

**FINANCIAL CO-OPERATION WITH TANZANIA:
PROPOSED TERMS OF REFERENCE FOR A PROJECT DESIGN
STUDY FOR THE SUSTAINABLE DEVELOPMENT AND
MANAGEMENT OF THE NGORONGORO CONSERVATION AREA**

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Proposed Terms of Reference for a Project Design Study in the Ngorongoro Conservation Area. Potential financial co-operation KfW/NCAA, Tanzania.

FINAL REPORT

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EXECUTIVE SUMMARY

1 INTRODUCTION

The purpose of this study was to assess the feasibility for potential KfW support for the Ngorongoro Conservation Area (NCA), to develop a project concept and the Terms of Reference for a Project Design Study.

In discussions with senior NCAA and IUCN staff the preliminary Terms of Reference for a Project Design Study as prepared by IUCN were analysed. From the proposed interventions following priority areas were selected by consensus: (a) Enhancement of the NCA's road network; (b) Protection of the Northern Highland Forest Reserve; and (c) Relocation of NCA's headquarter. Based on a field reconnaissance, comprehensive literature review and final discussions with NCAA/IUCN staff the scope of the proposed KfW intervention was identified and the general ToR for the Design Study determined.

2 Background

The Ngorongoro Conservation Area needs little introduction. Because of its natural endowment, its spectacular wildlife, and world famous archaeological/palaeontological value it has been declared a World Heritage Site and Biosphere Reserve. The NCA was created in 1959 as a multiple land-use protected area. It is home to over 40 000 Maasai pastoralists with their livestock who live in harmony with the large diversity of wildlife. The NCA is administered by the Parastatal Ngorongoro Conservation Authority (NCAA) with responsibility for the ever growing tourism in the to the NCA, a highly attractive source of foreign currency vital to the country's economy.

The management systems responsible for the NCA have been unable to cope with the growing pressures on the area which threaten to jeopardize the original multiple land-use objectives. The NCAA has been accused to neglect community concerns in favour of general conservation issues. The NCAA has recently made some effort to remedy the situation by entering agreements with donors such as DANIDA (i.e. addressing food shortage and livestock problems with reference to the resident Maasai) and NORAD (i.e. addressing community development issues). IUCN currently provides technical assistance to the NCAA for the preparation of a much needed General Management Plan (GMP). Potential KfW support for the NCA has to be seen in the same light.

3 ANALYSIS OF IUCN'S PROPOSED INTERVENTION PACKAGE

IUCN's proposed ToR for the proposed Project design study highlights seven priority areas for potential KfW intervention; all seven problem areas seem to be of great significance for the sustainable development and management of the NCAA, but do not equally qualify for financial capital investments for one reason or another. The proposed intervention for tourism

development is more suited for technical support; the food security problem has been addressed by DANIDA and other donors; the community welfare concerns are addressed by NORAD; enhancing protected area management and environmental impact assessments would rather qualify for technical support. The remaining three suggestions have been selected for the proposed Project Design Study.

4 RECOMMENDED NCAA SUPPORT PROGRAM (KfW)

The road network enhancement program will greatly benefit isolated NCA communities by providing better access to social services and markets. It will also benefit the tourism sector (i.e. new access to attractive tourist destinations in the NCA). Improved road conditions will enhance anti-poaching efforts.

The protection of the Northern Highland Forest implies long-term solutions to problems related to the deterioration of the NHFR's watersheds and forest glades which are traditionally utilized by pastoral Maasai for dry season livestock grazing; furthermore, long-term solutions to meet the growing demands for fuelwood and construction wood currently illegally taken from the Reserve. This project component aims at enhanced cooperation between the NCAA and local people inside and outside the NCA which will only be possible through provision of tangible benefits to the communities and practical solutions to the referenced problems. Although this project may not fully qualify for KfW support (i.e. better suited for TZ); it has been included in the recommended feasibility assessment due to the urgent protection needs of the deteriorating Highland Forest.

The proposed relocation of the NCAA's headquarter to a location outside of the NCA is included in the proposed assistant package because it would help to alleviate the ever mounting pressures along the crater rim through Lodge- and other tourism related infrastructure development.

The package of the proposed program elements is largely aimed at enhancing the infrastructure of the NCA for the benefit of the resident people and better protection of its resources.

The revenue generated by the NCA through tourism could well cover the increase in operational costs expected from the proposed interventions; a welcome prerequisite for the sustainability of the proposed capital investments.

The Terms of Reference developed for the Project Design Study with reference to the three recommended intervention areas would best be met by a team of experienced professionals with a wide range of expertise. Although engineering expertise would be predominant, the skills of architects, ecologists, agro-foresters and economists would be equally important. It has been recommended to make use of expertise available in Tanzania, to be complemented through imported expertise.

The unusually quantity of high quality background studies on issues proposed for KfW intervention in the NCA will greatly facilitate the proposed feasibility assessment.

The economic viability of all three program components is likely to be relatively high, considering the beneficiaries and sources of income in the NCA.

1 INTRODUCTION

1.1 Terms of Reference

The consultant was commissioned by KfW to assess the feasibility for potential KfW support for the Ngorongoro Conservation Area (NCA). In case of positive findings he was asked to develop a project concept and the terms of reference (ToR) for a corresponding project design study.

The consultant's ToR may be summarized as follows:

- * discuss and evaluate proposed interventions as submitted to KfW by IUCN in collaboration with the Ngorongoro Conservation Area Authority (NCAA);
- * analyze pertinent problems associated with the NCA;
- * specify and describe proposed intervention by location;
- * develop project proposal (i.e. goals and objectives, activities, results etc.);
- * assess the capability and commitment of the NCAA to implement and sustain the proposed interventions;
- * describe and evaluate current and planned interventions in the NCA by other donors;
- * assess the potential of and need for involvement of potential NGOs and INGOs in support of the proposed intervention;
- * describe targeted institutions and beneficiaries;
- * provide general assessment of proposed interventions with respect to: existing land use conflicts; compatibility with long term goals of NCAA (i.e. overall strategic plan and evolving General Management Plan for the NCA); legal and policy framework; professional capability and motivation of NCAA personnel; participation of local stakeholders in NCA management (e.g. Maasai); current and proposed zoning concept for the NCA;
- * describe and justify proposed interventions in detail; this includes time frames, financial needs and disbursements of funds;

- * pursue agreement with counterpart agency regarding the proposed intervention.

1.2 Study Approach

At NCAA headquarters the consultant discussed the intervention package and draft ToR for a Project Design Study as submitted by IUCN to KfW with senior NCAA/IUCN staff. Resulting from the discussions, three major areas were targeted for potential KfW support: (a) road network development, (b) assessment of the Northern Highland Forest, and (c) the relocation of NCAA headquarters. Following the discussions and a general study of the evolving NCA management plan, the sites for the proposed interventions were visited (i.e. key roads, the Northern Highland Forest, and the proposed site for headquarters relocation; see Figure 1.2). Subsequent to the field work, the proposed interventions were discussed in detail with the corresponding NCAA Department Chiefs and key representatives of the NCA Maasai communities.

The consultant had access to a range of technical papers available at NCAA and from IUCN. He met with persons working in the NCA on behalf of other donors and with representatives of the Tourism Industry. He worked in close collaboration with the Technical Advisor to the NCAA Planning Team, currently involved in finalizing the General Management Plan for the NCA.

In a final meeting, consensus was reached on interventions to be proposed for financial support by KfW. The corresponding **“Letter of Understanding”** is attached as Appendix 1. The consultant’s “Itinerary” and a list of “Persons met” are attached as Appendices 2 and 3.

1.3 Acknowledgments

The consultant likes to acknowledge IUCN’s logistic support and the collaboration of NCAA staff in providing literature and other pertinent materials. Special thanks are given to N. Kuykendall, the Technical Advisor to the NCAA, for all his help in the field.

2 BACKGROUND

2.1 The Ngorongoro Conservation Area (NCA)

The Ngorongoro Conservation Area in all its splendor and with all its problems has been aptly described by numerous authors in a multitude of publications and technical papers; there is little reason to paraphrase. The background information provided in IUCN’s “ Draft Project Design Study “ (IUCN, 1994) sums it up well:

“The NCA was created in 1959 as the only multiple land-use protected area in Eastern Africa promoting the dual goals of conservation and human development (Fig.2.1). The conservation values of the NCA are outstanding, and include large wildlife populations, spectacular scenery, forest areas important for water catchment and biodiversity conservation, as well as internationally significant archaeological and palaeontological sites. The NCA is an internationally important tourist destination, and has been designated by UNESCO as both a World Heritage Site and a Biosphere Reserve. The NCA is home to some 40,000 Maasai pastoralists and more than a quarter of a million of their livestock. It is this combination of

land-uses which makes the NCA unique as well as contributing to its special management challenges.

