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ACKNOWLEDGEMENTS

The Baseline study for the proposed Wildlife Management Areas (WMAs) initiated by the Wildlife Division (WD) in the Ministry of Natural Resources and Tourism (MNR&T) in collaboration with various donors, Non-governmental Organisations (NGOs) and local communities. The study has been conducted countrywide in 16 proposed pilot wildlife management areas. This team was charged with the responsibility of conducting the study for the Northern Working Area or Northern Zone which included the districts of Monduli, Kiteto, Babati, Ngorongoro, Serengeti and Tarime. Quite a number of people have therefore been involved in facilitating the completion of this study.

We would like to first and foremost wish to express our sincere gratitude to the WD for opportunity to conduct this important study, which heralds the beginning of a new era in natural resource management. Here we would particularly like to thank the staff of the WD who took part in the preparation of the study namely Mr Severe the Director of WD, Ms Miriam Zechariah, the co-ordinator of the project, and Mr Michael Maige. We further would like to thank the sponsors of the project for the northern working area namely USAID through WWF-

EXECUTIVE SUMMARY

National Environmental Policy has among its objectives to raise awareness and understanding of the essential linkages between environment and development and promote individual and community participation in environmental action. Other policies and regulations reviewed include the National Agriculture and Livestock Policy of 1995, The Energy Policy of 1992, Wildlife Conservation Act of 1974, National Water Policy, The National Parks Ordinance of 1959, Ngorongoro Area Ordinance of 1959, Tanzania Wildlife Research Institute Act of 1980, Village Land Act, The Mining Act 1998, The

and consistent, is its measurability. The individual WMA reports provide data on the identified indicators, which are to be used to formulate monitoring indicators for those areas.

The summary of findings reveals that economically, most of the districts enjoy a high contribution to its incomes from natural resources sector. However, most villages (more than 60%) located in the proposed pilot WMAs have poor level of development due to their inhabitants having low incomes. Accessibility to economic services is also poor while they have in their vicinity ample natural resources. Productivity is poor and production of mainly agricultural crops is low, while at the same time huge amount of wealth in the form of livestock is just accumulated for storing wealth and social status motives.

Social aspects covered here include population characteristics, institutions that have a bearing in the use and conservation of natural resources, conflicts related to the same, and social facilities available in each of the six WMAs. Population characteristics here include ethnic composition and population dynamics particularly migration patterns. The report also covers both traditional and modern institutions that have direct influence on natural resources.

Conflicts have profound influence in the development process. For this reason, conflicts are covered in terms of their nature and how they are managed. Finally an assessment of the current status of the social services such as education and medical facilities, and the water supply situation in each WMA is given.

The six pilot WMAs are relatively rich in wildlife with more than 50 species of large mammals recorded from these areas. Diverse habitat types of which the WMAs offer and the presence of Maasai people who traditionally did not eat probably contribute this and they as a consequence lived with them in harmony until recently when their feeding habits have progressively started to change. All the WMAs are not isolated from other protected areas there are a number of migration routes, which ensure seasonal movement between them, core protected areas or into dispersal areas. Over hunting from legal operators and poaching are attributable to declining trend of some wildlife species in the WMAs. With the exception of IKONA, Tarime and in some of the villages at Babati whose residents traditionally hunt wildlife for their consumption, poaching is mostly done by outsiders and sometimes it looks to be organized because in some areas government staff who use government vehicles and firearms are involved.

Vegetation in all the six WMAs has more or less similar characteristics dominated by open grassland, wooded grassland, woodlands, bushed grassland, riverine forests, flood plains and evergreen forests in small patches. At low altitudes are found acacia-comiphora woodland, combretum, and balanite, dalbergia woodland, occasional baobab and rock hills interspersed mainly by *Digitaria macroblephara*, *Cynodon dactylon*, *Panicum colaratum* and *Pennisetum mezianum* and *Themeda triandra*. In area dominated by *T. triandra* signifies that occurrence of fires is frequent.

Many villages that comprise the WMAs in the northern part of the country are faced with acute shortage of water supply both for domestic use and livestock. While wildlife migrate seasonally from one area to another in search of pasture and water, human beings and

cattle suffer the consequences unless a village has underground water which provides for the construction of bore holes.

Issues emerging from the survey include those of Governance (lack of openness / transparency), Lack of Capacity for Contracting and other skills, Benefit sharing modalities, Lack of understanding of the WMA concept, Land use disputes, Communication breakdowns between Government Institutions and Communities, Conflicting and therefore Confusing statements between government technocrats and politicians, Insufficient Community participation in preparation of guidelines, Water scarcity, Crop destruction by wild animals, Insufficient capacity for WMA sensitisation at the district level, Existence of different curricula for VGS training.

The way forward is then suggested in terms of resolving the aforementioned issues above through; allocation of more time for Project Implementation, providing Civic Education as an entry point to project implementation, providing Capacity Building, Technical Backstopping, Curbing Mis-informers particularly in Ngorongoro and Tarime districts, Land Use Disputes, water scarcity, harmonising VGS training, Improving relations through re-orienting TANAPA field staff training in terms of community relations and communication skills and harmonisation of traditional and modern institutions towards the management of natural resources.

1.0 INTRODUCTION

1.1 Background

The government of Tanzania is committed to effectively manage the wildlife resources for the benefit of its citizens. In 1998 the Government adopted the National Wildlife Policy of Tanzania (WPT). The WPT urges the adoption of best practices (sustainable development) for wildlife management in Tanzania.

