Selected Natural Resource Management and Limited Rural Development Assessment

Carried out for USAID/Namibia as part of the development of a programme strategy for 2004-2010

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LIST OF ACRONYMS

BCLMEP	Benguela Current Large Marine Ecosystem Programme
CBNRM	Community-based Natural Resource Management
CBTE	Community Based Tourism Enterprise
CRIAA	Centre for Research, Information, Action, Development in Southern Africa
DANCED	Danish Co-operation for Environment and Development
DEA	Directorate of Environmental Affairs
DFID	Department for International Development (United Kingdom)
DWA	Department of Water Affairs
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EMU	Emergency Management Unit
EU	European Union
FAO	Food and Agricultural Organisation
FRCP	Fish River Canyon Park
GCP	Gondwana Canyon Park
GDP	Gross Domestic Product
GEF	Global Environment Facility
GRN	Government of the Republic of Namibia
GTZ	Gesellschaft für Technische Zusammenarbeit
HIV/AIDS	Human Immuno Deficiency Virus/Acquired Immuno Deficiency Syndrome
IUCN	World Conservation Union
LAC	Legal Assistance Centre
LIFE	Living in a Finite Environment Programme
MAWRD	Ministry of Agriculture, Water, and Rural Development
MET	Ministry of Environment and Tourism
MLRR	Ministry of Lands, Resettlement and Rehabilitation
NACSO	Namibian Association of Community-based Natural Resource Management Support Organisations
NAPCOD	National Programme to Combat Desertification
NCCED	North Central Community-based Natural Resource Management and Enterprise Development Project
NCSA	National Capacity Self Assessment (Programme)
NDPII	National Development Plan II
NGO	Non-governmental Organisation
NNRC	Namibia Natural Resource Consortium
NOLIDEP	Northern Communal Area Livestock Development Programme
NORAD	Norwegian Agency for Development Co-operation
NPC	National Planning Commission
NRC	Namibia Resource Consultants
NRM	Natural Resource Management
OKACOM	Okavango River Basin Commission
REMU	Regional Emergency Management Unit
SABONET	Southern African Botanical Network
SADC	Southern African Development Community
SARDEP	Sustainable Animal and Rangeland Development Programme
SIDA	Swedish International Development Agency
SO	Strategic Objective
SWAPO	South West Africa Peoples Organisation
TAC	Total Allowable Catch
TBNRM	Trans-boundary Natural Resource Management

UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USAID RCSA	United States Agency for International Development Regional Centre for Southern Africa
USG	United States Government
WILD	Wildlife Integration for Livelihood Development Project
WWF-UK	World Wide Fund for Nature – United Kingdom

Executive Summary

Namibia is the driest country South of the Sahara. Most of the country is classified as semi-arid or arid, and there is a lack of permanent surface water between Namibia's borders. Although the population is small compared to the size of the country, most people are concentrated in relatively small areas. These areas include the few large towns, the *oshana* area of the north central regions and along the rivers of the Kavango and Caprivi Regions. In all of these areas the number of people living within a relatively small space creates environmental pressures. The main problem facing urban areas is the provision of water in a water scarce country. Water provision is also a key issue in the rural areas, particularly the communal lands. The government's cost recovery programme aims to hand over the ownership and maintenance of water supply infrastructure to local communities. However, questions remain about the ability of local communities to pay for such maintenance and about the extent to which equitable access to rural water resources can be ensured. In some areas, such as the north-west, damage to water installations by elephants is a common occurrence which adds an additional financial burden to the water point committees that will be responsible for maintenance. Other problems include finding sufficient water at an appropriate depth for exploitation, increasing salinity of water in some areas and the 'mining' of fossil water. The low rainfall and lack of water, combined with mostly poor soils, mean that the opportunities for improving agricultural production are severely limited. It is significant to note that in the areas considered most suitable for agricultural production, such as the Kavango Region, crop growing contributes little or no cash income to households. Although water is available for irrigation in some northern regions, soils are classified as only poor to medium for crop growing. Further, without government subsidies irrigation is an inefficient use of water for growing low value crops such as maize and millet.

Rainfall is not only low (only 8% of the country receives sufficient rainfall for rain-fed crop growing), but is highly variable over space and time. The result is that Namibians have to cope with considerable uncertainty regarding environmental conditions. The means of coping is largely by developing diversification strategies at different levels. In a region such as Kavango, for example, livelihood activities will include receipt of remittances from family members in wage labour, crop growing, use and sale of fish, use and sale of wild fruit, use and sale of timber products, thatching grass and reeds, and livestock farming. In the drier regions of the north west and south, diversification options are limited because of the lack of permanent rivers and lower rainfall. The effect of variable rainfall on agricultural production is seen in the rates of agricultural growth in recent years. From 1994-98 the agricultural sector experienced a highly erratic growth pattern, mainly due to adverse climatic conditions and the resultant de-stocking and re-stocking of livestock. While national economic growth was positive, growth in the agricultural sector varied from a high of 23,3% to a low of minus 11,1%.

Namibia is considered to be food secure at the national level. However, the Ministry of Agriculture, Water and Rural Development recognises that many households are vulnerable to chronic or acute food insecurity due to highly variable, often low agricultural production, recurrent drought, low incomes and limited off-farm employment opportunities. The government recognises the links between poverty and food insecurity. Namibia's National Poverty Action Programme is one of the main platforms for addressing food insecurity. There are also clear links between food insecurity, poverty and the effects of HIV-AIDS. The effects of the disease not only remove productive members of rural households, but also mean that increasing amounts of time are spent at funerals, which also affects agricultural production. During times of drought, household members affected by the disease do not have additional reserves of energy to cope with diminished food supplies.

The constraints to development, and in particular agricultural growth, are clearly recognised in government policy and strategies. In some policies and strategies the potential of Community-based Natural Resource Management (CBNRM) and tourism are explicitly recognised as diversification options and strategies for reducing poverty.

Underlying problems of poverty, agricultural production and diversification of livelihoods in rural areas is the land issue. There are three main dimensions to this. One is the need for an equitable re-distribution of land in Namibia, the second is the need for productive and sustainable use of re-distributed land and the third is reform that gives tenure on communal land equal status with other forms of tenure. The first requires new and innovative ways of making land available for distribution, the second requires the provision of capacity and institution building to re-settled people and the third requires the provision of secure tenure to groups of communal land residents. In many respects, the existing CBNRM programme can provide lessons for these processes. The package of support that is provided to communities forming conservancies largely reflects the needs of re-settled people. This includes capacity, technical training and institution building. This package is what is required on re-settled land, where poverty is prevalent. Re-settled areas provide some of the existing pre-requisites for conservancy formation, particularly a defined area and a defined group of people. The major challenge on recently re-settled land is to find ways to promote collaboration between people without a common background and history and adherence to community norms. In some areas re-settled prior to independence as part of the previous *apartheid* policy, residents do have a history of collaboration. These areas could also provide opportunities to demonstrate how CBNRM principles and support packages could assist the land re-settlement process. On communal land, despite the passing of the Communal Land Reform Act, there is still a need to press for further tenure reform, based on CBNRM principles of devolution of rights to collective units of proprietorship. The importance of this goes beyond wildlife and tourism, the current focus of CBNRM, but is also crucial for management of rangelands as well as other resources such as veld products.