In recent years, there has been a growing concern over the long-term future of the multiple land-use system in the NCA, in the light of an expanding human population, the need for increased development inputs, and escalating land-use conflicts between the interests of conservation, pastoralism and tourism. Major issues include:

- * An increasing human population which has generated growing demands for development inputs in the form of roads, schools, clinics and other services, and which remain largely unmet;
- * Growing concern over the spread of cultivation in the NCA, linked to the collapse of traditional pastoral systems and the need for Maasai residents to supplement their diet with grain;
- * Concerns over natural resource management, including commercial poaching of wildlife;
- * The intensification of tourism developments centered around the Ngorongoro Crater itself, creating concerns over conflicting demands for water and pressures on the natural resource base which may in turn undermine the long-term sustainability of the tourism industry.

As a result there is considerable concern that these pressures may lead to a breakdown of the existing management system in the NCA, which may in turn jeopardize the Area's natural resource values. In this regard, the future development of the NCA has important lessons for protected area management elsewhere in East Africa, where integrated approaches to community development and natural resource management are increasingly seen as the best option for securing the long-term viability of these areas." (From IUCN's proposal to KfW).

2.2 The NCA in a National Context

"The Ngorongoro Conservation Area Authority (NCAA) is the parastatal responsible for the management of the NCA. It is one of five such parastatals which along with the Wildlife Division make up the wildlife sector. Each of these agencies has a clear definition of roles and each reports to the Minister of Tourism, Natural Resources and Environment. Together they are responsible for a sector vital to the nation's social and economic development. In economic terms, tourism revenues (largely linked to the protected areas system) are an important source of foreign exchange earnings and play a vital role in the nation's balance of payments. As Tanzania's popularity as a tourist destination increases, this contribution to the economy will also grow. Ngorongoro is the single most popular tourist destination in Tanzania.

Protected areas such as the NCA also play a vital role in stimulating economic development in otherwise remote and under-developed areas. Achieving their full potential will require that new and innovative methods are found to channel economic benefits from protected areas to local communities. Less tangible but equally important benefits are also derived from these areas, including the values attributed to watershed protection and conservation of biological

and genetic diversity. The protected areas system also have a wider national and international conservation significance, as has been clearly articulated by Tanzania's first President, Mwalimu Julius Nyerere, in the *Arusha Declaration*.

In social development terms, the role of Ngorongoro as an area legislated for the development of its Maasai residents is important, particularly as pressures on Maasai cultural and social development increase elsewhere. For example, large areas of land adjacent to the NCA which were formerly utilized by Maasai pastoralists have been sold to private developers, increasing pressure on the remaining pastoral system. The wise management of the NCA as an area in which pastoral systems can be promoted is an important element of the national development agenda." (From IUCN's proposal to KfW).

2.3 Problem Analysis

The management systems responsible for the NCA have, to date, been unable to cope with the growing pressures on the Area, such that the original objectives for which the Area was established are now in jeopardy. In response to these issues, a major review of the NCA multiple land-use concept, management and experience was conducted by the *Ad-Hoc Ministerial Commission on Ngorongoro* established by the Minister of Tourism, Natural Resources and Environment in 1988. The Commission submitted its findings in 1990. The major conclusion was that the fundamental multiple-use concept of the NCA is not flawed, but that a number of management mechanisms are urgently needed to ensure that the NCA is able to achieve its objectives. Two principle mechanisms were recommended, firstly a General Management Plan (GMP) to guide future development in the Area, and secondly the establishment of mechanisms to improve the food security situation of the resident Maasai.

2.4 International Assistance to the NCA (“Donor Community”)

International assistance to the NCA has come forward in response to the recommendations of the Ngorongoro *ad hoc* Commission:

- * The NCAA is currently embarking on a major planning exercise which will result in the generation of a General Management Plan (GMP) for the NCA. The NCA GMP is being developed by the NCAA with the technical assistance of IUCN and financial support of the German Ministry for Economic Cooperation and Development (BMZ) under Phase II of the Ngorongoro Conservation and Development Project. The plan is expected to be completed by late 1995. The GMP will provide guidelines to control - but permit- subsistence cultivation by Maasai inside the NCA in support of a long term solution to the growing food supply problem. This initiative will dovetail into projects fielded by Danish and Norwegian Bilateral Aid in the NCA.
- * Danish Bilateral Aid (DANIDA) has targeted its assistance package on sustainable food supply of the NCA’s resident Maasai through rehabilitation of the livestock sector. This includes: gene pool improvement of cattle; support of “below subsistence level” families (i.e. to supply each woman of a given household with a minimum of 10 cattle free of charge); demarcation of grazing areas inside the NCA; trials with prescribed burning for range improvement and tick control; establishment of cattle dips and sustainable water supply in strategic locations. This project is implemented in close collaboration with the NCAA through the Natural Peoples World with extensive site experience. The counterpart (i.e. NCAA) contribution concentrates on general technical support and maintenance of infrastructure such as dips and water holes. The first phase of the project will be two years (1995 to 1996), with a second phase pending on proven success.
- * Norwegian Bilateral Aid (NORAD) supports the NCAA’s Planning and Community Development Department in response to the growing demands for community development projects for the resident Maasai. The project duration is four years.

- * The Frankfurt Zoological Society (FZS) with its long standing tradition in support of the NCAA continues to play an active role in the Ngorongoro Area. Although the currently financed Black Rhino program will terminate in 1995, financial support is believed to continue. The FZS has recently donated one airplane and several vehicles to the NCAA.

In addition, NGOs such as: “The Wildlife Conservation Society”, “Save the Elephant”, and several church groups are active in the NCA without well defined linkages to the NCAA.

Major international project interventions are summarized in table 2.4. Prospects for sustainability of project interventions appear to be good. As a parastatal, the NCAA can retain a proportion of the income it generates to cover its recurrent costs. With support targeted at suitable capital investment along with the concurrent redefinition of management systems to ensure their maintenance, international aid has considerable potential to assist the Tanzanian Government enhance the outstanding values of the NCA, and in the process to demonstrate many important lessons for protected area management in the remainder of Africa.

Table 2.4: Current international involvement in NCA (Donor community)

Organization	Project Title	Project Duration	Financial Input	Output
DANIDA (through Natural Peoples World)	Pastoralist Economic Recovery Program	Jan. 95 - Dec. 95	DKK 2,036,041	USD 600,200
Frankfurt Zoological Society	Cons. of the Black Rhino in the NCAA	1994 - 1995	DEM 250,000	Office space
NORAD	Assistance to NCAA's Planning & Community Development Dept.	1994 - 1997	NOK 4.7 million	Office space
IUCN / BMZ	General management plan for NCAA	1994 - 1995	CHF 400,000	Office space
Wildlife Conservation Society	Insignificant financial support	1995	?	none

3 ANALYSIS OF IUCN'S PROPOSED INTERVENTION PACKAGE

3.1 General Comments

IUCN's draft proposal for the Project Design Study highlights seven priority areas for potential KfW support. Although all seven intervention areas may be of great significance for the sustainable development and management of the NCA, they do not equally qualify for KfW support at this point, for reasons to be discussed.

In general, clear policies for the future of the NCA and its sustainable management are not in place. Great expectations are being placed on the currently evolving General Management

Plan (GMP) for the NCA. It is hoped that the plan will provide the legal and policy framework for a sustainable management regime; that it will provide the long needed zoning concept for the NCA as basis for meaningful investment decisions; that it will provide guidance to the donor community and the NCAA in prioritizing projects and programs; but most of all, that it will provide a well defined **vision statement with appropriate legal support** (i.e. revised Ngorongoro Act) that is fully accepted and supported on the highest political level. It becomes self-evident that a progressive management plan with all its implications for coexistence between resident Maasai and wildlife will be a pre-requisite for long-term international commitments to the NCA. It therefore would be prudent to wait for the approval of the management plan and its legal backing before entering substantial, potentially controversial support programs.

The concept of long-term viability of a multiple land-use system in general and the long-term compatibility of pastoralism, agriculture and conservation in the NCA in particular have been challenged. The management plan, hopefully, will provide the framework for long-term solutions.

