requirement. Since in many cases the boundaries of the villages are not officially registered they have to be surveyed and endorsed by the village assemblies, District Land Office and the Ministry of Lands. Finally a certificate of village land boundaries will be issued and gives security of land tenure.

The actual land use planning process is conducted by a Participatory Village Land-use Planning and Management Team composed of village members and a multi-sectoral team from the District Offices. The draft land use plan has to be endorsed by the Village Assembly, District Council and the National Land-use Planning Commission.

The participating villages will have to form a Community Based Organisation (CBO) and a Board of Trustees, both in charge of the management of the WMA. They have to be officially registered with an own constitution.

In order to receive user rights over wildlife a General Management Plan for 10 years or an interim Resource Zone Management Plan for 5 years has to be developed. They govern the spatial use of natural resources located within the WMA. This includes areas for hunting or non-consumptive wildlife based tourism, forest utilization, bee-keeping or fisheries. Other forms of utilisation like human settlement or farming are not allowed. Limited to the sustainable use of natural resources a WMA is in accordance with category VI of the IUCN definition for protected areas.

Once all conditions have been fulfilled and approved by the Wildlife Department the WMA will be officially gazetted and the CBO will receive the status of an Authorised Association (AA). Granted user rights relate to wildlife only. They can include a quota for “bush meat” (community consumption), trophy hunting, non-consumptive tourism and live animal capture to be re-sold for stocking purposes.

For this purpose the AA may also enter into investment agreements or joint ventures with the private sector. The utilization of the other natural resources has to be carried out according to the relevant specific laws like the Forestry, Bee-keeping and Fisheries Act and their regulations.

An AA is responsible for the day-to-day management of the WMA and does employ village game scouts responsible for law enforcement, fire management, the hunting of game allocated as “village quota” and supervision of trophy hunting and tourism. The AA is required to make annual budget plans and is accountable to the respective village councils. According to the decision of the member villages, income generated in the WMA will account for its regular management cost and necessary investments. With a remaining surplus village development projects outside of the WMA can be supported.

Numerous institutions and organizations are involved in the establishment and management of WMAs. The natural resource office of the respective district council has an advisory and supervisory role during the establishment and management of the WMAs. CBOs or AAs are represented in the District Natural Resources Advisory Body established to discuss and approve joint venture agreements or for the arbitration of disputes. The highest authority is the Wildlife Department of the Ministry for Natural Resources and Tourism.

In principle the policy and legal framework of the WMA approach provides the village councils with a legal tenure to communal land registered under a WMA and devolves the authority over wildlife resources with associated tangible and intangible benefits. Furthermore the legally binding land-use plans and gazettelement of WMAs prevents land conversion for agriculture and the fragmentation or destruction of wildlife habitats. However, the legal process developed by the Wildlife Department, is complicated, overregulated, and lengthy and implies high transaction costs, which make it impossible for communities to comply with without external assistance. In order to make the WMA approach successful and mainstream the entire process will have to be simplified.



In 1987, at the request of the Tanzanian government, which was experiencing a widespread serious poaching problem, the Selous Conservation Program was initiated as a joint program between the Wildlife Division of the Tanzanian Ministry of Natural Resources and Tourism and the German Agency for Technical Cooperation (GTZ) on behalf of the German Government. The goals of the SCP were to strengthen and rehabilitate the management of the Selous Game Reserve (SGR), secure sustainable funding for the reserve, and to significantly reduce conflicts between SGR and the neighboring local population by promoting sustainable wildlife utilization as a vehicle for rural development in local communities. With the aim to establish community managed buffer-zones outside the reserve, which has led to the development the WMA approach, the SCP program pioneered community based conservation within Tanzania.

In 1991 the SCP expanded its buffer-zone program to the south of the SGR and included 11 villages of Namtumbo (before 2003 Songea District) and Tunduru District. Starting with self-help development projects, awareness creation and land-use planning the first provisional WMAs were established on a pilot basis. Village natural resources committees were in charge of the wildlife management and village game scouts became responsible for patrolling of the area. After poaching was reduced wildlife populations recovered and allowed for the development of hunting tourism and the allocation of a village game quota. Contributions from the hunting companies, 25% of game fees from hunting tourism to be shared with district councils' wildlife sections and the sale of legal bush-meat accounted for the first income generated by the village governments from wildlife management.

One of the major preconditions for enabling communities to manage their own resources was seen in training and capacity building. With community conservation developing in different parts of Tanzania the demand for standardized training for community leaders and village game scouts was increasing tremendously. This led to the establishment of the national Community Based Conservation Training Centre (CBCTC) in Likuyu, one of the buffer-zone villages, with the support of the SCP. In 1992 the civil war in Mozambique ended with a peace agreement and war refugees were repatriated and their camps in Tanzania closed. Using the infrastructure of one of those refugee camps the CBCTC started to conduct its first training courses in 1996.