The theme of diversification of rural agricultural production systems and rural livelihoods fits well with one of the main aims of the new USAID Agricultural Initiative to Cut Hunger in Africa. Although the initiative is primarily focused on the development of small-holder agriculture, there could be opportunities to gain funding for activities aimed at diversifying livelihoods, institutional development and developing markets for environmental goods and services. Reference is made to generating income from the sustainable use of natural resources such as through eco-tourism and the sale of non-timber forest products. Reference is also made to comparative advantages that farmers might have in environmental goods and services. In an arid country such as Namibia, wildlife, tourism and indigenous veld products suggest themselves as areas in which a comparative advantage is strong. However, one constraint is that the initiative will initially start in only one country in southern Africa, Mozambique.

USAID has set three water-related objectives as part of a strategic approach to water management. These are:

- Increased access to clean water and sanitation services
- Improved watershed management
- Improved productivity of water in agriculture

With regard to increased access to clean water and sanitation services, USAID aims to concentrate on countries where water authorities are undertaking the reforms necessary to enable viable partnerships with local governments, water utilities, the private sector, NGOs, communities and families. US$510 million is available for investment over the next three years. Of particular relevance for Namibia is funding of up to US$450 million for water supply, sanitation and health projects that include the construction and rehabilitation of water treatment plants, water and sewer networks, wells, and sewage treatment plants as well as health and hygiene education programmes. Further there are opportunities to replicate the West Africa Water Initiative in other regions. This initiative supports the establishment of small-scale potable water supply and sanitation, hygiene and water management activities primarily in rural areas. USAID intends to spend US$400 million on improved watershed management, integrating surface water, aquifer and coastal zone management.

The Concept Paper for RCSA's Strategic Plan to 2010 includes Enhanced Regional Food Security as one of the Strategic Options for promoting Broad-based Economic Growth and Agricultural Development. The paper sees diversification of rural livelihoods as "a strategic linkage between food security and water resource management strategic options". However the main food security focus is on improved agricultural science and technology, agribusiness, markets and trade. The Strategic Option on Water Resource Management aims to support "sustainable natural resource utilisation through improved rural livelihoods and ecotourism in the headwaters and wetlands of river basins to reduce the conflicts with competing downstream users of water." The SO suggests the Okavango and Zambezi River Basins as areas of focus.

The USAID guidance document on Conflict Prevention suggests ways of ensuring that conflicts will not undermine country programmes. The document suggests the need to look at perceived economic, political, civil-military or social tensions that could lead to deadly conflict, economic crisis, political crisis and complex emergencies. Potential regional conflicts are also noted for scrutiny.

Two such potential areas of conflict can be identified for Namibia:

a) Potential conflict over land reform.

   If land reform does not meet the needs of Namibians then there is potential for economic and political crises leading to potential deadly conflict. This is particularly true if Namibia follows a similar path to Zimbabwe's land reform process which has led to economic and political disruption and violence. Although there are signs that Namibia will not choose this path, development assistance should promote processes that lead to non-violent and economically stable outcomes. Growing frustration among Namibians at the lack of progress with land reform is likely to build pressure for more radical government action.

b) Conflict with neighbours over water use.

   There is potential for conflict to develop between Namibia and neighbouring countries over the use of shared river water resources. In the north Namibia is an upstream neighbour to Botswana and has indicated that it wishes to abstract water from the Okavango River upstream of the Okavango Delta. In the south, Namibia is a downstream neighbour of South Africa and agricultural enterprises and other activities are dependent upon the upstream supply of water. There is an international commission (OKACOM) for the management of the Okavango Basin and there are discussions between Namibia and South Africa over the management of the Orange River. These institutions and the platforms they provide for consultation and negotiation should prevent conflict developing and reaching crisis proportions. However, development assistance can help to bolster the processes of consultation, negotiation and consensus building.

Conclusions

1. Activities based on diversification of rural livelihoods and food security are most likely to be congruent with GRN and USG objectives, policies and strategies.
2. Opportunities exist within USAID Washington programmes and RCSA SOs to develop such activities
3. Care needs to be taken that such activities should link with existing strategies under the Namibia Mission's current SO3. It will be easier to build on existing institutions (e.g. conservancies), NGOs and the implementation experience gained from the existing CBNRM programme. This represents a wealth of capital on which to base further investment. Further, existing activities still require some consolidation and support in order for their full benefits to be realised.
4. However, there are some areas in which the current CBNRM activities are already expanding and there are clear links that can be made between wildlife/tourism and other sectors:

- A limited number of pilots could be developed with the MLRR through applying CBNRM principles and support packages to selected resettlement areas. Links with MLRR could lead to more policy dialogue on group land tenure. The ideal would be to encourage one pilot conservancy to apply for group land rights under existing legislation with the support of MLRR. Another need is to assist MLRR in developing clear and realistic objectives for Land Reform and assisting implementation of these objectives.
- Links could be developed between conservancies and water point committees institutionally and financially. The CBNRM package of support could also be strategically applied to some water user associations/water point committees where there are clear advantages for conservancies and integrated resource management approaches.
- Support could be given to further exploration of opportunities for sustainable veld food harvesting, product development and marketing, also within a conservancy context.
- Support could be given to one or two pilot activities working with non-wildlife conservancies that are focusing on rangeland, water, forestry, fisheries and other resources. This could be packaged to link with RCSA's water basin management SO if the Kavango Region was targeted.

CHAPTER 1
BACKGROUND AND INTRODUCTION

1.1 BACKGROUND

This document is aimed at contributing to the process being carried out by USAID Namibia to develop a programme strategy for the years 2004 to 2010. Much of the new strategy is likely to consist of a continuation of activities under the current strategy. These existing areas of focus are: furthering the development of small and medium enterprises; strengthening education in the lower primary grades; promoting community-based natural resource management (CBNRM); supporting the entrenchment of democracy and stemming the spread of HIV/AIDS. However, USAID is also interested in exploring opportunities to go beyond the current programme activities and explore linkages between existing activities and such opportunities. This document aims to;

I. Provide USAID with a broader understanding of Natural Resource Management (NRM) issues in Namibia with a particular focus on the communal areas.
II. Explore opportunities that might not have been considered if the existing five areas of interest had been looked at in isolation.
III. Explore the opportunities for USAID Namibia to position itself to apply for funding under various Agency, Bush Administration and other initiatives.