There are priority areas which may qualify for immediate support without compromising the NCAA's long term biodiversity conservation objectives, as long as they comply with GMP stipulations and the multiple land-use concept. Following questions, however, should be asked before making a choice:

- * Is a clearly defined policy concept for long-term, sustainable multiple land-use management for the NCA an essential prerequisite for the proposed intervention?
- * Does the proposed intervention conform to national policies and to the management plan priorities and recommendations?
- * Is the proposed intervention beneficial to biodiversity, resident Maasai and/or tourism ?
- * Is the proposed intervention sustainable, not addressed by other donors, controversial?
- * Does the proposed intervention qualify for TZ, FZ, or both?

Against this background the assessment of interventions proposed by IUCN for KfW support should be seen.

3.2 Tourism Development

The NCAA's current concept for tourism development is highly controversial and differs substantially from the guidelines which will be provided by the evolving management plan. The controversial development concept is based on the 1991 Tourism Management Plan, co-financed by the Frankfurt Zoological Society (FZS, 1991). Its overriding goal is to maximize revenues from tourism with little consideration for the welfare of the NCA's resources and endemic human population; it proposes a rather complex and very costly road network and further development of lodges inside the NCA.

The evolving General Management Plan, on the other hand, will provide sound guidelines for sensible, tourism-related infrastructure expansion, resident participation in tourism management, fair revenue sharing, monitoring of environmental impacts and long-term system sustainability (i.e. carrying capacity). This concept still has to find the approval and support by the NCAA and national authorities.

Undoubtedly, tourism will continue to play a key role for the NCA and Tanzania at large. The sustainability of the NCA's resources (i.e. traditional lifestyle of Maasai and balanced wildlife populations), however, should remain the primary concern, since these resources are the basis for the tourist attraction. If this attraction is jeopardized through over-development and/or uncontrolled infrastructure development (see crater rim!), the source for substantial revenue generation may eventually dry up.

In this light it is strongly advised against any direct KfW involvement within the tourism sector, at least until the GMP has been approved by the Government. In any case, IUCN's proposed intervention related to tourism would better qualify for Technical Contributions (TZ).

As a point of potential interest to KfW: the consultant was personally approached by the NCAA conservator to assess opportunities for a "soft loan" or similar financing for the purchase of 10 Mercedes Mini-buses for the NCAA on a trial basis. The buses would be used to ferry tourists to the Ngorongoro crater in an attempt to ease the ever-growing pressure from the crater area, caused through the excessive use of private vehicles. The rationale: to eventually phase out any use of private vehicles inside the caldera for better control of traffic and to prevent crowding. If all crater-tourist-traffic would be handled by well-trained park personnel using good quality and well-maintained vehicles it could undoubtedly benefit the resource and the tourist.

3.3 Food Security in Ngorongoro District

In their study on "food security and nutritional status" of the NCA's resident Maasai population, McCabe et al. found that an increasing human population and a relatively static livestock population have led to a situation in which the Maasai of the Ngorongoro Conservation Area are increasingly dependent on grain to meet their nutritional requirements (Techn.Rep. #10, 1989). An analysis of census data provided through DANIDA's background studies (Naturfolkenes Verden, 1994) suggests that two thirds of the population have fallen below the livestock to human ratio necessary to sustain a purely pastoral economy (which, to common belief may constitute the best management system for sustainable wildlife conservation in the NCA); on average, McCabe conservatively estimated that grain may supply over 65 percent of the caloric intake of the Ngorongoro Maasai which have exceeded a population total of 40,000 inside the NCA (for population distribution in the NCA see Figure 3.3).

Cultivation within the NCA has been prohibited by law until 1993, when Tanzania's President was forced to personally lift the ban in response to alarming reports on malnutrition and starvation threats in the NCA. Since then subsistence farming has been permitted and the overall nutritional situation has improved. However, sustainable solutions still have to be

found. Three alternatives to cultivation in the Area have been proposed: development of land outside the NCA, grain importation, and the rehabilitation of the livestock sector. The latter is the subject of DANIDA's current intervention (s.chapter 2.4). The rehabilitation of the livestock sector, complimented through a well-targeted program for subsistence agriculture, may be the most desirable long-term solution; this alternative is supported by the evolving management plan.

Pastoralism, Conservation and Development in general, have been subject of many studies and technical reports in the NCA, providing an excellent data base for management and international assistance (NCDP's Technical Reports # 1, Livestock Development; #4, Livestock/Wildlife Interactions; # 8, Water Development; # 2, Multiple Land-Use Planning and Management; # 3, Wildlife Ecology; Occ. Paper # 1: Pastoralism, Conservation and Development in the greater Serengeti region etc.).

The "Food Security" sector provides little opportunity for KfW support; IUCN's proposed interventions are more suited for TZ than FZ. More important, this sector seems to be sufficiently covered through DANIDA's active involvement. It may be of general interest to KfW, however, to initiate a dialogue with DANIDA and to monitor the project's progress; more important, to wait for the official approval of the GMP.

3.4 Community Welfare in Ngorongoro District

Maro's survey of existing community services in the NCA provides sound background information on education and health (Technical Report # 13, 1990). Major constraints are: lack of dispensaries, equipment and drugs, lack of paramedics and poor access to hospitals; poorly equipped and understaffed schools, unattractive living and working conditions for teachers and students, and no motivation for children to attend schools and/or to receive any formal education.

The urgent need to improve the community welfare conditions in the NCA has been recognized by the Norwegian Bilateral Aid Agency (s. chapter 2.4), which has entered a four year financial and technical support program agreement with the NCAA's Community Development Department. Achievements through this cooperative effort are summarized in the NCAA's last year's Budget Performance Report (see Appendix 4).

Since this sector seems to be sufficiently covered by NORAD there is little reason for KfW involvement, as suggested by the IUCN proposal. Furthermore, corresponding project support would qualify for TZ rather than FZ.

3.5 Road Rehabilitation and Boundary Maintenance

Road network development seems to be the most suitable program for KfW intervention at this point. There is general agreement on its high priority profile and expected benefits to the resident Maasai (i.e. community development), the tourism sector and wildlife conservation efforts (i.e. anti-poaching). No other donor organization is currently involved in roadworks inside the NCAA, although proposals for EEC support and the World Bank have been made in the past. The EEC decided on road development support for the Serengeti only, the World

Bank on support for primary roads outside the NCA. The framework conditions for an intervention are good.

Assistance for “Boundary Maintenance” as suggested by IUCN will be addressed in the context of the Northern Highland Forest.

KfW support for Road Network Development is highly recommended.

3.6 Enhancing Protected Area Management

Assistance may be required to resolve problems related to water supply, water pollution, and solid-waste disposal. It is anticipated, however, that sufficient guidance on alternative solutions will be provided through the GMP and that the problems will be resolved through the NCAA in collaboration with Lodge owners. The most critical problem in this context is the rather uncontrolled development of lodges and other tourism related infrastructure along the crater rim, which has been possible through direct permits from Dar-es-Salam, overriding the authority of the NCAA. This is a rather delicate political problem which needs to be resolved internally.

General management problems as related to anti-poaching and fire management could very well be handled through NCAA’s in-house expertise and budgets based on the recommendations forthcoming through the GMP.

It therefore is advised against IUCN’s recommendation for KfW intervention within this sector.

3.7 Conservation of the Northern Highland Forest

Results from a survey commissioned in 1989 to Struhsaker et al. indicate that the Northern Highland Forest (NHF) is highly fragmented, deficient in large trees, and generally poor in tree generation (Techn. Rep. # 6, 1989). Major reasons identified for the growing deterioration were: indiscriminate cutting of trees for poles and firewood by agricultural communities along the southern and eastern boundaries of the NHFR, grazing and burning by pastoralists and agricultural encroachment. Since 1989 problems have aggravated. During his visit to the NHFR the consultant noticed heavy encroachment of bracken on glades typifying the rim of the crater. This may become a very serious problem which has not been identified before. Reported water shortage and deteriorating water catchment areas are other major concerns. Although the lack of boundary maintenance has been identified as a problem in need of support in the context of the NHFR, it is believed that this problem could easily be solved by the NCAA with in-house expertise and own financing. Corresponding activities are expected to be specified in the GMP.

Even though the NHFR was originally gazetted as a forest reserve to be protected as a water catchment against all forms of human consumptive use it continues to be widely used by pastoralists and their cattle and for firewood cutting.

Better protection and sound management is urgently needed to safeguard this unique ecosystem for its intrinsic values (e.g. biodiversity conservation), for the benefit of the pastoralists, and, most important, as a vital water catchment area.

Since the NCAA lacks the expertise to adequately address the problems related to proper protection and management of the NHFR, externally supported project intervention is needed. Although such project may better qualify for Technical rather than Financial Support, it is strongly recommended to include a feasibility study for the NHFR in the KfW supported intervention package, since no other donor has shown direct interest yet in supporting the NHFR.