The WMA approach and its prospects to receive the rights of self-determination over wildlife and natural resources and income from its management motivated other villages in the south to request for integration into the community conservation program. Some villages started already on their own accord to demarcate their future WMA and sent young men as village game scouts on patrol. At that time the SCP project was not in the position to respond positively to all village requests, however the buffer-zone of the SGR was extended and the number of participating villages increased to 17. Nowadays they are organized in two Authorised Associations, namely "Mbarangandu" and "Nalika", for the management of two WMAs. Those are located in Namtumbo and Tunduru District and protect with a total size of 4600 km² the northern section of the SNWC.

Villages located close to the Mozambique border had also requested for the community conservation scheme and reported about wildlife in their area and elephants crossing Ruvuma River during seasonal migrations. This gave reason to include the entire area of the SNWC for the first time in an aerial game survey of the Selous ecosystem in 1998. It revealed that wildlife populations in the northern part were quite high and stable whereas the southern part contained by far less wildlife. One year later a survey of this formerly restricted area was conducted on the ground on foot and confirmed the sightings from the air: Kilometers of snare lines were blocking the access of wildlife to any river. Basically only sable antelopes had survived in larger numbers the slaughtering. Animals escaping the deadly traps were hunted with muzzle loaders or automatic weapons, remaining in large numbers from the war in Mozambique. Naturally, as is the case at any border, the Tanzanian villagers were blaming the Mozambicans and vice versa.

Based on the positive experience made with the community conservation approach in the bufferzone at the Selous border an idea emerged to close the gap of about 80 km distance between those two WMAs in the north and the Ruvuma River in the south, the border with Mozambique and the Niassa Reserve. Additional new WMAs were to be established in the south and connected with those of the North, thus creating a contiguous network of WMAs linking the Selous with the Niassa Reserve. Thus, the elementary concept of the Selous – Niassa Wildlife Corridor was based on community conservation.

Villages, District Councils and the Wildlife Department agreed to this concept. However as the south of Tanzania had been totally unknown to science additional research had to be undertaken to obtain a scientific foundation for the development of a detailed conservation strategy for the wildlife corridor. Furthermore the serious poaching situation, obviously a cross-border problem, made it necessary to establish communication and cooperation with the management of the Niassa Reserve, which only recently had emerged from the dark shadows of war.

In order to obtain financial assistance from the Global Environment Facility in form of a medium sized project for the establishment of additional WMAs in the southern part of the corridor UNDP was approached. The preparation phase for this project included the identification of additional 12 villages and the planning of the project during a workshop held in Songea town, the capital of Ruvuma Region, in 2001. Among the participants were the representatives of all 29 corridor villages, district councils, Wildlife Department and the Niassa Reserve Management. After this workshop the 12 new villages requested formally for the project and to show their determination they provided information about hidden depots with war material in the Niassa Reserve. Those were soon after identified and destroyed thus drying out a substantial supply of arms and ammunition for armed poachers gangs.

5.2 The Selous – Niassa Wildlife Corridor Research

In order to collect the necessary scientific information on the migration of wildlife and the gene flow between the two game reserves and within the corridor a research project was developed. The technical responsibility for its implementation was commissioned to the Institute for Zoo Biology and Wildlife Research (IZW) of Berlin, Germany. From 2000 to 2003 the IZW, the Sokoine University of Morogoro, Tanzania and the Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) carried out the Selous – Niassa Wildlife Corridor Research Project in the wildlife corridor. It was financed by the German Government in cooperation with the Wildlife Division and the Tanzanian Wildlife Research Institute. In a combination of state of the art technology, including satellite tracking and indigenous local knowledge, scientific data about the presence of elephants and their migratory behaviour were obtained. Additional relevant wildlife data were collected with the assistance from Tanzanian scientists, Wildlife Division and district wildlife staff, village game scouts, traditional hunters and local people. Of great advantage was the good relationship

with the Niassa Reserve staff providing assistance with the removal of collars from elephants found in Mozambique. The research proved that the corridor is not only a transit route for elephants between the two game reserves in the north and south, but also sustains its own sizable resident population. Some elephants make use of large sections of the corridor by virtue of maintaining very large home ranges. They move across the central and southern sections, with extensive movements between Tanzania and Mozambique, and within the Niassa Game Reserve. The fact that there are conspicuous and well-established major elephant movement routes that cross the entire corridor also suggested that some elephants may be entirely transient and move between the adjacent Game Reserves. Hence, any fragmentation of the elephant habitat would be a grave disadvantage. Not only did the results emphasise the status of the area as a true trans-boundary ecosystem, they also pinpointed the value of the corridor as a link between the Selous and the Niassa elephant populations in terms of breeding and genetic exchange. The key results of this research, like eco-system description, identification of migration routes, wildlife population size and human-wildlife conflict areas, have been used for the development of a conservation strategy for this corridor.