In order to do this, the document provides a profile of Namibia's natural resource management base; a profile of the agriculture sector; and an assessment of the food security situation in Namibia. In addition the document considers the strategic advantages of tourism and wildlife (including plants and trees) to contribute to food security and poverty alleviation through the diversification of rural livelihoods. A discussion of relevant land reform and land tenure issues is provided and the potential of CBNRM approaches to contribute these processes is considered. The document also considers the main conflicts likely to arise in the natural resource management sector that could affect the new strategic plan. Conclusions are drawn regarding opportunities for exploring new activities and funding opportunities in the natural resource sector. The Statement of Work for the consultancy is attached as Annexe 5.

1.2 Methodology

As indicated in discussions with USAID prior to beginning the research for this consultancy, the main methodology has been a desk study of relevant documents. A major source of data has been the review of the natural resources sector carried out for the development of the Vision 2030 for sustainable development in Namibia. Other important sources of information were the National Development Plan II and Government State of the Environment reports. A number of interviews were carried out with key persons within the natural resources sector. A list of persons interviewed is contained in Annexe 4. A feedback meeting was held with USAID Namibia staff and a staff member from USAID Washington prior to completing the first draft of this document.

CHAPTER 2
PROFILE OF NAMIBIA'S NATURAL RESOURCE BASE

2.1 How the resource base has shaped the country

The Namibian economy and the livelihoods of the majority of Namibians depend heavily on renewable natural resources. Of the four main sectors that sustain the economy, three - commercial fishing, agriculture and nature-centred tourism are based on the exploitation of renewable natural resources. About 71% of Namibians live in rural areas and are dependent upon some form of farming (Mendelsohn *et al* 2002). Table 2.1 shows the extent to which rural Namibians depend upon renewable natural resources for their livelihoods by region, with the highest percentages being found in the northern regions.

Despite the country's reliance on renewable natural resources, the resource base is characterised by low productivity and/or high variability. The main causes of this are climatic and environmental factors. The most important of these factors are low and highly variable rainfall and an overall water scarcity. Most attention is usually focused on Namibia's low average annual rainfall ranging from less than 50 mm in the Namib Desert to around 650mm in the north east. However, what is more important is the *variability* of the rainfall, both temporal and spatial. The use of averages masks the fact that in many years, the actual rainfall is likely to be below the average, while a few years might experience particularly high rainfall. Even within areas expected to receive the same amount of rainfall in a given year, rainfall is likely to fall unevenly. Some areas might receive more or less than neighbouring areas. Further, while some parts of the country might experience above average rainfall in a given year, in the same year others might experience below average rainfall. For Namibia low and variable rainfall is the norm and droughts are frequent and to be expected (Mendelsohn *et al* 2002). Only eight percent of the country receives more than 500 mm of rain per year, the minimum considered necessary for dryland cropping (Byers 1997).

The low and variable rainfall contributes considerably to a situation of water scarcity. The only permanently flowing rivers are on or near the country's northern and southern borders and the rainfall in Namibia contributes very little to the water volume of these rivers. The lack of readily available fresh water in the interior of the country remains the most important limiting factor for development. Evaporation rates are as high as 3m per year in some areas and the whole country potentially loses much more water through evaporation than it receives in rainfall (Mendelsohn *et al* 2002).

Poor land capability is another important limiting factor. The country's soils are generally poor, contain low levels of moisture, are easily degraded and most of the land has low capability for conventional agricultural activities. Even where

irrigation is possible close to the rivers of the north-east, away from the river floodplains the soils are usually medium to poor quality Kalahari sands.

Due to the erratic rainfall, the availability of grazing on rangelands is variable temporally and spatially and, even in years of good rain livestock carrying capacity is low. Stock carrying capacity is often quoted as 8 ha/large stock unit in the northeast and 24 ha/large stock unit in the south. Due to land degradation (mainly bush encroachment) actual carrying capacities are currently much lower than in the mid 1960s when the estimates were made (NNRC 2002).

Previously, when population densities were much lower, traditional agro-pastoralism practices (nomadic pastoralism in the semi arid and arid areas, and slash and burn cultivation with pastoralism in the higher rainfall areas) were well suited to these limiting factors (NNRC 2002). While these practices remain valid strategies for coping with the prevailing climatic and environmental conditions, the increase in human population makes them less viable (in the case of nomadic pastoralism) and more harmful (in the case of slash and burn). As NNRC (2002) conclude: "Considering the low capability of the land for husbandry, it is not surprising that Namibia's agricultural sector is subject to uncertain output, regular crop failure and a drain on state finances through heavy subsidies and drought relief." While it is unclear how global climate change might affect Namibia, it is generally thought that rainfall over Namibia will decline making farming even more difficult and risky (Mendelsohn *et al* 2002).

Uncertainty and variability also govern the Namibian marine fishing sector (NNRC 2002). The Benguela ecosystem, off the Namibian coast is characterised by one of the world's most intense upwelling systems. The climatic conditions that determine prevailing winds, ocean currents, water temperature and, therefore the availability and distribution of marine resources fluctuate with shifting seasons and other temporary or cyclical changes in the Earth's atmosphere. This situation makes sustainable management of fish stocks a difficult and imprecise science.

The status of Namibia's renewable natural resources and some key issues concerning their use are considered in the following sub-sections. However, it is clear from the above data that Namibia's development options are limited due to climatic and environmental factors. These factors also lead to the conclusion that the one thing that is certain is uncertainty.

Table 2.1. Percentage of people per region that depend on natural resources for their livelihoods. Source DEA 2000 quoted in NNRC (2002)

REGION	% of economically active persons employed in the agriculture, hunting, forestry or fishing sectors	REGION	% of economically active persons employed in the agriculture, hunting, forestry or fishing sectors
Khomas	6	**Oshikoto**	61
Erongo	20 (almost all in marine fishing)	**Kunene**	65
Karas	24 (including marine fishing)	**Caprivi**	70
Hardap	36	**Ohangwena**	73
Otjozondjupa	37	**Omusati**	74
Oshana	41	**Okavango**	74
Omaheke	58		

2.2 Status of key natural resources

Current status and trends regarding water resources

Using Falkenmark's indices, Namibia is classified as being subject to absolute water scarcity and high water stress. According to unpublished data from the Department of Water Affairs, Namibia has available 314 cubic metres of water per person per year, which reflects absolute water scarcity according to Falkenmark's water scarcity index. According to Falkenmark's water stress index, Namibia has high water stress when withdrawal of water is measured against availability.

Water is scarce due to low and highly variable rainfall. This leads to a corresponding variability in runoff, stream flow and infiltration into underground aquifers. The high rates of evaporation ensure that of the rain that falls over most of Namibia, no more than 2% is likely to end up as runoff and less than 1% is available to recharge underground aquifers (Box 2.2).