The Wildlife Division (WD) in the Ministry of Natural Resources and Tourism (MNR&T) in collaboration with various donors, Non-governmental Organizations (NGOs) and local communities has been supporting the implementation of Community Based Conservation (CBC) activities in areas adjacent to the Game Reserves or in Game Controlled Areas. Most of the CBC activities in these areas relate to the utilization of wildlife and forest resources for tourism and domestic use. Other activities include tourism related handicrafts and several community-based ventures or small and macro enterprises.

The Government is aware that effective implementation of the CBC activities would greatly increase community participation in the protection and conservation of natural resources. CBC is not new in Tanzania, as there are several initiatives with more than a decade of experience. It is apparent that these initiatives are expected to contribute to improved natural resource management and planning process and strengthen local level governance and generate tangible social and economic benefits directly to communities.

It is in the light of this recognition that the WPT is advocating the establishment of Wildlife Management Areas (WMAs) as a means to effectively implement CBC activities in Tanzania. The WPT objective is to foster the involvement of local communities in the management of wildlife through the establishment of WMAs on the village land.

WMAs represent a new wildlife conservation area, which will operate under the Wildlife Conservation Act (WCA) 1974, Village Land Act, 1999, and Local Government Act (District Authorities) 1982. The main stakeholders/collaborators in the management of WMAs include: the respective communities in the pilot WMAs, the Wildlife Division,

1.2.6 National Environmental Policy of 1998

The National Environmental Policy defines the environmental policy framework, which is also relevant to other related sectors, including wildlife. The overall objectives of the National Environmental Policy are stipulated as follows:

To ensure sustainable and equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health or safety.

To prevent and control degradation of land, water, vegetation and air which constitute our life support systems.

To conserve and enhance our na(o)s for mee5m[()] TJETBT/F3 mafoTo Toei4 12e

agricultural residues and animal wastes provide energy for cooking, heating and lighting to many Tanzanians. This is particularly to rural people who account to about 85% of the total population of the country. Since biomass energy will probably continue to dominate the national energy balance for the foreseeable future, the energy policy is of great significance to WMAs because these are the areas where biomass energy is mostly obtained.

1.2.9 National Water Policy of 2002

Water is an important natural resource that is an integral part of the environment. Despite being an input for almost all economic growth such as hydropower generation, irrigation, industries, tourism, mining, livestock, domestic, fisheries, wildlife and forestry activities, water is poorly distributed in time, space, quantity and quality.

The national water policy of Tanzania of 2002 acknowledges that the same policy that was developed in 1991 relatively failed because of social, economical and environmental changes that took place both locally and globally over a period of one decade. Thus, the

1.2.14 Village Land Act of 1999

Villages can sublet their title deeds to individual residents.

In order to ensure sustainable land use planning and soil conservation, chapter five recognises that;

(a) Villages should be given adequate land designed to facilitate easy access to the economic and social activities

2.0 EVOLUTION OF COMMUNITY BASED CONSERVATION/ WMA: A PARADIGM SHIFT IN NATURAL RESOURCE MANAGEMENT

2.1 Background

There has been a significant transformation of the management regimes of natural resources. At one point, when human settlements were insignificant, management of natural resources was deemed superfluous. As more and more people require space and resources on this planet, more and more rules and regulations are required to supervise individual use of the earth's resources for the common good (Weeks, 1981).

The oldest natural resources management paradigm was that of the government taking the leading role and communities taking the passive role. In Tanzania, this translated into recruiting forest or wildlife rangers who were employed to guard these resources from

representing considerable biodiversity in many forest regions (Posey, 1985). Communities' knowledge of species and products is considered as an important resource in itself, and there are persuasive arguments to conserve this neglected traditional knowledge, both for its cultural and environmental significance (Richard, 1985; Kajembe, 1994). Traditional forest management systems and other common property regimes, including wildlife, are emphasized as effective institutions for sustainable resource use (Ostrom, 1990).

2.4 Declining Government Capacity Argument

The problem of declining capacity for governments to protect natural resources is a common problem throughout Africa and indeed much of the third world. For example, it was not until the Indian Government found it had employed more than 100,000 forest guards and yet the natural forests were still disappearing that the government began to look for new strategies (Wily, 1995). It has now been realized that after all, with the right conditions, local communities become the strongest and most effective guardians of natural resources (Wily, 1995). Regardless of the governments' resource endowment, it is simply not possible to deploy a soldier or guard behind every tree or animal. In relation to forests, the experiences from the Duru-

Zimbabwe's community-based wildlife use and management policy is actualised in its CAMPFIRE program. The acronym stands for Communal Areas Management Program for Indigenous Resources. The program therefore, applies to the areas of the country under communal tenure conditions as opposed to private land or land under direct state management. Although a permissive legislative framework was provided in 1982, the development and implementation of the CAMPFIRE program took several years. It was only in late 1988 that two District Councils were first granted Appropriate Authority status. The devolution of management was inseparably linked to the devolution of benefits through full ownership status for wildlife producer units (Murphree, 1996). Similar programs have been implemented in other countries such as Zambia (Lewis et al , 1990; Tilley, 1995), South Africa and Lesotho (Shackleton and Campbell, 2001).