5.3 Closing the Critical Gap

From the planning and application for the UNDP/GEF financed project in 2001 it took four years until it was finally launched in 2005. GTZ-International Service was the implementing agency. Meanwhile the SCP project had been already terminated in 2003 and another GTZ support, the “Community Wildlife Management Project”, which rendered support to the WMA process in the northern Corridor, was about to close as well. The two CBOs, Mbarang’andu and Nalika, responsible for the two planned WMAs in the northern section were still struggling to comply with the complicated WMA regulations in order to get their official recognition and user rights over wildlife like all other pilot areas in Tanzania. Their applications to the Wildlife Department were often not processed or not accepted and returned, which nearly stalled the process of community conservation. Without consulting and informing the respective district councils or village governments the Wildlife Department had surveyed the southern corridor from the air and divided the entire area into hunting blocks. Those had been allocated to a number of hunting companies who demarcated the block boundaries on the ground while cutting through farms and villages. However, in the southern part hunting tourism could



not take off because the wildlife populations were too small and unsuitable for trophy hunting at that time.

Reports criticizing the lack of transparency and accountability within the hunting system and TRAFFIC East/Southern Africa's exposure of undisturbed illegal logging in the entire south-eastern part of Tanzania with estimated losses for the Government of more than 50 Million US \$ triggered a public and Parliamentarian debate about the condition of poor governance within the Ministry of Natural Resources and Tourism. The governance issues had not only led to a stalling of the community conservation process in general but had also effected the conservation situation in the corridor. Disappointed about the slow progress in developing the WMAs and associated lack of economic benefits farmers of some villages started to encroach into the proposed WMAs in order to cultivate paddy in wetlands; under this circumstances a more lucrative form of land-use than wildlife management. Furthermore the scale of illegal logging activities increased tremendously in the entire corridor area. The start of the UNDP/GEF project supporting the establishment of the SNWC and community conservation was delayed. Only due to remarkable support and political pressure from the Local Governments, District and Regional Administration the project was able to start with its implementation.

The main focus of the UNDP/GEF project was on the unprotected southern part of the corridor, constituting the remaining gap between the Selous Reserve, its northern buffer-zone and the Niassa Reserve. Closing this gap was imperative to secure a long-term linkage between the protected area systems and create a viable wildlife corridor. While applying the CBNRM approach the project was to facilitate the establishment of additional WMAs providing for a formal protection status in the southern part of the corridor with the aim to create a contiguous network of WMAs for the entire corridor.

Formally anchored within the Ministry for Natural Resources & Tourism the project implementation was carried out in cooperation with the respective District Councils. On technical level with a lean management structure a small project team worked together with district natural resources and other technical officers during the implementation of activities. The project technical adviser, placed by the Centre for International Migration and Development of GTZ, was himself a district employee. This integrated approach provided for a good communication,

contributed to capacity building on district level and enhanced the districts' ownership for the project. Complying with GEF conditions the steering committee supervising the project implementation was not only composed of high government officials but also CBO representatives. Thus, communities were provided with an opportunity to raise their voice, contribute to the development process within their area and develop to a serious partner.

Large financial investments into awareness raising, education and capacity building were undertaken and considered as a way towards empowerment and development of the communities from recipients of development aid, charities and handouts, as is often the case, to active players during the entire implementation process. At last this often tedious and time consuming work was aiming at enabling the communities to manage their natural resources and WMAs on their own.

5.4 Putting Community Conservation into Practice

The project implementation was launched with an awareness campaign and targeted specific user groups and the local population of the corridor on broader scale which was later extended to the national and international level. While addressing issues of natural resources management and biodiversity conservation it aimed at the promotion of the SNWC at large, its specific CBNRM approach and its potential for the regional economic development. This was done with the view to change local people's attitude and behavior towards their natural environment, increase the acceptance of necessary alterations in the management regime and influence policy and decision makers on different levels. The campaign included environmental education in primary and secondary schools, movie shows in the villages, official inauguration of the SNWC during Independence Day, distribution of T-shirts with SNWC logo and participation and presentations at regional and national trade fairs and international workshops. As a result the SNWC, locally also known as "USHOROBA", gained such a popularity that a secondary school, restaurants and several pubs and groceries were named after the corridor, thus indicating that the ownership and pride in the own achievement regarding to the SNWC was adopted by the local population.

An innovation for the effective enhancement of community awareness was the recording and production of local music highlighting the value of the corridor to

the local communities and the need for its sustainable management. The music was performed by the local SNWC Cultural Group with financial assistance of the International Council for Game and Wildlife Conservation (CIC). Its distribution with music tapes, CDs, free download from the project's website and nationwide broadcasting by radio stations reached as far as the neighbour communities in Mozambique. The music provided a linkage between the environment and social and cultural aspects and contributed to the pride of the communities and their identification with the SNWC.

In 2008 awareness about the SNWC and its unique conservation concept reached its culmination when the CBOs of the SNWC together with the Niassa Reserve received the prestigious "Markhor Award for Outstanding Conservation Performance" from the International Council for Game and Wildlife Conservation (CIC) during the Conference of Parties of the Convention for Biodiversity in Bonn, Germany. The award honored the CBOs' commitment to conservation and their achievements despite the rather unfavorable political environment they were faced with. At the same time the award was an encouragement for the communities to continue with their efforts and not to succumb to the headwind.