Water demand in Namibia continues to rise and, as a result, water scarcity has become a problem for all areas that are placed geographically far from the perennial water sources. According to NNRC (2002) the Department of Water Affairs (DWA) has estimated that the country's developed water sources are able to supply a total of 600Mm^3 per annum. Based on projections for future water demand (estimated to grow at 2.2% per annum) these developed sources are likely to be fully exploited by 2016. Even if stricter water demand management

practices are enforced, the central areas of Namibia (in particular the high growth points in the Khomas Region) are expected to experience full use of currently developed sources by 2012. The rate at which water demand is estimated to rise from 2000 to 2030 is given in Box 2.1.

Box 2.1 Namibia's water balance and estimated resource availability (Source: DWA unpublished data quoted in NNRC 2002)

Water Balance

Average rainfall = 250mm/annum (Range < 20mm – 700mm) Area of Namibia = 824 300 Km²
Total precipitation = 824 300 x 250 x 10^{-6} km³/a = ± 200 km³/a

USE	BALANCE %	VOLUME (km³)
Direct Evaporation	83	166
Evapotranspiration	14	28
Runoff in rivers	2	4
Recharge to groundwater	1	2
TOTAL	**100**	**200**

Estimated resource availability

SOURCE	VOLUME (millions of cubic metres Mm³)	REMARK
Groundwater	300	Long term sustainable safe yield
Ephemeral Surface Water	200	Full development at 95% assurance of supply
Perennial Surface Water	150	Installed abstraction capacity
Unconventional	10	Reclamation, re-use, recycling
Available Resources	**660**	

Over the next 30 years, water demand in Namibia will increase rapidly in some areas (in particular, all expanding urban areas) and only moderately in others. The current problem of distributing the available water to where it will most be needed will be exacerbated and, due to full exploitation of developed resources, expensive new water sources (for example desalination plants, new dams, long pipelines and water from foreign countries) will be required. Water demand for irrigation, currently the main water consumer, is expected to increase considerably in future decades.

Box 2.2 Estimated future water demand in Namibia (2000 – 2030) (Source: NNRC 2002)

CONSUMER	ANNUAL DEMAND (Mm^3)*					
	2000	**2005**	**2010**	**2015**	**2020**	**2030**
Domestic	67	75	80	90	100	120
Stock	77	80	80	80	80	80
Industry	6	7	8	9	10	20
Mining	14	19	24	30	35	40
Irrigation	136	209	278	361	425	590
TOTAL	**300**	**390**	**470**	**570**	**650**	**850**

*** Estimates**
Irrigation: Increase with 1 000 ha/a @ 15 000 m^3/ha/a = ± 15 Mm^3/a
Mining: Increase with two new mines every 5 years using ± 2,5 Mm^3/a each
Industry: Increase with ± 1 Mm^3/a each year
Population: Increase at an average of 1,96%/a due to HIV/AIDS effect between 2000 and 2030

Box 2.2 shows that irrigation accounts for just under half current consumption, while livestock account for about a quarter. Domestic consumption is less than a quarter, while the consumption of water by industry and the mining sector is relatively low. The predicted trend is that irrigation, if current policies are followed, would by 2030 account for around 66% of Namibia's water consumption.

Due to shortages in surface water, Namibia relies heavily on groundwater reserves. However, these reserves are subject to low recharge rates from rainfall and periodic ephemeral floods. Despite this, in 2000 groundwater accounted for 45% of Namibia's water supply.

Most of the country's boreholes have been drilled on freehold land, but the government has also provided a network of boreholes on communal land to supply rural farmers and their livestock. A number of problems are associated with rural water supply. In some areas water has a high level of salinity and in others such as the sandveld of the north east the depth of the water below the surface makes drilling expensive and difficult. One of the most pressing problems is maintenance of the thousands of boreholes in remote communal areas. Government has not had the resources to maintain all these boreholes and supply has often been limited by the state of the infrastructure rather than the availability of underground water. As part of its community based management programme, the Ministry of Agriculture, Water and Rural Development (MAWRD) has rehabilitated many water installations ready for hand over to local communities. The villagers, led by a water point committee, will be expected to pay for the costs of maintaining the water installation in future, rather than the government. Some communities will be able to afford the cash needed to pay

their user fees and therefore keep the installation maintained and running. However, some communities are likely to find this difficult. Further, there will also be individuals or households that are unable to pay their water fees and might lose access to water as a result. In the north west considerable damage is done by elephants to rural water installations and residents have to find the cash to pay for the damage. The provision of groundwater sources in communal areas has often resulted in over-exploitation of other resources such as grazing. Without limits on livestock numbers or other livestock management strategies, overgrazing linked to water points is likely to increase as livestock numbers increase in proportion to the provision of water points (Byers 1997).

Water pollution levels in Namibia are still relatively low, but a growing population and expanding development will create increasing volumes of more complex polluting waste, which can easily enter water sources (NNRC 2002). Waste management is a growing problem in most of Namibia's small, rapidly expanding urban centres, which lack adequate facilities and mechanisms to cope with the collection and disposal of both general and hazardous wastes. This problem is exacerbated by the growth of informal settlements in these areas. Outside of Windhoek and the main coastal towns, there is a severe shortage of people with technical and managerial skills, and low levels of public education and involvement regarding littering and pollution. In general, major water pollutants include: agrochemicals (fertilisers, pesticides); leachate from rubbish dumps and poorly designed landfill sites; leakage from buried fuel tanks or containers holding hazardous waste; mining or industrial waste; and salt water intrusion into coastal aquifers that are subject to over abstraction.

Pesticide and fertiliser usage is highest in Caprivi, Kavango, the maize triangle and the Hardap Dam area. An estimated 20% of the agrochemicals and fertilisers used by farmers in the Hardap Dam area are washed into the Fish River basin (NNRC 2002). Signs of agrochemical pollution have been detected in the Kwando River and underground aquifers in the Maize Triangle. Large mining and industrial companies have largely followed government guidelines and regulations concerning pollution and the need for environmental assessments (EAs). However, the delay in government approving new environmental and pollution legislation remains a problem. The case of the Ramatex textile factory near Windhoek is an example of the problems caused by lack of appropriate legislation. Because there is only a policy on EAs and no legislation, an industry that has considerable potential to contribute to ground and water pollution has been established with no EA being carried out. Many small mining operations also do not take adequate measures to guard against pollution from hazardous waste during operations and once the mine has closed. There is a need for government to approve both the Environmental Management Act, which will give teeth to the existing Environmental Assessment policy, and the Pollution and Waste Management and Control Act.

Current status and trends regarding land allocation and distribution in Namibia

Land distribution in Namibia has been skewed by the country's colonial history. Under German rule from 1888 to 1917, white settlers appropriated much of the central part of the country, and began the process of developing "reserves" for black tribal groups. The South African Administration, which replaced the German colonial government under a League of Nations Mandate, continued this process and consolidated the reserves into a system of black homelands based on South Africa's own *apartheid* policy. In many instances the land allocated to black tribal groups was amongst the least suitable for crop growing and livestock farming, constituting large parts of the arid north-west and of the Kalahari sandveld in the east and north-east.