3.8 Environmental Impact Assessment

Although there may be some need for the NCAA to occasionally implement environmental impact assessments in-house, it is strongly suggested that any to be identified EIA in the NCA should remain the responsibility of a project proponent, as is common practice in other parts of the world. The NCAA may provide the ToR for EIAs to be requested for any large scale development project in the NCA, but it is essential that it remains impartial in the process. As to IUCN's suggestion regarding institutional capacity building for the use of a geographic information system - presumably for monitoring purposes-, this would qualify for Technical Support and should be pursued with other donors as a highly desirable project component.

Environmental Impact Assessments as may be required for KfW supported road projects, the Highland Forest and/or the proposed relocation of headquarters, should be addressed in a team effort with expertise available from the team implementing the corresponding feasibility studies.

It therefore is advised against KfW intervention in institutional capacity building for environmental impact assessment and the use of GIS as suggested by IUCN. Both interventions would be more suitable for Technical Support.

4 RECOMMENDED NCA SUPPORT PROGRAM (KfW)

4.1 General comments

Three areas have been selected for potential KfW intervention: the road-network development, the protection of the Northern Highland Forest, and the re-location of the NCAA headquarters. The latter is being proposed to alleviate the growing pressures on the Ngorongoro crater area. Although overall priority should be given to the protection and proper management of the Northern Highland Forest, the proposed intervention may not be suitable for KfW support; nevertheless, it is included in the package for a feasibility assessment due to the urgency of related problems. With a feasibility study in place suitable external support may then be easier to locate.

4.2 Road network development

4.2.1 Problem Analysis and Justification

It was pointed out by TecnEcon (1992) that “ the NCAA is almost unique amongst organizations responsible for road networks in that it has ample funds, with the prospect of increased funding in the future as the tourist industry develops. There is a consequent danger of complacency, or profligate spending on projects that lack economic justification. Present roads objectives remain unclear and management lacks experience in road matters. There is a need to separate revenue (maintenance) expenditure from capital (development) expenditure. The revenue budget should be adequate to meet the maintenance needs of the network and should receive priority funding from the Authority. The capital budget may have to compete with other capital demands and may require support from donors” (page 5-26). This apt analysis of the situation still holds true to date. Road Planning in particular has been hazardous in the NCA as proven through the Tourism Development plan which luckily has not been implemented yet. The tourist circuits as proposed by this plan are utterly unrealistic and would have been very costly. The road network expansion as proposed in the GMP (personal comm. with the Planning Team) is realistic and feasible. The planning team had a rather cautious approach, proposing most essential linkages only. Still, any new constructions need to be very carefully scrutinized and justified. The question remains whether the NCAA in its current capacity will be able to sustain road maintenance of an expanded system. There is no doubt that it could be handled through available budgets as assured by the Chief of NCAA’s Works and Transport Department personally. It is doubtful, however, that proper maintenance of an expanded network can be handled without proper training in equipment maintenance, as well as training in preparing proper workplans.

The current length of maintainable road in the NCA totals about 200 km. It comprises the main through gate-to-gate road (Lodware to SNP), tourist roads in and around Ngorongoro crater and roads to major villages of Endulen and Nainokanaka. There are some 200 - 300 km of motorable track serving tourist locations and local communities.

There is legitimate concern that any road improvement, in particular new access development, may draw even more people into the NCA. On the other hand, access development is one of the most basic needs in the community development program, rather crucial for remote villages. The GMP provides clear guidance on road standards; any new development has therefore to be in tune with the GMP’s proposal.

4.2.2 Objectives and Beneficiaries

In 1994 the Conservator of the NCAA submitted a proposal to KfW requesting assistance for the enhancement of the road network with following specific objectives:

- * to upgrade some existing tracks to all-weather standards, including the Kimba-Endulen-Laetole-Olduval Gorge road, the Lemala-Empakaai-Lake Natron roads; and the Loliondo exit road;
- * institute and sustain routine maintenance regimes on selected tracks;
- * gravel some tracks to improved road standard;

- * enhance managerial and operation capacity and capability to a level which enable it to implement the above objectives.

TecnEcon's feasibility study (1992) recommends four principle objectives to be given priority by the NCAA:

- * the implementation of routine maintenance regimes on all roads in a maintainable condition;
- * the investigation of murram and gravel sources and the identification of suitable deposits for road use;
- * the upgrading of the main gate road; and
- * the rationalization of works department equipment holdings.

TecnEcon's recommendations are still sound and supportable. However, new developments in the NCA may require a new outlook on actual needs which will be reflected in the GMP. This is in response to increasing outside pressure on the NCA and criticism regarding the NCAA's lack of interest in community matters. Objectives for recommended KfW support may therefore have to focus on construction of new roads which provide access to remote communities. The principle beneficiaries of the intervention would be residents of the NCA; roads to be constructed solely for tourism enhancement are of secondary concern, although tourist operators would greatly benefit from any intervention. Road enhancement would also facilitate anti-poaching sorties.

4.2.3 Proposed Intervention

KfW support for following activities is recommended; the activities are listed by priority and are in tune with the activity schedules of the forthcoming GMP. The proposed road work is illustrated in Figure 4.2.3:

(a) Upgrading of the "crater viewpoint" - Empakaai crater track to all weather standards.

This road would provide permanent access to 63% of the NCA's resident population and to the Empakaai crater, a great tourist attraction. Furthermore, it would provide an alternative route to Arusha (circuit) which may be of special significance for tourists. Tourists visiting Ngorongoro are currently forced to return to Arusha along the same access road.

The track is in very poor condition and needs major construction work. It traverses mountainous terrain and plains with potential drainage problems.

(b) Crater access

Any road activity inside the crater should be approached with great caution; it is anticipated that the GMP will provide specific guidelines on the lay-out and standards of the planned roads. The tendency favored for a quality tourist experience is: designated but undeveloped

tracks rather than roads with raised road-beds as suggested by the NCAA. Assistance to the NCAA should possibly be confined to the design stage of the principle circuit with some funding for essential drainage work. The current visual impact of the caldera's road network as experienced from the rim road and the three lodges is highly negative. Car tracks criss-crossing the caldera floor are an eyesore which has to be remedied.

(c) Upgrading of the Ngorongoro - Makao track to all-weather standard

This approximately 90 km track would provide access to 29 % of the NCA's resident population. It is the second most densely populated corridor in the Ngorongoro Conservation Area. The track is currently maintained up to the Osimani village (s.Figure 4.2.3); but upgrading to Makao is urgently required for the benefit of isolated communities without access to medical facilities and other essential services and markets. Construction of this road would have a high political profile. The principle beneficiaries would be local communities. There are no great tourist attractions along this road. Support is needed for 30 km road construction between Osinoni and Makao and possibly for some drainage works along the road between Ngorongoro and Osinoni.

(d) Upgrading the Oldupia - Olbalal track to all weather standard

This approximately 20 km track would mostly serve the local communities; it has little attraction for tourists.

(e) Upgrading the Oldupia - gorge access to all weather standard

This 5 km track leads to the world famous archaeological/palaeontological Oldupia Gorge, a site of great tourist interest. Maintenance of this track falls under the jurisdiction of the Department of Antiquities which has no funds for upkeep. Some assistance is needed for drainage work and a general upgrade.

(f) Construction of the Oldupia - Loliondo access

This is a very controversial access of high political profile. The main promoters are two NCAA commission members located in Loliondo. This road would provide access between the district capital and the NCA. The long-term vision for this access would be to provide commuter bus service twice/weekly as a joint venture service between Loliondo District and the NCA. The road would be of low value for tourism, but will benefit anti-poaching efforts. This project component implies 130 km road construction in partly difficult terrain, a very costly undertaking. The justification for such an expense needs careful scrutiny in a feasibility study.

(g) Upgrading the Serengeti gate - Ndutu track to all weather standard

This 40 km track needs to be upgraded in parts and new construction in others (approximately 20 km). Proposed intervention seems to be well justified. The track would be quite beneficial for tourism, providing access to the Ndutu Lodge and viewing areas for the wildebeest migration. It would benefit the ranger outpost at Ndutu; assist in the control of cattle raiding and serve the Ndutu community with a much needed all weather access.

Assistance may also be needed for the **purchase of some new vehicles** used for road maintenance (i.e. compactors are of special importance), the **upgrading of the mechanic workshop facilities**, as well as departmental strengthening. The latter implies **training of mechanics and heavy duty equipment operators**.