According to aerial surveys undertaken in three years interval, the last carried out in 2006, wildlife numbers in the northern section of the SNWC had increased to that extent that hunting tourism and village hunting for bush-meat supply could be carried out on a sustainable basis. Wildlife populations have been stable during the last years and have provided for frequent income albeit little benefits for the villages responsible for its conservation. However in the southern part towards Ruvuma River excessive poaching had reduced tremendously the wildlife populations leading certain species most vulnerable to prevailing poaching techniques to the brink of local extinction. For example the Niassa wildebeest had been already locally extinct and of buffalo, zebra, hartebeest and impala populations only few small groups remained. And in 2006, during a study along a stretch of 176 km of Ruvuma River, the interface between the SNWC and Niassa Reserve, only 26 hippopotamus were counted. However greater kudu and in particular the sable antelope population had astonishingly well survived over the years.

The fast rehabilitation of the wildlife population with its high economic potential for consumptive and non-consumptive tourism has been imperative in order to

make the communities realize the benefits from its conservation. Therefore law enforcement had to start immediately in order to get this poaching situation under control. Selected game scouts from each village were trained during a 6 weeks course and received basic equipment. Village governments approved and published an anti-poaching reward scheme with the effect that a number of poaching equipment in particular muzzle loaders were voluntarily handed over. Teams composed of rangers from Selous, anti-poaching units and districts together with village game scouts carried out intensive patrols in the first year. With their concerted effort more than 240 muzzleloaders and 5500 nylon rope snares were confiscated and dozens of illegal logging camps closed. Since poaching within the corridor had been significantly reduced and slowly getting under control activities had started to concentrate on cross-border poaching issues. Because rather professional and well armed gangs are operating along the boundary, law enforcement is beyond the capacity of villagers and their game scouts. Instead they assist professional law enforcement personnel as informers or guides to inaccessible areas. Combating poaching in the vast and hardly accessible areas along the border demands good communication and coordination of the personnel involved. Often teams are composed of rangers and scouts from districts and Selous Reserve, zonal anti-poaching unit and police force on Tanzanian side. Joint patrols are carried out with the Niassa Reserve rangers and Mozambican border police along Ruvuma River. Because the law does not provide yet for follow up action across the border the teams have to operate on their respective side of the border and communicate with handheld radios. However the effectiveness of the cross-border cooperation in anti-poaching is still impeded by a number of factors. The inaccessibility of vast areas on either side of Ruvuma River prevents the fast deployment of patrol teams and the coordination is still hampered by an insufficient communication network. Also the availability of funds to finance the rather expensive patrols limits the number of days spent in the field. Improvements are in progress or planned and include e.g. the extension of a wireless communication network in the Niassa Reserve and the SNWC, the deployment of patrol boats on Ruvuma River, extension of the informers' network, production and distribution of cartographic material covering the cross-border area and exchange of data about suspects involved in illegal trophy trade.

The intensive anti-poaching efforts in the Southern Corridor, started in 2006, already show first results. Patrol reports and anecdotal evidence indicate that the wildlife populations are slowly recovering and that a natural re-colonization of

buffalo and elephant populations originating from the Niassa Reserve takes place. The growing elephant populations and increasing elephant traffic across Ruvuma River have, however, resulted in a noticeable increase of human-elephant conflicts with some adverse impacts on the rural communities of this area. Crop damage by marauding elephants and other wildlife is slowly becoming a threat to the livelihood of farmers in certain villages. It has to be monitored whether the implementation of the new land-use plan for this area and the introduction of non-lethal deterrents for elephants, the application of pepper treated cloths and ropes, have a positive effect on the human wildlife conflicts.

An extensive training program provided the communities with the legal and technical knowledge necessary for the planning and establishment of their conservation areas and the management of their land and natural resources. This comprised a variety of educational topics ranging from village land legislation and integrated natural resources management for the preparation of land-use and natural resources zoning plans to more specific instructions of resource users about bee-keeping and fish farming. New institutions were established in the area including natural resources committees in all villages and three Community Based Organisations. Their office holders were prepared for their new positions with training at the CBCTC in Likuyu about legislation and management of natural resources, basic book-keeping and accounting and in a separate session in entrepreneurship and business management skills. To complement the training programs relevant legislations, technical training manuals and additional information translated into Kiswahili language were distributed. During several study tours to other WMAs, National Parks, and the North Selous the participants from the villages, local governments and district administration could establish contacts and share their experience with other communities. First time out of their home area they could experience wildlife based tourism and discuss its economical potential and other implications with the private sector. Although the study tours had been costly they accounted for the longest lasting educational effect and opened up villagers' mind about a shared vision for the development of the southern corridor.

Provided with training and education about the management of land and natural resources, both constituting the lifeline of rural communities, the villagers were well prepared to participate meaningfully in the most important and expensive phase – the spatial planning for the establishment of WMAs on village land. Because this activity

was beyond the financial capacity of the UNDP/GEF project assistance was provided by the German Development Bank (KfW), which started a complementary project for the entire SNWC at the end of 2007. Prerequisite to any development planning was the resurvey of the land of all 12 villages, which included mutual agreements concerning border conflicts between different villages. This followed the preparation of the land-use plan for each individual village with the aim to identify and survey the borders of the future WMA. This process is rather complicated and lengthy because the separation from farm and conservation area includes the settlement of numerous conflicts within a village until the village general assembly finally endorses the plan. The entire process resulted into three new proposed WMAs, namely Kimbanda, Kisungule and Chingoli, with a total area of 4200 km² and to be managed by three CBOs on behalf of the villages. The final step of this process and a condition for the application of user rights over wildlife was the accomplishment of resource zone management plans for each WMA. This included the spatial designation of areas for hunting tourism and village hunting, non-consumptive tourism development zones, fisheries, bee-keeping and forest management zones.