As a result of colonial policies a dual tenure system exists. What has been called “commercial” farmland is held under freehold title, while the state owns communal land. At independence the freehold sector (almost exclusively white) comprised 43% of land, communal areas 41% and conservation areas and other state land 15%. Close to a million people live on communal land while a few thousand people own freehold land.

In 2002 there were 5124 demarcated freehold farms belonging to 4 422 white commercial farmers, 324 belonging to black commercial farmers and 240 to foreign commercial farmers, with 34 farms belonging to the government and 104 unoccupied (Harring and Odendaal 2002). The ownership of the vast majority of freehold farms therefore still remains in the hands of whites although the number of black owners has increased considerably. Most freehold land is used for livestock farming which has been heavily subsidised in the past. Despite an average size of 7 000 ha, many farms are not economically viable because of the semi-arid environmental conditions. It has been estimated that 60% to 80% of commercial farms are not profitable (Harring and Odendaal 2002). There is a world-wide over production of cattle, many farms have been environmentally degraded (particularly by bush encroachment) and the subsidies are gradually being phased out. Many freehold farmers have diversified into wildlife hunting and tourism, which provide useful buffers against drought

Residents of communal land have usufruct rights over the land and its resources such as grazing. Under the South African colonial administration land allocation was the function of government officials. In practice, traditional leaders believed that communal land was owned by the chief or the king, and have always allocated land in terms of customary law (Corbett and Daniels 1996). However this *de facto* allocation and control over land by traditional leaders has been eroded to some extent by post-independence government policy. The erosion of the powers and status of traditional leaders has combined with other factors to

create in most cases an open access situation on Namibian communal land[2]. Without secure and exclusive group tenure over communal land, many residents are unable to guard their land against appropriation by wealthy individuals and settlers from other areas. Traditional common property resource management systems for grazing land appear to be have endured in the more remote areas where it is less easy for outsiders to disrupt informal community agreements (Blackie and Tarr 1999).

Government policy states that if someone wants to move from one communal area to another they need to gain the permission of the traditional authority in the area to which they want to move. In many cases this policy is ignored and people move into an area with their livestock without gaining permission. Government has recognised that access to communal land provides an important safety net for many poor people. If communal land was converted to individual holdings, many people would be left landless and without even the most basic means of subsistence. However, despite government policy that discourages fencing of communal land, a common problem in many communal areas is the illegal fencing of land by wealthy individuals. Sometimes such appropriation might take place with the permission of local headmen, who receive payment. Many of those who have fenced off land as individual holdings are politicians and senior civil servants. One estimate suggests that as much as 25% of the northern communal areas has been illegally fenced off into very large farms (NNRC 2002). The government has not taken strong action in practice to discourage illegal fencing.

The government has recently introduced two main measures to consolidate its approach to land issues. The National Land Policy that was published in 1998 attempted to address some of the tenure issues on communal land. Provision is made for various forms of land rights (GRN 1998): Customary grants; leasehold; freehold; licences; certificates or permits; and State ownership. The policy states that tenure rights will be exclusive, enforcement of which will be supported by law. Among the categories of holders of land rights provided for are "legally constituted bodies and institutions to exercise joint ownership rights (and) duly constituted co-operatives". This definition could mean that a communal area conservancy could be viewed as a “land holder”.

[2] In some areas of the country, particularly the north and north east, traditional authority remains relatively strong and influential. However, when the powers of traditional leaders over land and natural resources are contested by individuals, the state does not often enforce the powers of the traditional leaders. In the CBNRM context this has been observed in both Salambala and Uukwaluudhi conservancies. In both cases the traditional authority allocated land or grazing rights temporarily to people who refused to vacate the land when later requested by the traditional authority. In north west Kavango region traditional leaders are unable to prevent livestock herders from neighbouring Ohangwena region from moving into the area with large herds of livestock. Much depends upon local context. In some parts of Kavango, local police do support traditional leaders in protecting local fish resources from outsiders. In other areas of Kavango residents complain that it is government officials from Rundu who are depleting village forest resources.

The policy provides for the administration of communal land to be vested in Land Boards and Traditional Authorities. It makes provision for long-term leases (up to 99 years) for the use of communal land primarily for business purposes.

The policy states that "tenure rights allocated according to this policy and consequent legislation will include all renewable natural resources on the land, subject to sustainable utilisation and the details of sectoral policy and legislation. These natural resources include wildlife, tourist attractions, fish, water, forest resources and vegetation for grazing" (GRN 1998:11).

The Communal Land Reform Bill (GRN 2002a) was passed by the National Assembly in early 2002. It has been a controversial piece of legislation and many groups still remain dissatisfied with its provisions (Jones 2002a). A series of national consultations preceded the drafting of the Bill. After initially being tabled in the National Assembly, the Bill was then referred to the Standing Committee on Natural Resources for further consultation. It was then sent to the National Council, which expressed its dissatisfaction with certain provisions. Early drafts of the Bill made provision for the secure group tenure over land. However, politicians reportedly objected to this because they feared it would open the way for an entrenchment of ethnic enclaves based on the former *apartheid* era homelands. Traditional leaders believed that such provisions would diminish their own authority over land allocation. As a result reference to secure group tenure has been removed. However, the Act does not specifically preclude group tenure rights. When read with the section of the National Land Policy that provides for legally constituted bodies and institutions to exercise joint ownership rights as a category of land holder, the Act could be used by community institutions such as conservancies for example, to try to obtain group tenure.

The Act provides for the establishment of Land Boards, their composition and functions. A land board may be established for a whole region, a part of a region or across parts of two or more regions. Customary land rights will be allocated by a chief or Traditional Authority, but must be ratified by the land board, which will then register the grant. Provision is made for residents to have access to common grazing lands subject to conditions made by a Chief or Traditional Authority including limits on stock numbers or where grazing may take place. The Chief or Traditional Authority may also grant grazing rights to non-residents for a specified or indefinite period. These rights may be withdrawn. Chiefs are given certain powers to regulate use of the commonage and to exclude outsiders. The Bill does not make specific provision for any form of group rights or tenure over the land, other than the chief's authority to allocate grazing rights to outsiders and withdraw such rights. The chief can be seen as exercising control on behalf of the owner of the land – the State – just as much as he might be seen as exercising control on behalf of local residents (Jones 2002b).

The land boards will control the allocation of leases for land and the Act makes provision for certain prescribed maximum sizes of land for a particular form of land use. Significantly the Act does recognise communal area conservancies. It stipulates that they must be represented on land boards and that land boards may not allocate any leasehold land rights for any purpose that would defeat the objects of a conservancy management and utilisation plan. The recognition of conservancies in the Bill came about through intense lobbying by NGOs and conservancy representatives with the Parliamentary Committee on Natural Resources.