The prevailing idea of Wildlife Management Areas in Tanzania takes into account the experiences from other countries as well as the experiences in relation to forest management particularly Duru-Haitemba in Babati District. Like the CAMPFIRE program in Zimbabwe, the idea of WMAs has been in the making for some time now. In an early draft of the National Wildlife Policy of Tanzania, the idea of WMAs was proposed (Ndolanga, 1996). These WMAs were to replace Game Controlled Areas or Open Areas, but only if they would support significant wildlife populations and /or if villagers wish to manage their land to support wildlife. In this early proposal and subsequently culminating into the 1998 Wildlife Policy of Tanzania, it is stipulated that the aim should first be to give title deeds of land to villages (URT, 1998). Then villagers could decide with appropriate professional advice, which form of land use, compatible with the conservation of natural resources, they wish to pursue, and how they will derive benefits from such

experiences of local community representatives, WMA Regulations were drawn. These Wildlife Management Areas Regulations were officially launched at the Golden Tulip Hotel Dar es Salaam on 24th January 2003.

It was in view of the above that, the Wildlife Division in the Ministry of Natural Resources and Tourism engaged consultants to provide a situational analysis as baseline information from the proposed 16 pilot sites in 18 Districts on Tanzania Mainland for future comparison. The work also aimed at providing data for facilitating monitoring and drawing up management plans for the proposed WMAs. This report covers only the Northern Zone.

3.0 DISCUSSION OF MONITORING INDICATORS

3.1 Preamble

The identification of monitoring indicators is a crucial step before data collection instruments are designed. In order to monitor performance, progress, or change for that matter we need indicators to measure the changes. After identifying the most important indicators, we then need to determine how these indicators will be measured, since one of the most important properties of indicators apart from being simple and consistent, is its measurability. The measurement methods then will determine the type of data to collect in order to feed into the formulas or methods of measurement. The current exercise has dual purposes, one is to provide a situation analysis of what is on the ground as baseline for future comparison, and the other is to obtain data for facilitating monitoring and drawing of management plans for the pilot WMAs. The following is a list of suggested indicators, which can be used to monitor change in and around the WMAs

3.2 Developmen

Table 4.1

Table 4.2 Identification and Measurement Of Social Indicators

Social Indicator	Measurement
Ethnic composition	Interviews with village officials
Population composition	Village government records
Migration	

4.0 METHODOLOGY

4.1 Choice of Study Areas

The areas covered by the baseline data study were pre-determined by the Wildlife Division. These include 15 proposed pilot WMAs covering 143 villages in 18 Districts. This team was allocated the Northern working area or zone. This area covers Monduli, Kiteto, Babati, Ngorongoro, Serengeti and Tarime. About 28 villages are covered.

4.2 Data type and Sources

The type of data collected was determined by the requirements of the Terms of reference as outlined above and the broader objective for monitoring. These are both qualitative and quantitative data. The sources of data have been both primary and secondary covering the areas of economic, social and ecological data as outlined in the TOR. Focused interviews with village leaders; donors; investors; district leaders in districts involved including District Commissioners, District Executive Directors, Natural Resources Officers, Game Officers, Land Officers, Community Development Officers, and Members of Parliament and Councillors were conducted. Others who were interviewed are NGOs leaders, the Conservator of Ngorongoro Conservation Area and the Principal of Pasiansi Wildlife College in Mwanza. A list of people interviewed is appended.

Types of data that has been collected for each village include population size, structure, trends and migration; division of labour and specialization; use and availability of social services; accessibility; institutional set up and others. The economic data that has been collected include but not limited to current land uses; production status; incomes and expenditure; natural resources use; poverty levels and markets. Also ecological data including status, trends and use of wildlife; habitat/vegetation communities, water resources; wildlife movements; status, trends and use of wildlife, forests resources and other biological resources; human-wildlife conflicts; and, natural resources use conflicts have been collected.

4.3 Primary Data Collection

Primary data collection used several data collection approaches and instruments in order to gather all the necessary data set and facilitate cross checking of responses from various stakeholder groups for accuracy

4.3.1 PRA

At the village level PRA has been undertaken where a plenary session involving all stakeholders has been conducted followed by group discussions (youth, women, men, girls, boys, elders etc). Prior to group discussion and interviews, the purpose of the survey was adequately explained. This session was important for the exercise and it resulted into a lot of interesting questions from the participants in most villages. For those villages whose chairmen attended the WMA inauguration in Dar es Salaam in January 24th and

gave a feedback to the villagers, the team was well received and had easy time explaining the concept and convincing the people of its benefits to the community at large.

4.3.2 Household Questionnaire

A Questionnaire has been used for soliciting baseline information from households whose respondents have been selected by using a random sampling technique. In most villages the minimum number of respondents of 30 for each village was reached with the exception of a few villages where the selected respondents melted away with the crowd. Stratification of the population was done in terms of wealth status, occupational where in most cases two groups emerged of occupation namely farmers and livestock keepers. The Questionnaire is attached in Appendix 1.

4.3.3 Check List

A check list of guiding interview questions has also been used to conducting interviews with village leaders, donors, District leaders in districts involved including Natural Resources Officers, Community Development Officers, and District Executive Directors, Members of Parliament and Councillors. The checklists for economic, sociological and ecological questions are presented in Appendix 2.