6. BROADENING THE CONCEPT: FROM WILDLIFE TO NATURAL RESOURCES MANAGEMENT

The initial idea for the WMA approach was to conserve wildlife outside national protected areas and on communal land based on the assumption that wildlife management in terms of hunting and non-consumptive tourism can economically out-compete other forms of land-use, in particular subsistence farming. Those economic incentives were supposed to contribute to the economic development of communities, improve their livelihoods, reduce poverty and consequently increase their acceptance for wildlife and conservation. However, while this underlying principles have been put into practice rather successfully in other countries of Southern Africa, in Tanzania the implementation process of relevant policies and regulations has come to a stalling since adequate benefit sharing formulas have never been formulated or applied. Governance issues and the hesitation of the Ministry for Natural Resources and Tourism to devolve power to the communities have led to a situation in the northern SNWC, which is representative for all other WMAs in the country. Villages of the CBOs Mbarang'andu and Nalika are paying the price for conservation in terms of management costs, crop destruction and lost opportunity cost from 4600 km² of land under conservation. From the highly lucrative hunting tourism operating in their area they have received in monetary



terms for years so far not more than the equivalent meat value of half of the animal quota hunted by clients per annum. This calculation is based on the local meat price of 2,5 US\$ per kg.

The initial situation in the southern SNWC has been different. Wildlife populations have been so small that their rehabilitation to a viable economical asset still required time and conservation efforts. But the communities had high expectations in the SNWC to contribute immediately to the improvement of their livelihoods.

These circumstances made it necessary to widen the spectrum of sources for income generation from other natural resources as alternatives to wildlife and to develop an economic diversification strategy which increases the WMAs contribution to the economic development. Therefore the potentials of other available natural resources and ways to put them into value had to be investigated and developed. This included also a change from exclusive communal management regimes to a development of a private sector and enterprise culture within the communities. That way the CBO management would have to transfer parts of the business or entrepreneurial activities in the WMA to individuals or groups of individuals originating from the community. This incentive orientated new private sector is in general more efficient in the production and delivery of services than communal organizations where members have the tendency to look rather for allowances and other personal advantages than caring for delivery and results. Furthermore this approach allows for a shift from collective income to a wider distribution of income reaching directly the household level with the effect to reduce jealousy and conflicts among community members over money issues. It also contributes to the balance of power between the representatives of the CBOs and ordinary villagers. For example the role of the CBOs in bee-keeping and fisheries management has been limited to the supervision of activities, the lease of user rights and issue of permits to individuals or private user groups. Those originate from the villages and utilize the natural resources of a WMA like entrepreneurs.

Because of its vast forests and permanent water streams the SNWC has a high potential for the production of honey and other by-products. Since the end of 2006 the Swiss based NGO "Association for the Development of Protected Areas (ADAP)", has assisted the villages of the northern corridor in the development of

productive bee-keeping. The formation of bee-keeping groups, training in modern and productive bee-keeping methodologies, local production of modern bee-keeping equipment, honey processing and marketing are part of their program. The UNDP/GEF Small Grants project has provided villages of the southern corridor with similar assistance.

End of 2006 the management of the SNWC and Niassa Reserve conducted a joint socio-ecological survey of Ruvuma River at its 176 km long interface between the SNWC and Niassa Reserve. Among other results it revealed that the fish resources had been seriously over-exploited. Too many fishermen were using destructive fishing methods like close-meshed fishing nets and traps and natural poison or sometimes even pesticides; the latter destroying all aquatic life including the offspring of crocodiles. A down-spiraling open access system had developed over the years and increasingly poaching of wildlife along the river had to compensate for losses of income from fishing. Because the majority of fishermen do originate from Tanzania the Niassa Reserve management agreed that Tanzania should be in the lead to reorganize and improve the fisheries management at Ruvuma River with the condition that fishermen were not supposed to fish from the riverbanks in the Niassa Reserve. With the agreement of all stakeholders (District and Village councils, CBOs, fishermen) the number of fishing camps along the river was reduced by half. Fish breeding zones were designated as non fishing areas and the remaining river was then sub-divided into 18 fishing sections. Each section has been allocated to a group of fishermen, who had to conclude a lease agreement with the CBO in charge of the WMA about the exclusive fishing rights in their specific section. The adherence to the fisheries legislation and sustainable fishing methods has to be controlled by the group and supervised by village game scouts and district fisheries officers. Complementary, individuals and private groups of the southern villages have been supported with training, technical advice and equipment to establish fish ponds and engage in fish farming. The high demand for animal proteins accelerated by the rapid growing population and dwindling fish supply from natural lakes and rivers has led to a high interest of villagers to engage in this activity. In 2009 already they have constructed more than 60 ponds and numbers are still rising. An additional positive side effect is the reduction of pressure from human activities on natural water and eco-systems of the WMAs because the fish ponds are located near settlements and farms.