The Act makes it an offence for anyone to use or occupy communal land for any purpose other than under a right acquired in accordance with the provisions of the Act. Legal action can be instituted for the eviction of illegal occupiers of land. It remains to be seen how strongly this provision of the act will be enforced.

Current status and trends regarding biodiversity in Namibia

Namibia's natural environment provides essential services[3], natural capital and genetic resources that buffer the country against economic uncertainty, disease and environmental change (NNRC 2002). However, little is known about much of Namibia's biodiversity. The following (sourced from NNRC 2002) provides a general picture of the state of the country's biodiversity:

- Extensive deforestation has occurred in the Cuvelai delta area, along the Okavango River and around some urban areas.
- Natural wetlands and their accompanying flora and fauna are considered to be the country's most threatened ecosystems. Consequently, the species that are most vulnerable are those dependent on, or confined to, aquatic and riparian habitats.
- Freshwater fish are threatened mainly by over exploitation and the loss of riverine vegetation. Fish stocks in the Okavango River in particular have deteriorated significantly since 1984 due to both overexploitation and removal of vegetation. It is reported that, even if overexploitation of the fish is curtailed, it will be difficult for the depleted fish populations to recover due to the loss of habitat.
- There is a lack of formal protection for many endemic reptile species. 34 species are considered to be threatened.
- 86 bird species are considered to be threatened at the national level. Over 50% of the bird species that are restricted to the riparian belt habitats are threatened.
- There has been a noticeable disappearance of most large wildlife from the Omusati, Oshana, Ohangwena and Oshikoto regions. Despite this, Namibia still supports healthy populations of certain large mammal species in other

[3] Aquifer recharge, flood attenuation, provision of clean air and water, soil production, vegetation production etc.

areas. Currently, approximately 90% of all large mammals are found outside proclaimed conservation areas but data on the biogeography and conservation status for many species are poor.

- Approximately 100 of Namibia's mammal species are provisionally considered to be of conservation concern and in recent historical times some species have experienced dramatic range reductions. Sixteen of Namibia's mammal species have been assigned definite threat categories. The 10% of all mammal species that are either dependent on, or restricted to, wetlands are at risk due to deterioration in many of these habitats.

A National Biodiversity Strategy has been developed by the National Biodiversity Task Force based in the Ministry of Environment and Tourism (MET). The strategy includes further research on centres of biodiversity and endemism and threats to biodiversity as well as protection of biodiversity through extending the state protected area system and through expanding private protection through freehold and communal area conservancies.

Current status and trends within the Forestry sector

Dry woodlands cover about 20% of Namibia's total land area and wooded savannahs cover another 64%. The woodlands are located in the north and north east of the country and are important sources of energy, construction material, food for people and livestock and medicine. The main causes of deforestation and forest resource degradation in the north are shifting agriculture based on slash and burn, cutting of construction poles and harvesting of fuel wood. In Caprivi it was estimated that in 1996 about nine percent of the total land area of 20 000 square kilometres had been cleared for agriculture. Significantly land clearance was highest in the riverine woodlands, the Impalila island woodlands and along the floodplains (Mendelsohn and Roberts 1997). Total annual consumption of fuelwood in 1996 was estimated at 672 331 metric tons. By 2006 consumption is expected to reach 1.1 million metric tons a year (NPC 2001). Excessive burning is also a problem. This disturbs forest ecology, destroys trees, retards tree growth and hinders seedling regeneration (Vigne 2000a).

Current status and trends within marine fisheries

Despite improvements in fisheries management since 1990, some stocks (in particular pilchard) are considered to be in decline. This is largely because of adverse environmental conditions that have dominated since the 1980s. Annexe 1 provides more detailed data on the current status of Namibia's commercial fish stocks. There has been increased regional co-operation between Namibia, Angola and South Africa over management of and research on the fish stocks within the Benguela Current marine ecosystem. This co-operation has been structured through the Benguela Current Large Marine Ecosystem Programme (BCLMEP). This programme aims at improved management of the Benguela Current system in order to ensure that sufficient stocks of commercially harvested fish will still be available.

According to the BCLMEP strategic action plan (UNDP 1999) the colonial and political pasts of the three countries involved have resulted in: Fragmented management of the ecosystem; an absence of coordinated planning; poor legal frameworks; a lack of enforcement and implementation of existing legislation; insufficient public involvement; unbalanced regional capacity development and inadequate financial resources.

These factors combined with a complex ecosystem which has a highly variable environment have resulted in: declines of fish stocks; unsustainable harvesting practices; uncertainty regarding ecosystem status and yields; increasing pollution; habitat destruction and alteration; loss of biotic integrity; threats to biodiversity; harmful algal blooms; and inadequate capacity to monitor and assess ecosystems.

The aim of the BCLMEP is to halt the changing state of the system and where possible, to reverse the process through co-operative regional action to manage the ecosystem on an integrated and sustainable basis. An Interim Benguela Current Commission was established between the three countries to strengthen regional cooperation and to implement the Strategic Action Programme. The commission is supported by a Programme Coordinating Unit and several advisory groups.

Current status and trends regarding inland fisheries

Inland fisheries are an important source of food in northern Namibia. In eastern Caprivi most local people consume about 400g of fish per week (Byers 1997). It is estimated that 2 800 tons of freshwater fish are caught in Namibia each year (Day 1997). The general trend in the Okavango and Caprivi regions is a decline in fish stocks, a decline in the size of fish caught and a decline in the proportion of long-lived species in catches.

Fish numbers in the Okavango River have declined dramatically since 1984 (NNRC 2002). This has been accompanied by a noticeable decline in the average size of individual fish that are caught and a diminishing proportion of long-lived species in the total catch. The major cause for declining freshwater fish populations in Namibia is over fishing. There is no legislation on the harvesting of freshwater fish[4]. In the Kavango Region the use of mosquito nets to catch fish is increasing. Because of the small mesh size, these nets catch all fish and do not allow younger ones to escape. Overfishing is not such a problem in the *oshanas* of the north central regions because the fish do not survive the seasonal drying of the *oshanas* and so will not reproduce in any case (Byers 1997).

[4] New legislation is expected to introduce regulations and to promote community-based management of freshwater fish resources.

2.3 Natural resources and the economy

Water resources

According to NNRC (2002) recent estimates from the Department of Water Affairs show that in 2000, 45% of the water consumed in Namibia was being used for irrigation, 24% for domestic consumers (and urban industries), 26% by livestock and 5% by mines, rural dwellers, wildlife and tourism. Although agriculture accounts for over 70% of the water used, it contributes little more than 10% to GDP. The value added to the water used for agricultural activities in Namibia (especially irrigation) is very low (an estimated N$7.2/$m^3$) when compared to that used for manufacturing (N$272 /$m^3$) or tourism and other service sectors (N$574/$m^3$). The more economically efficient use of water can be promoted by ensuring that it is used for irrigating high value crops, such as grapes and dates, rather than low value crops such as maize and millet. NDP II recognises the need for to limit irrigation development to high-value crops only and to areas where there are suitable soils for irrigation such in eastern Caprivi, Kavango Region and along the Orange River (NPC 2001).