4.3.4 Review of Existing Village Land Use Plans

Enquiries were made about the stage at which the land use plans have been reached at both

4.3.7 Observation

millet in Babati and Serengeti. Kiteto and Tarime also Ngorongoro are not agricultural communities mainly however they do cultivate maize and beans mostly for subsistence purposes. The productivity of crops grown is seen to be below the amount which could potentially be achieved. Results show that maize and beans productivity vary with rain. During the short-rains productivity is lower than during long-rains period⁵.

5.1.1.3 Economic Agents, Infrastructure and Markets

Economic agents considered include producers, distributors and economic services. Economic services and infrastructure are crucial in providing a good basis for efficient production and distribution. Efficient supply of inputs to production and services is vital in facilitating efficiency and therefore incremental benefits while the converse is true. Inputs such as seeds, fertilizers, farming implements, pesticides play an important role in production of food and cash crops. Economic services such as credit, transport and telecommunication also contribute to the conducive environment for facilitating efficient production. All the above services are at a poor level of supply in all the WMA areas we visited with variations. In Monduli district road transport is good for six (6) villages while the remaining three do not have all season passable road. For Babati, Mayoka and Magara are off the main road and not easily accessible during rainy season. This also applies to Ilkiushi-bor and Makami in Kiteto. Serengeti villages are relatively well placed along the road and are accessible throughout the year. In Tarime WMA, most of the way the road is passable throughout the year (using the road from Mugumu to Tarime) except the 15 km stretch from the junction to Gibaso which is not accessible during rainy. The road infrastructure is an important aspect for market access especially with the anticipated potential businesses which may be stimulated by the establishment of WMAs.

Presently, markets for agricultural output are available but not competitive in most areas, thus prices fetched by farmers are low. For cotton growers of Babati and Serengeti, the market prices offered are a disincentive to production. The price of Tshs 140/= a kilogramme of cotton is so low so that one can hardly claim to be even breaking even! Directives from above requiring people to cultivate cotton in Serengeti contravenes the freedom of choice with respect to economic principles. Because given free choice, farmers would rather cultivate or use their time and other resources on a more profitable undertaking⁶.

The state of credit supply in the rural areas visited is poor. Most of the interviewed people indicated that they have borrowed money from relatives and friends mainly for emergency purposes in order to fill in the gap of a consumption short-fall or attend to emergency events of sickness among others. Capital is important in raising productivity which in turn will facilitate poverty alleviation in these areas. Even with the prospective ventures related to WMAs, these communities need to be facilitated in order to properly take advantage of the business opportunities on offer.

5.1.1.4 Natural Resource Uses

Most natural resources have been reported to be used by most people in the local communities. Game meat came out as the least used resource in Monduli, Kiteto, Ngorongoro and Babati districts' proposed pilot WMA areas. In Serengeti and Tarime, game meat use is high due to the tradition of using game meat for food but also hunting being part of the cultural fabric. A man who cannot hunt is looked down upon by the

⁵ Comparison between the mean and mode values of crop harvests showed wide differences implying that close to mean values were attained by few farmers.

⁶

community. Realising this, the Serengeti Regional Conservation Strategy put forth a strategy to facilitate wildlife conservation by allowing and facilitating the communities to hunt game for food while involving them in controlling poaching.

While most of the natural resources listed⁷ were not reported to still be in abundance, wildlife and firewood were seen to be declining because of demand pressure and indiscriminate utilization. Apart from the Direct use values of the natural resources around them, villagers in all proposed pilot WMAs recognize some of the non-use values or indirect use values. They identified for instance tree shades, rain catchment and erosion control among others.

5.1.1.5 Poverty Levels

Using several indicators to gauge poverty⁸ in the communities, it was found out that most (>60%) of the communities fell below the poverty line of one US dollar a day. This

5.1.2 Main Social issues

5.1.2.1 Introduction

Social aspects covered here include population characteristics, institutions that have a bearing in the use and conservation of natural resources, conflicts related to the same, and social facilities available in each of the six WMAs. Population characteristics here include ethnic composition and population dynamics particularly migration patterns. The report also covers both traditional and modern institutions that have direct influence on natural resources.

Conflicts have profound influence in the development process. For this reason, conflicts are covered in terms of their nature and how they are managed. 5()Aa1-nally549(h8influe4()-4910()-49

There are conflicts between villages over boundaries as it is the case with Arash and Piaya in Loliondo, or Kitenden and Irkaswa in Enduimet. The most serious conflicts which are also potentially detrimental to WMAs are those between villages and institutions such as TANAPA. There appears to be a major public relations problem between villages and TANAPA. This is reported in Burunge, Loliondo, Ikona, and Tarime WMAs. In general, TANAPA is accused of caring more for wild animals than human beings. Since TANAPA

5.1.2 Main Ecological issues

5.1.3.1 Wildlife resources

The six pilot WMAs are relatively rich in wildlife with more than 50 species of large mammals recorded from these areas. Diverse habitat types of which the WMAs offer and the presence of Maasai people who traditionally did not eat wild animals probably contribute to this and they as a consequence lived with them in harmony until recently when their feeding habits have progressively started to change.

All the WMAs are not isolated from other protected areas there are a number of migration routes, which ensure seasonal movement between them, core protected areas or into dispersal areas. In Endumeit for example, the Kitenden corridor is used by migratory species, which venture between the WMA, Kilimanjaro and Arusha national parks in Tanzania and Amboseli National Park in Kenya. At Makami WMA there exists a migratory corridor, which the animals use to move between TNP to Ndedo through Irkishi-bor and Makami villages.