Whether all proposed interventions would be justified remains to be assessed by the proposed feasibility study. TecEcon's recommendations (1992) stipulate any assistance to be conditional upon the NCAA's strict adherence to a series of given ground rules, such as: (1) meeting the necessary road maintenance budgets, (2) amending its costing system, (3) strengthening the management of the works department, (4) developing an appropriate fleet to meet emergency and standard road service/maintenance requirements etc. A very sensible approach which should also be applied to KfW support.

A summary budget of NCAA's Works and Transport Department and an inventory list of the Department's road maintenance equipment is attached as Appendix 5.

4.2.4 Project Impacts, Risks and Assumptions

Impacts of the proposed interventions are expected to be generally benign. However, ecological advice may be required during the early road design phase, especially with respect to new road alignment, water drainage design in ecologically sensitive areas, selection of

suitable gravel pits, choice for location of construction camps, and equipment storage and maintenance during construction. A general assessment of socio-economic impacts of new road access should be an integral part of the proposed feasibility study.

There seems to be little risk that the road project component, as it relates to the NCA, will not be successful. The strong financial base of the NCAA suggests that there should be few problems in meeting proper road maintenance requirements and other still to be specified conditions subsequent to the construction phase. There is a pronounced, politically-stimulated management wish to succeed. The NCAA's poor image amongst local communities needs a boost.

Assumptions are that the proposed intervention is in tune with the GMP; that the GMP is approved at the highest level and the Ngorongoro Act amended accordingly and that the NCAA agrees to and complies with the conditions to be attached to the assistance package.

4.2.5 Project Cost and Financing

Without an updated feasibility study and a careful assessment of actual needs for the proposed interventions any guess on costs and funding are highly speculative. The NCAA's wishlist proposes more than 400 km of new roads plus technical assistance. Undoubtedly, this will have to be downscaled. Without knowing, however, which of the proposed components eventually will be included in the proposed intervention package, no cost figures can be provided at this point. Costs as provided by the NCAA's road engineer for road construction are Tshs 8 million/km which seems to be inflated. The expected costs for the entire road intervention package may range between DEM 2 - 6 Million over a three year period.

Any new road construction should be contracted out, but all road maintenance should be handled by the NCAA's Works and Transport Department.

4.3 Northern Highland Forest

4.3.1 Problem Analysis and Justification

In their survey for community needs for forests and tree products in the NCA and peripheral communities, Chamshama et al. (1989) provided the following information for the pastoral Maasai living inside the NCA, the agricultural villages and estates to the southeast of the Northern Highland Forest Reserve (see Figure 4.3), the crater rim lodges and their employees and the NCAA with their numerous employees:

- * The resident pastoralists rely upon the Ngorongoro's forests for construction wood (i.e. boma fences and houses), fuelwood, and dry season grazing. Highland bomas are constructed from cedar (*Juniperus procera*), a preferred species because of its durability; due to large scale over-exploitation of this species, people have shown interest in protection and reforestation efforts. Houses are normally constructed of *Acacia lahai*, a common, but not very durable species. In spite of high demands, there

does not seem to be a shortage of construction wood or fuelwood in the NCA.

Average time spent on fuelwood collection is

2 hours per bundle, quite tolerable to the NCA communities interviewed. The authors therefore conclude that fuelwood production incentive programs would find little response within the NCA pastoralist communities.

The same source indicates that the permit system for the use of glades for dry season grazing needs urgent revision, and that the general condition of the glades need to be assessed.

- * The agricultural communities bordering the NHFR to the southeast seem to pose the greatest threat to the Reserve's ecological integrity. Fuelwood and building poles are in extremely short supply and the growing demand can only be met through clandestine operations inside the Reserve Forest. Feeble attempts to establish woodlots and village nurseries have not been very successful to date. Estates should be forced to assume responsibility for fuelwood and construction supply for their employees, to be produced on their own lands.
- * The fuelwood and construction wood needs of the Ngorongoro crater village (i.e. NCAA and Lodge employees) and the crater Lodges are currently being met by charcoal and fuelwood from Mangola Chini ((just outside the NCA), and through illegal exploitation of the NHFR. The large scale destruction of Mangola Chini forest for charcoal production has to be controlled and the illegal exploitation of the NHFR to be stopped. The proposed re-location of the Ngorongoro village in conjunction with the early establishment of woodlots on lands to be acquired by the NCAA outside the NCA boundaries will alleviate part of the problem. Opportunities for more efficient space heating, energy-efficient stoves and alternative energy sources for space heating should be assessed. The authors of the study suggest to assess the feasibility of sustainable harvest of *Acacia lahai* from within the NCA as part of the long-term solution, particularly since this species appears to be encroaching upon pasturelands.

Misuse of the Reserve land for cattle grazing and illegal wood exploitation pose a serious threat to the quality of the NHFR's watersheds and the sustainability of water supply from the Reserve for agricultural communities adjacent to the NHFR.

The Northern Highland Forest sustains a large diversity of plant communities ranging from mixed evergreen and semi-deciduous forests to grasslands and alkaline lakes if the ecologically unique Empakaai Crater is included. The biodiversity of the forests is assumed to be very high, supporting several rare and endangered plant and animal species.

4.3.2 Objectives and Beneficiaries

The major objectives for the proposed intervention may be summarized as follows:

- * long-term solution for sustainable management of the Northern Highland Forest Reserve;

- * proper watershed management and sustainable water supplies for the lowland population;
- * adequate protection of the forest through better co-operation with and support of local communities;
- * proper boundary demarcation and boundary maintenance;
- * alternative fuelwood and construction pole supplies for NCA resident pastoralists, agricultural communities and estates, Crater Lodges, Crater Village and the NCAA;
- * practical but acceptable management scheme for grazing needs of pastoral Maasai for the dry season.

The beneficiaries would be all people and communities who currently depend on the forest - directly, or indirectly.

4.3.3 Proposed Intervention

Starting with a general assessment of the conservation status of the Northern Highland Forest Reserve and an update on the magnitude of its inherent problems, the project will identify long-term solutions for the sustainable management of the NHFR. This will be achieved through technical and financial support to the NCA; more specifically, through the preparation and implementation of a management plan for the NHFR. Specific activities and programs included in the management plan will be:

- * watershed rehabilitation; revision of water permit (and access) system; alternative solutions to water supply from the NHFR (i.e. identified reservoirs outside the NHFR); use of windmills, slow-flow solar powered pumps etc.;
- * long-term and sustainable solutions to problems related to demands for fuelwood and construction wood through establishment of woodlots in combination with community nurseries; provision of technical transfer and financial support for energy-efficient stoves; implementation of pilot projects for alternative energy, agro-forestry; establishment of an education and extension service etc.;
- * proper management of forest glades which are currently used by pastoralists during dry season; this includes: revision of permit system; identification of carrying capacities (animal units per area and time frame); controlled burning; weed control (i.e. bracken) etc.;
- * establishment of firebreaks;
- * re-survey and demarcation of NHFR's boundaries;
- * incorporation of forest-related tourist attractions into the NCAA's tourism development program such as trekking, self-guided nature trails etc.;

- * design and implementation of monitoring program for the NCA.

Struhsaker et al. (1989) provide excellent background information on proposed conservation and management of the NHFR. Actual needs for the forest and minor forest products are qualified and quantified by Chamshama et al.(1989). Both authors produced an elaborate list of valuable recommendations for the sustainable management of the NHFR which are still valid to date.

4.3.4 Project Impacts, Risks and Assumptions

The expected impacts of the proposed interventions will be generally benign; the grazing problem, however, requires careful monitoring; especially when combined with prescribed burning. Socio-economic impacts will be positive if the proposed technical and financial support package can meet the described objectives. It is evident that strict law enforcement (i.e. punitive measures for illegal forest entry and resource use) would be detrimental to the already precarious relationship between the NCAA and local people. The development of a good public relations campaign, supported through technical aid and continuous assistance, will be a more promising long-term solution to deep rooted problems. Public support for the conservation of the NHFR can only be secured if practical and sustainable solutions to the notorious water shortages for the agricultural lowland communities, and their growing needs for fuelwood and construction wood can be found; and only if the problems related to the use of the NHFR glades by resident pastoralists can be solved satisfactorily.

Inherent risks to the success of this intervention are: potential lack of interest and commitment by the NCAA and failure to succeed in winning the support of the local people.

Assumptions are: (a) that local support can be secured through tangible benefits for the local people in the form of an attractive technical and financial support package; (b) that acceptable sustainable solutions are found to meet the demands for the forest and its products by the local people; (c) that the proposed interventions are fully supported through the NCA management plan and the Government.

4.3.6 Project Cost and Funding

At this point, no conclusive cost estimates can be made due to the wide range of possible project components. The proposed feasibility study will narrow the scope and will identify/specify the more promising pilot projects and interventions.