Increasing costs of supply are inevitable as expensive new infrastructure (e.g. desalination plants) needs to be developed for the rapidly expanding urban populations that live far from cheap water sources. As water in some areas becomes more scarce and expensive, development options become increasingly limited. Cost recovery of the capital spent on developing expensive new water resource infrastructure is likely to become increasingly difficult. The affordability of water is particularly a problem for the increasing number of teenage headed households that result from the growing HIV/AIDS epidemic (NNRC 2002).

Subsistence harvesting of wild animals and plants

At a national level it is estimated that 33% of total household consumption in rural areas comes from wild foods and products. Households in the Omusati, Ohangwena, Oshikoto and Okavango regions are the most dependent on wild products while those in the Khomas, Erongo and Karas regions are the least dependent (NNRC 2002). In parts of Caprivi rural communities rely on wild foods for at least 50% of their sustenance. The most important wild products that are harvested include: firewood (93% of all rural households use firewood as their primary source of energy); wood for construction and woodcarvings; thatching grasses; medicinal products and veld foods (from nuts, fruits, leaves, roots and bark); meat (from game animals and fish).

The direct use of biodiversity in Namibia contributes to over 30% of Namibian GDP (NNRC 2002). The indirect uses of natural ecosystems, e.g. ecosystem functions that provide clean air, water and productive soils, are of even greater

value and underpin the country's survival. However, it is difficult to put a direct economic value on these services.

Tourism

It is estimated that during 1999 the tourism industry (accommodation and tour operators) contributed 9,6% of GDP, but that the overall impact on the whole economy of travel and tourism was the equivalent of 20% of GDP (NPC 2001).

Namibia's tourism sector grew by an estimated 14% per annum between 1990 and 1996. Tourism is an important employment generator, particularly in the rural areas. The estimated 25 000 jobs provided by the tourism sector in 1998 represented about 15% of private sector employment (NNRC 2002). In 1998 the contribution to the GDP from hotels and restaurants was estimated to be N$1 300 million. Projections show that this amount could rise to N$2 billion by 2002.

Although data is limited, tourism clearly has a multiplier effect throughout the economy. Tourism impacts a number of services such as accommodation, restaurants, transport, entertainment and financial services. The overall number of people in the economy that owed their jobs to travel and tourism in 1999 was 58 000 (NPC 2001). The full contribution of the tourism sector to the national economy is probably underestimated.

Forest resources

Lack of data makes the calculation of the forestry sector's contribution to GDP difficult. In 1996 it was estimated that the annual value of forest resources used amounted to N$1 058,2 million, which represented 7, 9% of total GDP at market prices. This included contributions of N$383 million for construction poles, N$218 million for tourism[5], N$175 million for fences for crop protection, and N$131 million for firewood (Vigne 2000a). Despite attempts to put a monetary value on use of forest products in Namibia, the real contribution of these products to rural livelihoods (particularly those of the poor) is rarely captured by economists. Research suggests that use of forest products is an integral part of farming activities over most of northern and north-eastern Namibia. The northern woodlands support the majority of Namibians through the supply of energy, construction materials, wild foods and medicines, browse and grazing (NPC 2001). In addition the woodland and savannah ecosystems provide many essential ecological services that underpin the health of the environment. These are difficult to quantify in economic terms.

[5] Based on use of forest of forest ecosystems such as mopane and acacia woodlands in the Etosha National Park and the broad leafed woodlands and riverine vegetation of Caprvi.

Bush encroachment is a phenomenon linked to overgrazing and occurs both on freehold and communal rangeland. It is estimated to cause losses to the livestock industry of between N$300 million and N$600 million a year due to loss of productive grazing land.

Marine resources

The marine fisheries sector is an important foreign exchange earner and significant employment generator for Namibia, despite the contribution to GDP by the combined fisheries and fish-processing sector averaging less than 10% between 1990 and 2000. During the same period these sectors contributed an average of 25 % to Namibia's export earnings. These sectors are estimated to be responsible for 6% of total formal employment or 14 000 jobs. After independence Namibia took control of its territorial waters and the marine fisheries sector grew rapidly. In terms of economic performance, output doubled from 1990 to 1993 and since then, despite a 35% drop in catches (due to unfavourable environmental conditions), earnings from this sector have more than doubled (NNRC 2002). The major reason for this has been an increase in value adding of landed fish. In addition, the low value of the Namibian dollar for several years increased the local currency unit value of exported goods. Some predictions suggest the fisheries sector could grow at 6 - 9% to 2017. The industry expects an increase in exports of high value fish products to overseas markets. In addition, the opening of the Trans-Caprivi and Trans-Kalahari highways are expected to result in more efficient trade and improved export markets for marine products to landlocked country's within the SADC region (NNRC 2002).

Inland fisheries

Approximately 50% of Namibia's total population live close to the northern perennial and seasonal rivers. Although the country's freshwater fish resources contribute little directly to GDP, they play a vital role in enhancing the livelihoods of many of these people through informal employment and subsistence fishing (NNRC 2002).

Fishing opportunities in the Cuvelai Drainage System, the most densely populated area in Namibia, rely on sufficient rains falling in the Angolan highlands and are highly episodic. According to Day (1997) the annual value of the catch in Caprivi is N$9 million. Fishing directly supplies some cash and a valuable supplementary food supply to 79% of rural Caprivians and 90% of all households in Kavango. In total, more than 50% of Namibia's population fish and 45% derive some income from the sale of fish (NNRC 2002).