During rainy seasons most of the herbivores leave TNP and spread into a wider area of Maasai Steppe. The main corridor at Burunge WMA which lead the animals into the dispersal areas that include Mto wa Mbu GCA, Lake Manyara National Park, along the Rift Valley escarpment and possibly up to Lake Natron and Ngorongoro Conservation Area (NCA) is the northern route. The Kwa Kuchinja wildlife corridor which is located between Vilima Vitatu and Minjingu villages represents an important buffer zone and is also a corridor that links TNP and Lake Manyara National Park (LMNP). At Loliondo WMA animals move freely between SNP, NCA, Maswa, Ikorongo and Grumeti Game Reserves in Tanzania and Masai-Mara National Reserve in Kenya, which form the Serengeti-Mara ecosystem. However, of late, human settlement and agricultural activities are increasingly endangering the wildlife migratory routes and dispersal areas. Large scale farming at Kiteto, Simanjiro, Hai and Babati districts are example of this threat.

Over hunting from legal operators and poaching are attributable to declining trend of some wildlife species in the WMAs. It was reported that villagers suspect that more animals are hunted than it is permitted. This is a result of game officers who are not faithful and who do not abide to hunting rules and regulations due to inadequacy of game staff and funds which hinders close monitoring and law enforcement.

With the exception of IKONA, Tarime and in some of the villages at Babati whose residents traditionally hunt wildlife for consumption, poaching is mostly done by outsiders and sometimes it looks to be organized because in some areas government staff who use government vehicles and firearms are involved. Due to the fact that VGS are currently not recognized by the legislation and are not used and involved adequately. Furthermore, so long as hunting licenses are issued by the central government and local governments at

Such worries were noticed in villages comprising IKONA and Tarime WMAs. Other villages that enjoy piped water also face the problem of low levels of water in dry periods for example at Elerai, pipes being broken by elephants for example at Kitenden and insufficient money to purchase fuel for pumping for example at Robanda.

5.1.3.4 Other Natural Resources

Bee keeping: Although not intensive some of the villages have started to engage themselves in bee keeping activities. Bee keeping provides an opportunity for economic diversification especially during this era when climatic changes do not ensure sustainable livestock and crop production. Potential for bee keeping in all WMAs is high due to the presence of tree species like *Julbernadia globiflora* and *Bragestegia spp.* whose flowers attract bees.

Although currently most of the honey is gathered from logs and caves and from traditional beehives the potential of the market for honey in all villages is very high but no bee-wax is prepared. In view of this, villagers are increasingly forming organized groups in order to initiate bee keeping whereby traditional hives will be supplemented by modern ones.

Mining: Many villages reported the potential for minerals in their areas but only Ruby is extracted by few people at Ndedo and Mayoka while Alexander and Emerald are extracted by mainly outsiders at Mayoka and Magara respectively. While only stones, gravel, clay and sand are extracted for construction purposes at Loliondo WMA, mining is done by permit from the government and gold is the only precious mineral resources that is extracted at Nyichoka village. Small-scale mining that is done by residents in the same village involves stones, and red and white lime. At Tarime gold mining is done by both an investor and small miners on a 20 ha piece of land.

Fishing: Fishing is a potential activity at Burunge WMA where there are two lakes, and some rivers and streams. However fishing in the area is reported to be done mainly by outsiders. Non-Maasai do only small-scale fishing in Enduimet, Makami and Loliondo WMAs where the major ethnic group of residents is Maasai. This is because, although some youths have gradually started eating fish, for the Maasai, eating fish is taboo and they equate fish to snakes. Fishing by the Gibaso people is done in Mara River and fish is an important component of food that provides them with protein.

Medicinal resources: Medicinal plants are very important to Maasai and are used intensively in Enduimet, Makami and Loliondo WMAs. Most shrubs and trees make medicine for both humans and livestock. For example, *Olea Africana*, which apart from being used as medicine is also used to sterilize milk gourds, and *Commiphora spp.* which, serves as tick repellent. Because trees and shrubs that provide medicine have special conservation status and in non-Maasai areas are not utilized intensively, their availability is still plenty.

Charcoal making: Charcoal making is prohibited in all WMAs but due to its relatively high price people do it illegally. Patrols that are done by VGS to apprehend those who are engaged in logging and charcoal making; the activities which are against the villages' by laws have proved successful in the recent years.

Intangible benefits: There are a number of intangible benefits which people in the WMAs mentioned as important to their day to day life. Among others is the value of mountain forests, which are used as worshipping centres and as sites for other ceremonies such as

6.2 Contracting

The modern businesses which the WMAs are providing the opportunity to be established are not traditional businesses local communities are accustomed with. These businesses require skill and knowledge of specific trades for their efficient and proper implementation apart from free flow of information about the market. From the example of contracts which some villages had signed with tourism investors in their areas, it was obvious that the village representatives did not have neither the skills, knowledge and information about the costs and benefits of the contract they were signing. Examples of such contracts

6.7 Unity in Decision-Making

There is the problem of policy makers and experts to have one stand on issues related to WMAs. It has been noticed in some WMAs where villagers are given different and sometimes contradicting messages from the district authorities. This is sometimes due to personal ideological differences of policy makes and experts. Villagers should be brought into the program when the experts speak with one voice.