As indicated earlier: although the proposed intervention may not be ideally suited for KfW support, a KfW supported feasibility assessment is strongly recommended. Proper protection of the Highland Forest Reserve is one of the highest priority needs in the NCA which cannot be handled by the NCAA without external technical and financial assistance.

4.4 Headquarters Relocation

4.4.1 Problem Analysis and Justification

The services available at the NCA village as an appendix of the NCAA headquarters has attracted many people. The still growing village population currently totals approximately 3,000 people. Most of the villagers are employed by the NCAA, others by the Crater Rim Lodges. The environmental pressures on the crater rim through the large concentration of people are enormous. Problems are aggravated through the current lodges and will grow with other lodges still under construction. The most serious concerns focus on the sustainability of potable water supplies (e.g. the water is currently being pumped under great expense from the crater floor), sewage treatment and the disposal of solid waste; furthermore, the illegal use of forest products, mostly for firewood (i.e. used for spaceheating and cooking stoves). As a result, the forest areas in the vicinity of the Crater Village are being devastated without intervention by the NCAA; understandably, since most of the damage is done by NCAA employees in absence of practical alternatives. The environmental damage is quite visible and has become an eyesore with adverse impacts on tourism.

The re-location of the NCAA headquarters to a site outside of the NCA could dramatically reduce the pressure on the precious crater rim space and its limited resources, provided the conditions at the new location are attractive enough for the village people to move.

The proposed intervention would provide the financial means for the re-location.

4.4.2 Objectives and beneficiaries

The overall objective would be to rehabilitate degraded crater rim locations (mostly caused by the NCAA village and the Lodges). It is assumed that the evolving NCA management plan will offer guidelines regarding the sustainable supply of water to the lodges and other infrastructure to remain at the rim; guidelines for sewage treatment and solid waste disposal; and guidelines regarding sustainable supply of firewood to the lodges and their employees. The proposed intervention should proceed in accordance with the recommendations by the management plan.

More specific objectives of the proposed intervention would be: the selection of an appropriate site for the headquarters and village re-location with sufficient land available for essential infrastructure, agricultural plots for NCAA/Lodge employees with their families and land suitable for the establishment of woodlots.

The proposed intervention would benefit the highly sensitive ecological integrity of the crater rim, the tourism sector and the NCAA/Lodge employees to be moved. It would provide additional jobs, better living conditions for currently relatively isolated villagers, and higher living standards (i.e. readily available agricultural plots, better access to social services). The proposed intervention is fully supported by senior NCAA staff and the villagers.

4.3.3 Proposed Intervention

The proposed headquarters (HQ) re-location would involve an estimated 150 HQ employees and their families and at least 200 Lodge employees with families. Other villagers are expected to leave once the social services currently being offered at the NCAA village are suspended. As

many as 2,000 people are believed to move either to the new location or other communities with abandoning of the HQ.

The NCAA currently employs 327 persons of whom 150 live at the NCAA village.

The new HQ site would have to accommodate the primary and secondary infrastructure listed in table 4.4.3. The cost estimates as provided by NCAA's resident engineer seem to be highly inflated and need verification.

Table 4.4.3 Proposed Infrastructure at new HQ Site

ITEM	COST in Tshs	COST in DEM
30 senior staff dwellings	900,000,000	2,630,700
60 junior staff dwellings	1,200,000,000	3,507,600
Water facilities (i.e. tanks, pumps etc.)	100,000,000	292,300
Sewer system	50,000,000	146,150
Power supply (2 Diesel generators/500 kw each)	120,000,000	350,760
2 km high voltage heavy duty transmission lines	60,000,000	175,380
2 km light transmission lines	10,000,000	29,230
2 step-up transformers of 500 kw each	40,000,000	116,920
2 step-down transformers of 500 kw each	32,000,000	93,536
Other accessories	20,000,000	58,460
Main office building	100,000,000	292,300
Furniture for office, building 15 % of price	15,000,000	43,845
Social hall building	30,000,000	87,690
Day care	10,000,000	29,230
Primary school	70,000,000	204,610
5 teacher houses	100,000,000	292,300
Workshop/garage for light maintenance (includes carpentry workshop, storage, warehouse)	30,000,000	87,690
Parking area, internal roads, gutters, etc.	150,000,000	438,450
Market centre (small shops)	30,000,000	87,690
Conference/training centre	30,000,000	87,690
Gate post, fencing of 150 has	10,000,000	29,230
Landscaping, nursery	10,000,000	29,230
Gas pump (diesel, kerosene, super)	70,000,000	204,610
TOTAL	3,187,000,000	9,315,601

Pending proper assessment, following functions/services are to remain at the current HQ location: (a) all services related to the tourism sector, such as water, power, workshops, guide services, staging area for buses, gas station; (b) ranger post, social center and canteen for drivers from Arusha, small dispensary; (c) road maintenance workshop.

Most buildings and structures at the current HQ site and NCAA village would be destroyed and dismantled, respectively.

An appropriate site for the re-location has tentatively been identified outside the NCA along the Arusha access road (see Figure 4.4.3). The selected site forms part of a large agricultural estate leasehold which has not been under production for several years. There is no infrastructure of any kind on the land. The consultant was told that the lease could therefore be revoked by the Government and the land be purchased by the NCAA from the Government against a nominal fee. An highly productive aquifer has recently been discovered at the new location.. The volcanic soils at the new site are highly fertile and very suitable for diversified agriculture/family gardens.

4.4.4 Project Impacts, Risks and Assumptions

The expected project impacts will generally be benign. Environmental impacts through the removal and abandoning of the current HQ and the re-establishment of the HQ at the new site will be positive. The proposed new location is bare of vegetation, the original vegetation cover having been destroyed through former cultivation; it therefore has been prone to aeolic- and water erosion. The site will greatly benefit through landscaping, re-seeding and re-contouring.

With a proper site development in place, conscientious construction and careful supervision, the new location could be developed attractively without environmental damage. Currently eroded sites should be reclaimed. Rigorous standards should be applied to the current HQ location and village after the proposed removal of structures and secondary infrastructure. The current site should then be properly landscaped and the degraded neighboring forest areas rehabilitated.

Senior HQ staff and villagers interviewed are fully supportive of the proposed intervention because of the obvious advantages to everyone involved. The prerequisites for a success of the proposed intervention are therefore excellent. However, caution should be exercised during the feasibility assessment. Special attention should be paid to a general cost - benefit analysis in which the pros of such a costly undertaking are carefully compared to the cons.

4.4.5 Project Cost and Funding

The potential costs for infrastructure development at the re-location site as presented in table 4.4.3 seem to be unrealistically high; the costs are expected to be reduced significantly, based on a sound feasibility assessment.

Funding would be required for the site development plan and all new infrastructure development. Costs occurring at the current HQ site through removal/destruction of obsolete buildings and infrastructure could easily be absorbed by NCAA's general budget. The same applies to the proposed acquisition of the potential new HQ land.

4.5 Summary Technical Assistance

The package of the proposed program elements is largely aimed at enhancing the infrastructure of the NCA for the benefit of resident communities, more efficient protection of the NCA's resources, the benefit of revenue-generating tourism and enhanced management efficiency. Financial contributions should be complemented through carefully-focused technical assistance aimed at training designated and qualified counterpart staff to adopt effective methods of operation. By insisting on management and financial operating systems as proposed in the evolving GMP- all to the purpose that tourists are charged properly and funds are recorded and managed properly - will help to safeguard the conservation values of the NCA.

The revenue generated by the NCA can easily cover the increase in operational costs expected from the proposed interventions. The sustainability of the proposed capital investments is

therefore hypothetically ensured. The financial viability of the investment is furthermore achieved through the forecasted growth in tourism. The key to the financial viability are the user charges and charges levied on the lodges for special services provided and privileges enjoyed. These charges and fees will need to keep pace with inflation and with changes in the market situation.

The economic viability of all three program components is likely to be relatively high, considering the beneficiaries and sources of income in the NCA. The benefit to the economy is the increase in foreign exchange earnings from tourism.

A summary of the proposed intervention components is provided in table 4.5.

4.6 Proposed Terms of Reference for Project Design Study

4.6.1 Scope of Services

The following Terms of Reference (ToR) summarize the proposed intervention as it relates to the required consulting services. The three segments of the project should be assessed and presented as “stand alone packages”, although the fieldwork and report preparation should be an integrated team effort. The proposed ToR are understood as guidelines only and should not be considered exhaustive or complete. The consulting team is expected to expand or modify the ToR if it appears to be in the best interest of the proposed intervention.