The Miombo woodlands of the SNWC still harbor some considerable amounts of valuable hardwood although illegal logging had already taken its toll until recently when numerous camps were closed and existing legal procedures enforced. One reason for illegal logging is the actual forest legislation which allows only a small percentage of the revenue from timber sales harvested on communal land to be retained by the communities and district administration. The lion share has to be transferred to the Central Government's Forest Division to the effect that the local level management does have hardly any funds available to protect the forests and enforce the existing legislation. The declaration of the Miombo woodlands of the SNWC to village forest reserves would allow for more revenues for the villages from timber sale. However the Participatory Forest Management (PFM) legislation is not compatible with the WMA approach. That can be put down to the fact that the Wildlife Division and Forestry Division, both under the same Ministry, developed their community concepts separately without consultation and harmonization in the process. Therefore parallel management structures have to be set up and management plans for the forests have to be developed, activities which should be started in the near future before the last valuable tree has been cut down.

Another potential is the availability of wild mushrooms during the rainy season. From time immemorial for the local communities an important part of the diet, it was found out only recently that the Miombo eco-system of the SNWC supports 57 different mushroom species. Out of those, 35 species are edible and collected by local people. For example three different Chanterelle species grow in such quantities that they could easily supply other markets. Their marketing would support women who traditionally are the experts and collectors of mushrooms in the villages. Promotion material has been already produced and a marketing study is in progress.

7. TOURISM DEVELOPMENT

Hunting tourism would be the ideal way for the utilization of the wildlife resources in the SNWC because it generates high income, requires only a minimum of infrastructure and hardly leaves a negative impact on the ecosystem. However, first of all the two existing hunting blocks in the northern SNWC are underutilized and their economic potential not fully developed. The hunting block located in the WMA of the CBO Mbarang'andu could easily support with its size of 3000 km² and actual wildlife population two hunting blocks and thus generate more

revenue. But the Wildlife Department did not respond to the CBO's requests to split this hunting block. Secondly, hunting tourism in the actual situation hardly contributes to the economical development of the communities because of the reasons elaborated in chapter six. In the southern corridor wildlife populations are slowly recovering and some species could be hunted already on a sustainable basis. Because of the negative experience made by their neighbours in the northern corridor the communities of the southern corridor have earmarked only few areas of their future WMAs for the establishment of hunting tourism. The future developments in hunting tourism of Tanzania will show whether communities can consider this specific way of tourism as an economical option to use wildlife. So far the hunting tourism industry in Tanzania has disapproved of the WMA policy and did not cooperate with its implementation. As a result communities are increasingly attracting photographic tourism enterprises, which started to operate in hunting blocks. This has been leading to a number of conflicts and will result in the long term to the conversion of suitable hunting areas into photographic tourism concessions. In principle hunting tourism has a higher revenue potential, however, the lack of benefit sharing has the effects as described.

Non-consumptive wildlife tourism could be an additional income diversification strategy for the communities. According to a pre-feasibility study for the development of responsible tourism the southern part of the corridor, with its outstanding landscape and the Ruvuma River, has a great potential for tourism development. Here tourism could integrate nature and wildlife with an authentic rural African culture experience, complemented by a range of soft adventure activities and cultural interaction between the local people and tourists. Because of its isolation and difficult accessibility southern Tanzania and northern Mozambique have been hardly known to tourism. Taking into consideration that the development of a new tourism destination needs a long lead time the promotion of the SNWC had been started early and in cooperation with the Tanzanian Tourism Board and Tourism Division. An increasing interest of the private sector in tourism investment possibilities shows already the first fruits of this investment. During the resource zone planning for the new WMAs villagers designated potential areas as tourism development zones. Once the WMAs have been officially gazetted and user rights over wildlife transferred to the CBOs they will be able to legally enter into joint ventures with the private sector. In the meantime the promotion continues. An increased cooperation with the Niassa Reserve and northern Mozambique in this



matter could reduce promotional costs and produce additional synergies. For local communities to profit from tourism additional expertise will be required to provide advice in joint venture agreements, product and supply chain development as well as for training in hospitality and service. As part of the preparation for future tourism development the CBCTC included already basic tourism management in its training syllabus for communities and has started to tailor courses for the training of local tourist guides.

8. CROSS-BORDER COOPERATION IN PRACTICE

The beginnings of cross-border cooperation had been rather down to earth. In 1998 wildlife and conservation managers in Southern Tanzania and from the Niassa Reserve of Northern Mozambique had started to communicate. This was triggered by the common interest to reduce poaching as a cross-border issue and the Tanzanian border villages' request to participate in community based conservation. The process was facilitated by a German development cooperation program in Tanzania which had assisted the Selous Game Reserve and the communities in the bufferzones since the 1980ies. Slowly communication on security matters and anti-poaching developed into broader cooperation. Visits by reserve managers took place, management experiences were exchanged and a joint vision evolved; namely to establish a wildlife corridor between two large protected areas and to coordinate conservation management in an eco-region divided by a boundary between two states which were not ready yet to cooperate on conservation matters. At that time it did not seem possible and feasible to formalize this cooperation at the official Government levels.