6.8 Village Game Scouts

It was reported in all WMAs that the village game scouts (VGS) have been well trained but are ill-equipped to deal with well armed poachers. VGS demand recognition (by being given identity cards), to be provided with weapons and/or radio communication to be able contain poachers amicably.

6.9 Land Use Disputes

Most villages comprising the WMAs reported disputes over land either between neighbouring villages, government institutions or land leased to investors. Examples of such disputes:

- (1) a portion of land belonging to Kitenden corridor which is in Kitenden village but irkanda claims that it is part of their village land. They intend to allocate plots to irkanda villagers in order to establish crop fields.
- (2) At Sangaiwe in Burunge villages, respondents claimed that, the villagers were being harassed by TWP management over the land leased to arises for extracts germstones from an area close to the Park
- (3) The Gibaso village government claimed that the land that was leased to an investor who plans to establish ranch by Mrito villages belongs to the former village. Villages recommended that mechanisms for getting such disputes must be found.

6.10 Water Scarcity

Water is a basic natural resource for socio-economic development. In the northern WMAs water plays an important risk in irrigation, livestock, domestic use, recreation and tourism. However, in most villages that comprise these WMAs water is so scarce that even water for personal hygiene is not easily found. This has apart from exposing the villagers to diseases, more time is spent traveling long distances in search of water. While the time lost result have been wed for other economic activities, women and children's who particularly fetch water in rural areas becomes vulnerable. Livestock which is another in these important resource is concentrated in these sites which are water scarce. This situation motivates livestock migration from one area to another. Consequently, causing conflicts between pastoralists and other water users. When water dry up during dry

At Elerai the problem is more acute such that if the problem persists may lead to villagers migrating from the village.

6.11 Fencing Against Wild Animals

Kitenden village has proposed to create an electric fence along a stretch of land that borders the land set aside for wildlife conservation in order to protect wild animals from entering into the areas set aside for settlement and farming. This technology is widely used in Kenya where some villagers from Kitenden have already visited to learn from them. Once funds are obtained fence construction start immediately.

6.12 Lack of involvement in the preparation of the guidelines and regulations

There was a wide spread concern that involvement of the beneficiaries in preparing the guidelines and regulations was not enough. Draft guidelines and regulations were not sent to district and village leadership for comments, instead these were kept a secret until the launching when participants noted that some provisions were not suitable enough to implement the concept effectively. Example of the weakness that was pointed out among others, was the District Commissioner becoming the Chairman of the District Advisory Committee. Because the aim of WMAs is to devolve mandate to local communities, respondents advised that the District Council Chairman who is the representative of communities should have been the chairman of the Committee.

6.13 Insufficient capacity (trained staff and funds) for sensitization and completion of requirements for the registering the WMA

Many tasks including education and awareness, preparation of land use plans, preparation of by-laws and formation of AAs to mention a few, need to be completed before a WMA is registered. These have to be accomplished through the coordination of districts. The capacity of many districts including gh aw/F1 (se)-6(v)nts,

6.15 Lack of harmonization in VGS training

Two wildlife schools namely Likuyu-Sekamaganga at Songea and Pasiansi in Mwanza offer training for VGS. Each of these schools has own syllabus. At Likuyu the duration of the course is three months while at Pasiansi is one month. Unless VGS training is harmonized, there bound to occur differences between the graduants and eventually create conflicts when performing their tasks.

6.16 Inadequate information on available resources in the WMAs

Although time was limited during this task to completely assess the available resources in including animal populations, boundaries for most of the proposed WMAs are not delineated yet. Conservation Information Monitoring Unit (CIMU) of the Tanzania Wildlife Research Institute (TAWIRI) together with consultants should be contracted to

7.0 WAY FORWARD

The initial stages of introducing the WMA project have achieved some remarkable success in some areas but also this has been a learning period where obstacles to the successful implementation have been identified. In order to successfully implement the pilot Wma phase, these identified impediments have to be removed. Hereunder we present what needs to be done to achieve successful implementation of the pilot stage of WMA.

7.1 Allocate more Time for Project Implementation

First, due to the fact that successful implementation of the pilot WMA phase, clear

7.3 Technical Backstopping

In addition to the capacity building aspects above, technical backstopping will have to be made available at the district; regional even at national levels in order to ensure the desired

7.9 TANAPA Community Relations

There is need to strengthen public relations between TANAPA and adjacent communities. It is therefore necessary to strengthen the role of community conservation services and “de-militarizing” the game rangers.

7.10 Unity in Decision-Making

There is need for policy makers and experts to have one stand on issues related to WMAs. Villagers should be brought into the program when the experts speak with one voice.

7.11 Village Game Scouts

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APPENDICES

Appendix 1: Household Questionnaire

**UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM
WILDLIFE DIVISION**

BASELINE SURVEY FOR PILOT WILDLIFE MANAGEMENT AREAS

HOUSEHOLD QUESTIONNAIRE

Questionnaire No. _____

Village _____ Ward _____ Division _____
District - _____ Region _____

6. Occupation of head of household
 - 01 _____ Farmer
 - 02 _____ Fisher folk
 - 03 _____ Employed/have permanent work
 - 04 _____ retired
 - 05 _____ unemployed
 - 06 _____ casual worker
 - 07 _____ livestock keeper
 - 99 _____ Other
7. Where were you born?
 - 01 Same village
 - 02 Same ward different village
 - 03 Same district different ward
 - 04 Same region different district
 - 05 Other regions
8. If not born in this village when did you start living in this village? (Year)_____
9. Which factors influenced your movement to this village?
 - 01 _____
 - 02 _____
 - 03 _____
- 10.