4.6.2 General

The major objectives of the proposed intervention to be funded out of German financial cooperation may be summarized as follows:

- i) Component: “enhancement of road network”
 - * improvement of access to remote NCA communities in order to provide better social services, for villagers to gain access to markets and also to improve general communication; expected results focus on an improvement of the NCAA’s credibility with respect to community development in the NCA;
 - * enhancement of road maintenance program;
 - * better distribution of tourists in the NCA and more opportunities for communities to share revenues from tourism;
 - * enhancement of anti-poaching efforts.
- ii) Protection of Northern Highland Forest Reserve (NHFR)
 - * protection and sustainable management of the NHFR;
 - * effective watershed management protection and sustainable water supplies;
 - * alternative solutions to sustainable supplies of firewood and construction materials;
 - * sustainable use of forest glades by pastoralists;
 - * good working relationship with all stakeholders.
- iii) Re-location of NCA Headquarters
 - * alleviate pressures on crater rim and improve its ecological integrity;

- * improve living conditions and social services for NCAA village at proposed new location;
- * enhance management efficiency of NCAA administration.

The study team is requested to identify, specify and illustrate at feasibility level all activities and interventions necessary to meet the described objectives. It is essential that all possible measures inside and outside the NCA (in particular activities related to the agricultural communities adjacent to the Forest Reserve) are adjusted to the:

(a) financial and administrative capabilities of the NCAA for the sustainability of the operations; b) the ecological integrity of the NCA's ecosystems; and (c) to the self-help capacities of the target groups which may need to be developed as part of the proposed interventions.

It is expected that a workplan, complete with costing and time schedules, will be produced; furthermore, that the ToR for consulting services during project implementation will be elaborated. It is strongly recommended to make proper use of consultant expertise available in the target country. For the cost and time requirement calculations special consideration should be given to the fact that the results of very exhaustive background studies on the project components "roads" and "Northern Highland Forest" are readily available at the NCAA.

4.6.3 Activities

The study team will identify all relevant governmental and non-governmental agencies involved in the Project Area, and liaise with these agencies to ensure that the activities proposed for the KfW intervention are complementary to, and supportive of, ongoing programs. Of special interest is the general management plan for the NCA which is currently under preparation. All activities proposed for KfW support should be in compliance with the GMP.

Elements to be addressed in the final justification for proposed intervention have to include an assessment of : (a) how the proposed project meets the overall goal for the NCA as provided by the GMP; (b) how the project rates in economic terms and how the recommended activities will be sustained by the NCAA; (c) expected socio-economic and environmental impacts; and last not least (d) whether the proposed intervention qualifies for Technical (TZ) or Financial Support (FZ) or both.

Without claiming completeness, the following issues should be covered by the consultants in their studies:

i) Enhancement of road network component

In close co-operation with the NCAA Works and Transport Department, the GMP planning team and the Ngorongoro District Works Department, the study team will review previous proposals for road development in the NCA and will prioritize the (re)construction/rehabilitation requirements of roads to satisfy the wide range of demands. Based on this review and well-targeted field visits the study team will design an implementation program for the inputs identified.

More specifically, without claiming completeness, following issues should be covered by the team:

- * review existing information (i.e. TecnEcon, 19992; SRCS, 1991; NCAA, 1994; NCDP, 1990 etc.);
- * identify priority needs for road network enhancement; this would include new roads, upgrading and maintenance;
- * identify organizational capacities and capabilities to ensure sustainability of proposed priority developments;
- * provide sound justification for the proposed activities (i.e. identify general benefits and specify beneficiaries);
- * describe each proposed intervention in detail (i.e. location, route, terrain, potential logistical and technical constraints, gravel pits to be used, source of other construction materials required, water sources needed during construction phase etc.);
- * qualify and quantify required technical and financial inputs for each proposed priority area;
- * provide cost comparison for options to implement work through the NCAA's Work and Transport Department vs. contract/outsourcing;
- * identify sites for temporary construction camps;
- * quantify and qualify potential environmental and socio-economic impacts expected from the intervention;
- * assess community response in support of, or in reaction to proposed intervention;
- * quantify and qualify overall technical and financial requirements/inputs for proposed interventions; provide time frames for project implementation and a schedule for disbursement of funds.

ii) Protection of the Northern Highland Forest Reserve

In close co-operation with the NCAA and Monduli District Council the study team will recommend actions and develop appropriate implementation proposals for the sustainable management of the Northern Highland Forest. The team is requested to apply a holistic approach to management recommendations (i.e. ecosystem biodiversity conservation). Emphasis is to be placed on participatory activities including the NCA pastoralists as well as the agricultural communities and estate owners bordering the Forest Reserve. Based on a general assessment of the current conservation status of the Northern Highland Forest Reserve (NHFR), the team will provide a practical concept for sustainable conservation. Excellent background information is provided through the NCDP Technical Reports 5 and 6.

Specifically, the team is requested to address following major areas of concern:

- * assess problems related to fuelwood supplies in the area (i.e. describe current illegal use of the Reserve Forest for fuelwood and construction wood by user group and location);
 - * provide actual use and demand forecast estimates for fuelwood and construction wood (by species) by different user groups in the NCA and neighborhood;
 - * provide alternative long-term solutions for wood supply and alternative energy sources respectively; this includes: (a) an assessment of feasible and acceptable pilot projects such as: community nurseries and woodlots, woodlots on agricultural estates, alternative construction materials, potential for sustainable utilization of designated sites of the NHFR, agro-forestry projects; (b) biogas, energy-efficient cooking stoves, energy-efficient space heating; (c) use of solar energy and windmills etc.;
 - * assess status of major watersheds in the NHFR; provide recommendations for watershed rehabilitation and long-term protection;
 - * provide practical proposals for more efficient water distribution; assess potential for wells, reservoirs outside the NCA etc.;
 - * assess environmental/ecological status of forest glades used by pastoralists; provide quantitative and qualitative analysis of forest use by pastoralists (i.e. location, season, number and species composition of livestock, number of families, location of corresponding communities, tradition etc.); identify long-term impacts on glades and neighboring forests through grazing and use of fire;
 - * assess ecological carrying capacities by glade specifying allowable animal units, seasons etc.;
 - * provide comprehensive action plan for sustainable use of glades by pastoralists, to include: rotation system, number of livestock (by species) per time- and area unit, use of fire, firebreaks, methods of control and safety etc.;
 - * assess alternatives to forest glades inside and outside the NCA;
 - * propose activity plan suitable for the improvement of the NCAA/community relationship (i.e. public relation, extension service etc.);
 - * prepare action plan for boundary demarcation and maintenance;
 - * propose means and methods for more efficient control and protection of the forest;
 - * prepare complete project package specifying technical and financial input requirements, time frames and disbursements of funds.
- iii) Headquarters re-location

In close collaboration with the NCAA the team will assess the need for the proposed Headquarters re-location with all its pros and cons. Special consideration should be given to a careful analysis of essential services/infrastructure to remain at the current site. Part of the proposed re-location scheme should be a proposal and activity schedule for the long-term solution of water-, sewage- and solid waste disposal-related problems as related to the lodges and the NCAA Village.

Following major issues should be addressed by the study team:

- * assess the validity of the re-location concept and provide proper justification, based on a cost-benefit analysis and a general environmental impact assessment;
- * identify and describe socio-economic impacts as expected from potential HQ re-location on the village community and the crater rim population at large;
- * identify and describe benefits and beneficiaries from potential HQ re-location;
- * assess suitability of proposed new site from an administrative/technical perspective and an environmental view;
- * prepare a “scratch” site development plan for the new site with details on all required infrastructure;
- * prepare a site plan for the current location (i.e. how the location should look like after removal and dismantling of redundant infrastructure and on completion of rehabilitation efforts);
- * elaborate a rehabilitation plan for the current location;
- * quantify and qualify needs for materials, supplies and labourers for the proposed construction;
- * identify sources for required construction materials, mode of transport, and the locations/availability of labourers;
- * prepare an itemized cost/funding proposal with appropriate time frames and schedule for the disbursements of funds.

4.6.4 Presentation of Project

The envisaged project will have three distinct components. Each component has to be presented in the study in sufficient detail, covering all technical, ecological, economical and financial aspects at feasibility level, including the proposed mode of implementation. Costs will have to be broken down into base costs, justified percentages for miscellaneous items, contingencies and inflation. In general, measures/subprojects should be presented in such a way as to enable evaluation and eventually acceptance or rejection on an individual basis.