This good neighbourhood relationship made logistics at the boundary easier during the implementation of the Selous - Niassa Research project and had led to a coordinated simultaneous aerial game survey of the Selous - Niassa ecosystem providing first time valuable data for the entire area. The first step to materialize the vision of a SNWC was made in 2001, when all relevant village and local government representatives and the Niassa Reserve management jointly planned the SNWC UNDP/GEF project. This project aimed at closing the gap for a contiguous network of WMAs to cover the entire Corridor between the Selous and Niassa Reserve and also to support the cross-border cooperation.

Initially a locally based initiative, cross-boundary conservation received policy support at higher level. An initiative of the Governments of Tanzania, Mozambique, Malawi and Zambia had started with support from South Africa aiming at the economic development of the Mtwara Development Corridor, including the Ruvuma interface. This focuses on regional integration of infrastructure networks and development initiatives. In the process to identify and unlock economic potentials the SNWC was acknowledged as one of the important regional assets and consequently integrated into the regional development plans. Actually, apart from the SNWC there were very few regional programmes existing.

With the mandate of the Mtwara Development Corridor Initiative and assistance from the German institute Capacity Building International (InWEnt) first official meetings between representatives of regional and provincial administrations of both countries were conducted and cross-border issues in natural resources management and conservation identified. In 2007, following the conclusion of the Joint Permanent Commission between the United Republic of Tanzania and the Republic of Mozambique, the Provincial Governments of Cabo Delgado and Niassa on the part of Mozambique and the Regional Administrations and Local Governments of Mtwara and Ruvuma on the part of Tanzania formally agreed in a Memorandum of Understanding about their regional cross-border cooperation. This included the strengthening of cross-border cooperation in environment and conservation issues, promotion of tourism development and the development towards a larger trans-boundary conservation area.

So far the cooperation has been intensified and made joint patrols possible. Basic communication with email and radios, exchange of information and additional cooperation with police and border police is gradually improving the poaching situation and reduces other criminal activities thus contributing to the security at the border. However the effectiveness of the cross-border cooperation in anti-poaching still needs improvements.

Annual management meetings, once introduced with wildlife and law enforcement officers of both countries, include meanwhile representatives of the border CBOs and some hunting operators. Results of research and studies are frequently exchanged and research is jointly conducted as was the case with the socio-ecological survey of Ruvuma River. Recommendations of this study resulted in the process to improve fisheries and wildlife resources management at the border river.



In 2008 the five CBOs of the SNWC and the Niassa Reserve received the CIC Markhor Award in acknowledgement of their “outstanding conservation performance”. This international recognition enhanced also the motivation for further expansion of the trans-boundary cooperation. This includes an improvement of effectiveness of cooperation and the identification and development of new opportunities for sustainable economic development which could be of advantage for the local communities and biodiversity conservation. The development of sustainable tourism would be a good prospect. Only since recently the construction of two new bridges at Ruvuma River and the establishment of official border crossings allow for uncomplicated cross-border traffic. This opens up the potential to develop a trans-boundary tourist circuit with opportunities for private/public partnerships and investments. Additional synergies could be drawn from the joint promotion of the cultural and natural heritage of the trans-boundary conservation area.

Cross-border conservation has been initiated with the establishment of the SNWC although it covers only a part of the common border between Tanzania and Mozambique. Further east of the SNWC a second wildlife corridor between the Selous and Niassa Reserve is in the process to be developed with the assistance of WWF using a similar CBNRM and WMA approach. Furthermore a number of smaller protected areas, including game and forest reserves and a marine park are located in Tanzania right at the border. This entire situation provides the potential for spatial expansion and the development of a larger cross-boundary conservation area.

9. LESSONS LEARNED

The multitude of CBNRM and trans-boundary conservation initiatives does not allow for a blueprint. However some lessons and practical experiences gained so far during the establishment of the Selous- Niassa Wildlife Corridor might add to the knowledge about critical issues for wildlife and natural resources conservation in the African context and will inform practitioners, development agencies and NGOs, Governments, policy makers and the private sector.

The coordination and management of a multitude of stakeholders in a complex and multi-sectored environment is characteristic for the development of trans-boundary conservation. For the application of a CBNRM concept a multi and inter-

disciplinary approach to management needs special focus on the local communities because they are key to successful conservation on the ground. In order to identify their shared values and interests and gain their support for conservation communities have to be engaged early in the planning of the conservation concept and should take an active role during the development and implementation process.

Often border communities in remote trans-boundary conservation areas have experienced disproportionately poverty, poor infrastructure and inequitable services in education and health. CBNRM and trans-boundary conservation cannot solve all issues, however, integrated into a regional economical development plan it can substantially contribute to development and poverty alleviation.

Land and natural resources constitute the lifeline of rural communities. Therefore a strategy for an integrated management that promotes conservation and sustainable use should be based on best available scientific, traditional and local knowledge and a high level of community participation.