SECTION B: WATER SOURCES SITUATION

15. Water source table

	15 Which source of water do you use? <i>(Check all that apply)</i>		15.3. Amount that you pay per unit Pay nothing (0) Tshs/m3 or Tshs/20L bucket (please specify)	15.4. Amount of time your household spends collecting water { Minutes/day (including walking and waiting time)}
	15.1 Wet season	15.2 Dry season		
1) Private connection to piped water in house			Tshs/m3	
2) Yard tap (shared connection)				
3) Own source (specify) _____ (well, borehole)				
4) Village well			Tshs/bucket	
5) Water Vendors (specify)----- (Tanker, handcart, other)				
6) Rivers and streams				
7) Spring				
8) Other; specify _____				
TOTAL	100%			

16. Source satisfaction table

	16.1 [Enumerator: Check all sources used in 10.1 and indicate here with an "X"]	How long do you have to queue waiting to get water? (01) <15 min. (02) <30 min , (03) <1 hour (99) >1 hour		16.4. Availability from this source is ...? (01) Poor (02) Fair (03) Good
		16..2 Wet season	16..3 Dry season	
1) Private connection to piped water in house				
2) Yard tap (shared connection)				
3) Own source (specify) _____ (well, borehole)				
4) Village well				
5) Water Vendors (specify)---- ----(tanker, handcart, other)				
6) Rivers and streams				
7) Spring				
8) Other; specify _____				

17. What is the primary method you use to treat your water? [do not prompt]
- _____ (00) None
 - _____ (01) Boiling
 - _____ (02) Filtering
 - _____ (03) Settling
 - _____ (04) Chemical treatment
 - _____ (05) Other, specify _____

SECTION C: SANITATION SITUATION

18. What types of toilet systems does this household usually use?
- _____ (00) No facility
 - _____ (01) Pit Latrine
 - _____ (02) VIP Latrine
 - _____ (03) Pour Flush toilet
 - _____ (04) Public Latrine
 - _____ (05) Other

Solid Waste

19. What is the most commonly used mode of disposing refuse from this household ?
How does your household dispose off most of its refuse?
- _____ (01) dumping in your neighbourhood
 - _____ (02) burning in your compound
 - _____ (03) burying in your compound
 - _____ (04) **indiscriminate disposal (throwing away anyhow?)**
 - _____ (05) local collection system
 - _____ (06) organized community collection system

SECTION D: Natural Resources Use Benefit (Energy, wildlife, forest products)

20. What sources(s) of energy do you use for cooking? *Check all that apply*
- _____ (01) Firewood
 - _____ (02) Charcoal
 - _____ (03) Biow E10(in) 1 1 459.42 427.0a1 0 lrhrowing burying in yo_____

26. What are the potential productive activities do you anticipate resulting from the establishment of the new WMA?

- _____ (01) Cash crop farming
- _____ (02) Food crop production (maize, paddy, cassava, etc)
- _____ (03) Small business (food-vending,)
- _____ (04) Wage employment (casual labour)
- _____ (05) Vegetable farming
- _____ (06) handcrafts for sale
- _____ (07) Water vending
- _____ (08) Game meat business
- _____ (09) Tourist guide

27. How much did you earn last season from your economic activities?

- _____ (01) less than 10,000
- _____ (02) Between 10,000 and 20,000
- _____ (03) Between 20,000 and 30,000
- _____ (04) Between 30,000 and 40,000
- _____ (05) more than 40,000

32. Does your household receive any other income (agricultural sales, own business, rental, seasonal income, sales of property, etc.)?
 Amount per year _____Tshs don't know (99)

33. How many of the following assets are owned by your household?

	Assets	Number	Estimated Value Tshs
01	House		
02	Cart		
03	Hoes		

37. If yes, indicate the quantities of the crops harvested

	Crops	Acreage		No. of units harvest	
		Short rains	Long rains	Short rains	Long rains
1	Green Vegetables				
2	Tomatoes				
3	Maize				
4	Beans				
5	Onions				
6	Cassava				
7	Rice				
6	Others				

HOUSING and ownership

38. How many rooms does your household have?

_____ No. Of rooms

39. What material(s) were used to build this house? *Check only one primary material for Walls, Floors and Roof.*

Walls: _____ (01) Cement blocks
 _____ (02) Burnt bricks
 _____ (03) Mud and poles
 _____ (04) Sheet metal
 _____ (05) Wood
 _____ (06) Thatch
 _____ (07) Mud bricks
 _____ (08) Lime and stone

Floor: _____ (01) Cement and sand
 _____ (02) Earth /Clay
 _____ (03) Other

Roof: _____ (01) thatching grass/palm thatch
 _____ (02) mud poles and grass
 _____ (03) Mud and straw

42. How long would it take you to return the borrowed money?
- _____ (01) Less than 3 months
 - _____ (02) 3-6 months
 - _____ (03) 7-12 months