4.6.5 Personnel and Tentative Budget

The team should be composed of persons with proven experience in similar projects. Ideally, every team member should cover as wide a range of different subjects as reasonable to keep the team small. Proper use should be made of local expertise, familiar with the project area and the topics addressed. Engineering services are available from local consulting firms and individuals who have implemented some of the referenced technical studies in the NCA.

Team expertise will be shared for the different project components. The teamleader should be selected from the team. The final composition of the team will be determined by the expertise and individual strength of the team members. The proposed Terms of Reference may best be met by a team as proposed in table 4.6.5.

A tentative summary budget for the feasibility study is provided in Table 4.6.5. As may be learned from this table the overall costs would be reduced substantially through recruitment of Tanzanian expertise.

Table 4.6.5 Personnel and Tentative Budget Summary Table

PROJECT COMPONENT (EXPERTISE)	TIME REQUIREMENT	COSTS in DEM
1) Enhancement of road network		
Road Engineer	3 weeks	25,000 (5,000)*1
Mechanical Engineer	3 weeks	25,000 (5,000)*1
2) Protection of Northern Highland Forest		
Agro-forester	3 weeks	25,000 (5000)*1
Hydrologist	3 weeks	25,000 (5000)*1
Ecologist	3 weeks	25,000*2
3) Headquarter relocation		
Landscape Architect	3 weeks	25,000
Civil Engineer	3 weeks	25,000
Economist	3 weeks	25,000
Team leader	1 additional week	8,000
4 airfares Europe - Tanzania @ DEM 7,000.00		28,000
Vehicle rental		5,000
Local travel		5,000
Office rental		1,000
Report preparation		5,000
Miscellaneous expenses		5,000
Contingency funds		5,000
Budget total		262,000 (182,000)
() *1 If locally available in Tanzania; including hotel and allowances		
*2 Includes daily allowance and hotel		

4.6.6 Proposed Time Schedule

Table 4.6.6 provides a summary description of the proposed time table for the study and project approval process.

Table 4.6.6 Proposed Time Schedule

ACTIVITY	IMPLEMENTATION PERIOD 1995	COMPLETION DATE (Submission of document) 1995
Field work N C A A	July	July 31
Draft report preparation	August	August 31
Review	September / October	October 31
Preparation of final document	November	November 30
Approval process	December	December 20
Start of Project		early 1996

4.7 The role of IUCN in the NCA

Without prejudice, the consultant likes to provide following assessment of IUCN's involvement in the NCA.

IUCN, through its Regional Office in Nairobi and financial support through BMZ, commissioned several thematic studies in the NCA, implemented between 1988 and 1990. Although the technical studies, published within a series of technical reports, are of high quality, there has never been any follow-up to the recommendations made in the reports as far as a rushed assessment could tell. In other words, some more paper was produced and shelved. All studies were contracted out by IUCN to local and international consultants. No study has been implemented in-house. As such, IUCN acts like any Consulting Firm hiring expertise on demand and financing headquarters mostly through project overhead costs charged at rates comparable to other consulting firms.

IUCN's most recent involvement in the NCA is through the recruitment of a Parks Planning Specialist from the USA to assist the NCAA in an effort to produce a General Management Plan. The Specialist is being financed through BMZ funds which also pay IUCN's Regional Office the usual administrative fees.

In the last few years the international donor community has increasingly used the services of IUCN for projects related to biodiversity conservation and protected area management, a relatively new field for many donors. The involvement of IUCN in such projects seems to generate some level of comfort for the donors which is not easy to understand. IUCN's strength and proven expertise has always been at the policy level, but not in project implementation. IUCN has to resort to the same consultants / specialists who are accessed by

any other consulting firm bidding for the same job. In this light, the preference role given to IUCN in projects related to protected areas is not understood.

With respect to the proposed project design study for the NCA, there seems to be little reason to provide IUCN with special privileges, since IUCN's Regional Office has no available in-house expertise capable of implementing any of the proposed project components.

On the other hand, there may be several well-qualified consulting firms available in Tanzania which could provide valuable contributions to the proposed feasibility study and the potential intervention at large.

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TWCM, 1993. Cultivation in Ngorongoro Conservation Area.

APPENDIX 1

APPENDIX 2

APPENDIX 2: ITINERARY

Date	Activity
Jan. 29	Arrival Nairobi.
Jan. 30	Met with IUCN representatives in Nairobi; literature search.
Jan. 31	Travel to Ngorongoro via Arusha with R. Olivier; met with NCAA staff in Arusha.
Feb. 01	Morning: Met with senior NCAA staff and IUCN at NCAA headquarters to discuss IUCN's proposed Project Design Study. Afternoon: visit crater roads.
Feb. 02	Morning: Visit Serema Lodge and proposed Esirwa Lodge. Met with L.Mariki at Endulen village. Afternoon: visited Karatu, proposed site for HQ re-location; visited Gibb's farm and adjacent Northern Highland Forest. Discussed with locals fuelwood and water problems.
Feb. 03	Met with senior NCAA staff: discussed with Chief Works and Transport proposed road network and HQ re-location; with Chief Research and Planning and Community Development Department community development projects and evolving management plan; with Chief Natural Resources Management donor involvement in the NCAA. Evening: discussed with FZS representative FZS involvement in NCAA. Discussed with M.Loft, Natural Peoples World, DANIDA livestock project in NCAA.
Feb. 04	Morning: Discussed with Senior NCAA staff , the Conservator and IUCN staff at NCAA headquarters proposed KfW intervention. Afternoon: visited Oldupai and Olbalal to discuss proposed road work and community development projects; visited crater road and village Nainokanoka; discussed with village people and O.Saitoti. general relationship NCAA/local communities. Evening: meeting with tour operators from Arusha.
Feb. 05	Morning: Final meeting with Senior NCAA staff, the Conservator and IUCN's TA, in order to sign the "Letter of Understanding". Afternoon: traveled to Arusha.
Feb. 06	Met with NCAA staff and Chief Conservator at Arusha Liaison Office. Afternoon traveled to Nairobi.
Feb. 07	Morning: met with IUCN staff for final discussions on proposed KfW intervention and potential IUCN involvement. Afternoon: report preparation.
Feb. 08	Return to Germany.

Throughout the visit of the NCA the consultant was accompanied by N.Kuykendall, IUCN's Technical Advisor to the NCAA's Planning Team and Co-ordinator for the General Management Plan. This provided the consultant with an excellent opportunity to familiarize himself with all aspects of the proposed Management Plan.

APPENDIX 3

APPENDIX 3: PERSONS MET

Barnett, Robb	IUCN, Projects Officer
Chausi, E.B.	NCAA , Conservator of Ngorongoro
Gibbs, Margaret	Gibbs Lodge and Farm
Dr.Olivier, Robert	IUCN, Co-ordinator Protected Areas Program
Ker & Downie	Tour Operator
Kijazi, A.	NCAA, Chief Research and Planning Unit
Kuykendall, Nathaniel	UCN, Technical Advisor Planning
Loft, Martin	Natural Peoples World, DANIDA
Makacha, Steve	NCAA, Natural Resources Management
Mariki, Lazarus	Western Zonal Co-ordinator
Mengoriki, Thomas	NCAA, Chief Liaison Office Arusha
Dr. Mkumbo,Samson	NCAA, Chief Community Development Department
Mshanga, Paul	NCAA, Chief Tourism Department
Mutalemwa, J.N.	NCAA , Chief Works and Transport Department
Runyero, Victor	NCAA, Chief Ecologist
Saitoti, Tiplit Ole	Olbalal village counselor
Shallua, Nimrod	NCAA, Chief Personnel and Administration Department
Thompson, Michael	IUCN, former Co-ordinator Protected Areas Program

APPENDIX 4

APPENDIX 5

APPENDIX 5 a) NCAA's Works and Transport Department's annual summary budget

ITEM	COST in Tshs	COST in DEM
Fuel and lubricant	77,664,000	227,012
Permanent staff (20)	2,040,000	5,963
Casual labourers (20)	1,440,000	4,209
Vehicle and heavy plant maintenance	30,000,000	87,690
Total	111,144,000	324,874

5 b) NCAA's Works and Transport Department's equipment holdings

ITEM	QUANTITY	CONDITION			
		good	working	poor	not operational, can be repaired
Bulldozer D 6	1	*			
Bulldozer D 7	1		*		
Bulldozer D 6	1				*
Tipper Trucks	5		*		
Tipper Trucks	4			*	
Motorized Grader	1	*			
Motorized Grader	1				*
Loading Shovel	1	*			
Plate Compacter	1	*			
Water Bowser Truck	1	*			
Water Pump	1		*		
Generator	1		*		
Pick-up Landrover	1	*			