In general conservation initiatives do not aim at short term economic gains but rather try to optimize the use of ecosystems with minimal ecological impact. Consequently new management regimes are introduced which are often placing restrictions on unsustainable resource utilisation practised by community members to secure their livelihood. The identification and introduction of alternative income generating activities can largely support this process of change.

Investments in awareness creation and capacity building are essential to lay a foundation for effective community involvement and participation and are key for the empowerment of local communities. This refers also to local institutions representing the interests of local communities like e.g. CBOs and natural resources user groups, who either need support for their establishment or strengthening of their management capacities.

Successful implementation of a CBNRM approach needs a long-term commitment of donor organizations and facilitators. Work with communities is tedious and there are no real quick wins. It is time consuming hard work to build up the necessary trust, achieve a change of mindset and attitude, build up the required capacities and assist with the establishing of necessary institutions until communities gain the

self confidence to take charge of their own development and actively engage in the management of their land and resources.

The responsibility for law enforcement can not entirely be transferred to the community level. The deployment of trained village games scouts with their advantage of local and insider knowledge and bush craft skills can be highly successful when they receive the necessary backing from the village government. However combating professional poaching gangs in a trans-boundary context is beyond their scope and demands the close cooperation with other law enforcement agencies from wildlife, police, immigration and customs on regional, national and international level.

Wildlife based tourism is rightfully often regarded as one of the most promising economic sectors contributing to regional economic development and supporting transboundary conservation areas, but new tourism destinations do not develop on their own. Whereas the low requirement in infrastructure and the rather stable hunting tourism industry with a current demand in hunting areas do not necessitate much effort to establish hunting tourism in a remote area, the development of non-consumptive wildlife tourism has to be actively managed. The highly competitive environment between destinations and the long lead time necessary to develop the profile of a new tourism destination require to start with the promotion of the area as early as possible to raise attention and interest of potential investors and tourists.

10. CONCLUSION

The establishment of the SNWC is essential to conserve the integrity of the Selous-Niassa ecosystem. In a CBNRM approach the local communities are integrated in the development of the corridor and trans-boundary natural resources management. Since cross-border cooperation started from the grassroots, the involvement of the community and local level in the planning and implementation of natural resources management activities resulted in high participation, buy-in and ownership of the trans-boundary conservation process. This motivation is also attributed to the local importance of natural resources and the prospects of direct benefits and empowerment. While this development process required time to build trust and new partnerships and had to be complemented with local capacity building, first results on the ground already demonstrated that the bottom-up approach applied in the

SNWC project is a successful and effective way for biodiversity conservation across political boundaries. With the achievement of a higher political level agreement and the integration of transboundary conservation into regional development plans this approach has laid a strong foundation for more ambitious goals of TBNRM and the development of a larger transboundary conservation area between Tanzania and Mozambique.



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AA Authorized Association

ADAP Association for the Development of protected Areas

CBCTC Community Based Conservation Training Centre

CBNRM Community Based Natural Resources Management

CBO Community Based Organisation

CIC International Council for Game and Wildlife Conservation

CIM International Centre for Migration and Development

CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora

FAO Food and Agriculture Organisation of the United Nations

GEF Global Environment Facility

GTZ Deutsche Gesellschaft für Technische Zusammenarbeit

InWEnt Capacity Building International

IUCN International Union for Conservation of Nature

IZW Institute for Zoo Biology and Wildlife Research

KfW Kreditanstalt für Wiederaufbau

SCP Selous Conservation Programme

SGR Selous Game Reserve

TBNRM Transboundary Natural Resources Management

SNWC Selous – Niassa Wildlife Corridor

UNDP United Nations Development Program

WMA Wildlife Management Area

WWF World Wide Fund for Nature





Selous-Niassa Corridor Map
Cartography Mike Shand



Corridor signboard along main road
Photo by Rudolf Hahn



Elephant capture team while researching elephant migration in the Selous Niassa Wildlife Corridor
Photo by Rolf D. Baldus



The elephant has the wake up injection
Photo by Ludwig Siege



Scientists work on immobilised elephant during reserach project to establish wildlife movements in corridor
Photo by Rolf D. Baldus



A village hunt for a man eating lion in the Corridor
Photo by Ludwig Siege



Representatives of the Selous-Niassa Corridor and the Niassa Game Reserve in a joint planning exercise
Photo by Rudolf Hahn



Corridor village
Photo by Rudolf Hahn



These muzzle-loaders are still used for village hunting. Some are 200 years old
Photo by Rudolf Hahn



Wildlife education in a corridor school
Photo by Rudolf Hahn



Chief Kwizombe of the Yao ethnic group in the southern corridor
Photo by Rudolf Hahn



Signing the "Memorandum of Understanding" by regional representatives from Tanzania and Mozambique
Photo by Rudolf Hahn



Village game scouts removing a snare
Photo by Rudolf Hahn



Village game scouts carrying bush buck
Photo by Dr. Ludwig Siege



Leopard resting in a tree.
Photo by Rudolf Hahn