Appendix 2: Checklist of Questions

2.1 Checklist of questions for interview/discussions (Economic Aspects)

1. What occupation existing in the village (farming, livestock, civil servants, business, fishing etc) (VG) Give proportion of villagers in each occupation
2. What is the labour power availability in the village (number or proportion of able bodied villagers) (VG)
3. What are the main natural resources uses in the village (what type; game, wood, fuel, thatch, grass, poles, timber etc)(VG)
4. What is the status of natural resources access by villagers? (Use right to resources)(VG,FGD)
5. What is the average price of game meat in this village? (VG, FGD)
6. Availability of social and economic services (transport (road, waterways, etc), Water, Energy, Medical services, Education, Shops, etc) (mention type and number where applicable). (VG, FGD)
7. What are the costs/prices associated with accessing various basic needs in the village? (E.g. food staffs, medical services, transport, water, energy, education etc).(FGD,VG,OTHER STAKEHOLDERS)
8. What types of business exist in this village? (E.g. shops, Kiosk, butchers, tailors, blacksmith, mechanical shops of garages etc)(VG, FGD, OS)
9. How many people are engaged in this business? (VG, FGD)
10. What types of main goods are sold in this village? (Food staffs, construction, clothes, tools and equipment, kerosene, electronic goods etc)(FGD)
11. Are there natural resources based businesses? Mention them. (VG,FGD)
12. What are the five major incomes generating activities existing in the village today? (VG)
13. What are the potential economic opportunities in the village if the WMAs start operation? (FGD)
14. What is the annual village government income?(VG)
15. What is the annual village government expenditures?(VG)
16. What are the sources of the village government income?(VG,FGD)
17. What is the proportion of natural resources sources in the village government income?(VG)
18. How many people are employed currently who live in this village? (Salaried)(VG, FGD)
19. What is the consumption pattern of people in this village? (What is there staple food? How many times do people eat per day?) VG, FGD)
20. What is wealth status of villages? (Give rough estimate of proportions of poor, middle and rich categories. Also get the criteria for categorization by villagers e.g. number of cows, size of cultivated farm, business, ownership of assets etc)(VG)
21. How is the availability and access to markets? (Do traders come to buy goods in the village or do village traders take goods to outside markets? Do buyers offer good prices; are they enough to exhaust goods in sale?)(FGD, TRADERS/BUSINESSES)
22. How is current productivity of economic activities? (VG, FGD)
 - How much is harvested per acre/year per type of crop?
 - How many visitors/tourists season?
 - How much milk/cow/day
 - How much fish caught per day/per person?
23. How is profitability of business activities (TRADERS,FGD)
 - What is volume of sales/month?
 - What is profit margin on average?
 - Are you able to re- invest some of the proceedings/pro
- 24.

2.2 Checklist of questions for interview/discussions (ecological)

- 1 How many animal species are in the WMA and can you mention the names of these species?
- 2 Of these, which ones are endemic, endangered, threatened or exotic species?
- 3 What are the estimated population sizes or numbers of animals of each species?
- 4 Can you the animal population trends for each species for the last five years?
- 5 Give the distribution of different animals species in the WMA according to different seasons and can you indicate this on the WMA map?
- 6 There animals movements or migrations in the WMA and what species are involved and at what seasons?
- 7 Are there special routes or corridors the animals follow during their seasonal movements or migrations and can you indicate them on the WMA map?
- 8 What is the total area of WMA and do you consider it as an ecosystem?
- 9 Do you have a general management plan (GMP) of the WMA?
- 10

Appendix 3: ITINERARY, SCHEDULE OF WORK AND PEOPLE CONSULTED

DATE	ACTIVITY	PLACE
24-31/01/2003	Literature search, preparation of data collection instruments	Arusha/Dar-es-Salaam/Morogoro
2/02/2003	Traveling	Dar to Arusha
3-4/02/2003	Consultations	Arusha
5/02/2003	Travelling and District Consultations - Meet District Game Officer - Meet District Executive Officer - Travel to Namanga	Arusha to Monduli
6/02/2003	Travel to Sinya Interviews/discussions/field work Travel to Sanya Juu	Sinya/Sanya Juu
7/02/2003	Interviews/discussions/field work	Kitenden
7/02/2003	Discussion	Irkaswa
8/02/2003	Interviews/discussions/field work	Lerangwa
9/02/2003	Interviews/discussions/field work	Olmolog
10/02/2003	Interviews/discussions/field work	Elerai
11/02/2003	Travelling to Kiteto and District Consultations	

DATE	ACTIVITY	PLACE
26/02/2003	Interviews/discussions/field work	Soitsambu
27/02/2003	Interviews/discussions/field work Travel Seronera	Ololosokwan/Seronera
28/02/2003	Discussions at Frankfurt Zoological Society (Dr Bonner) Discussions with Chief Veterinary Officer of Serengeti National Park Travel to Mugumu, Serengeti District <ul style="list-style-type: none"> - Meet District Executive Director, District Natural Resources Officer, Game officer, Planning Officer, and Lands Officers - Set up appointments with villages 	Ngorongoro-Serengeti
1/03/2003		

Appendix 4: Plant species identified in the monitoring plots of the proposed WMAs

WMA name	Village name	Location	Tree species and number	Grass species	Photograph number
Longido	Sinya	S 03° 14. 768' E035° 29. 032'	<i>Acacia tortilis</i> (10) <i>Balanite aegyptiana</i> (8) Oloki (6) <i>Combretum molle</i> (6)	<i>Cynodon dactylon</i>	