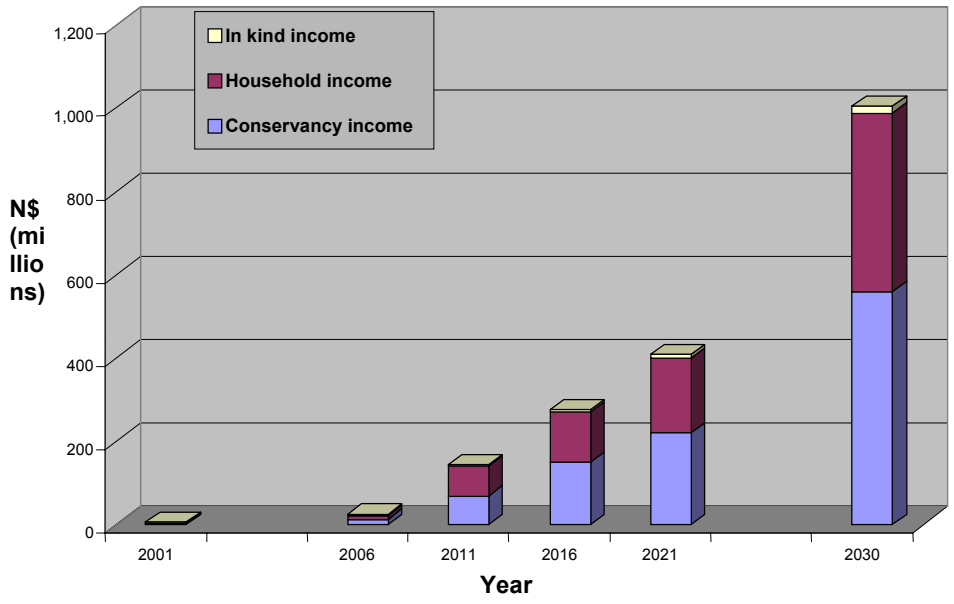
Wildlife

It is estimated that the standing value of the important wildlife species in Namibia is well over 1 billion Namibian dollars (NPC 2001). Wildlife-based tourism forms a major part of the overall tourism industry. The total value derived from trophy hunting alone is estimated to be N$ 130 million a year. This industry employs approximately 3 000 people, both directly and indirectly through related activities (NNRC 2002).

Wildlife has become an important economic diversification activity on freehold farms and is becoming increasingly important economically on communal land. Since communal area conservancies began to be registered by government in 1998, total income to conservancy committees has risen from N$326 378 or US$32 637[6] (three conservancies at an average of N$108 792 or US$10 879) to N$3 221 578 or US$322 157 (15 conservancies at an average of N$214 771 or US$21 477) in September 2002. The highest earning conservancy in 2002 was Nyae Nyae Conservancy with income of N$956 500 (US$95 650)

The financial benefits to conservancies, from just the wildlife and tourism components of CBNRM, projected to 2030 and calculated on conservative figures, is shown in the graph below (source NNRC 2002).

Projected conservancy benefits to 2030



[6] Based upon an exchange rate of N$10/US$1 in 2002

2.4 Current efforts to take advantage of Namibia's natural resource wealth

Indigenous plants and fruits

There is some potential to increase the economic contribution of non-timber products from woodlands and wooded savannah areas. Nuts from marula and mangetti trees have immediate value for use in the pharmaceutical and cosmetic industries, while marula is also used to make jam and a liqueur. About 1 200 women organised in co-operatives are involved in the collection of Marula fruits. Recent research has shown that Mangetti also has potential for exploitation. The MAWRD is spearheading an Indigenous Fruits Task Team to promote indigenous plant resources through their sustainable use, with the aim of contributing to greater household food security, income and employment creation.

The Directorate of Forestry suggests that the existing local market for fruits of Strychnos and Berchemia species could be more efficiently developed with greater promotion, packaging and more intensive plant propagation (NPC 2001). In the north-central regions 20% of households gain some income from the sale of veld fruit and 19% from the sale of alcoholic drinks made from forest fruits, while in Kavango Region the sale forest products ranks as the most important form of off-farm enterprise (NRC 2000). There is an established international market for Devil's Claw, but the main profits are reaped overseas because no processing takes place in Namibia. Opportunities for developing processing in Namibia have been explored, but there has been resistance by overseas buyers. It is also not clear to what extent value adding in Namibia would mean increased income for harvesters. The main benefit would probably go to the owners of processing plants and their labourers.

Wildlife and tourism

Wildlife and tourism have begun to be recognised by government as resources that can be economically productive, both on freehold and communal land. The government is encouraging freehold farmers to pool their resources in conservancies for more efficient wildlife management. However, more could be done to enable wildlife to compete with other forms of land use on equal terms through the further removal of agricultural subsidies and macro-economic price distortions.

The government has also encouraged the development of wildlife conservancies on communal land. Direct support to these conservancies is given through a CBNRM sub-division in the MET and through donations of game to conservancies. The focus so far has been on communal areas where healthy wildlife populations still exist or where good habitat offers opportunities for re-

establishing wildlife, mainly in the north-eastern parts of the country. Re-introduction of wildlife and the establishment of conservancies in the north-central and southern regions are also planned.

The MET has begun a quantitative assessment of woodland resources that will aid in the development of an important database for forestry, biodiversity, desertification monitoring and future climate change monitoring (NNRC 2002). Similarly the national aerial survey and complementary ground game counts conducted in the Kunene region in 2001 by NGOs, conservancies and MET staff have provided valuable information regarding wildlife numbers and distribution. Several other studies include the forest fire monitoring system, Namibia's tree atlas project and the National Botanical Research Institute's Vegetation Mapping project and the USAID-funded Natural Resource Accounting programme. All of these efforts will provide the necessary information for sustainable harvesting of natural resources in various forms.

Marine resources

Since independence in 1990 considerable improvements have been made regarding the monitoring and regulation of Namibia's fish stocks (NNRC 2002). Access is regulated by quota allotments and fishing rights. After independence a 200-mile exclusive economic zone (EEZ) was declared, prohibiting fishing by foreign trawlers except under licence. The GRN has also set conservative Total Allowable Catches (TAC's) in order to promote the sustainability of resources and to enhance the recovery of anchovy, pilchard and hake stocks after decades of overexploitation. In 2001 fishing rights were extended from four, seven and ten years to seven, ten, 15 and 20 years. While the primary aim of this policy was to create a more stable business environment it is expected that it will also create an incentive for companies to adopt more sustainable fishing practices. In order to discourage the targeting of by-catch species by-catch fees have been introduced.

Aquaculture

Aquaculture, or fish farming, is often suggested as a means of increasing local income and of contributing to conservation of fish resources. The government has conducted research into how aquaculture can be promoted. However, with Namibia's limited freshwater resources and market restrictions caused by low-priced marine fish, it is generally accepted that aquaculture does not have large potential as a major economic activity (NNRC 2002).

2.5 Namibia's most critical natural resource issues

A number of studies over the past six years have attempted to identify the most critical issues regarding natural resources and sustainable development in Namibia. Byers (1997) identified four key environmental threats as well as a number of proximate causes and ultimate root causes of these threats. Krugmann (2001) identified 12 main threats to sustainable development in Namibia. While he focused on a number of cross-cutting issues such as governance and economic policy, each of the threats identified is either directly related to natural resource issues or has a direct influence on natural resource use and management. NNRC (2002) identified 14 threats to sustainable development and two additional environmental threats associated with urbanisation. However, for the purposes of this paper, attention is focused on the key NRM issues that are most relevant to USAID's current areas of programmatic focus[7].

Population growth and settlement patterns

Population growth directly affects future demand for natural resources, rates of urbanisation and poverty. Namibia's population (currently estimated at 1,8 million) has been reckoned to be growing at more than three percent a year. There are indications, however, that the impact of HIV/AIDS might reduce the rate of annual increase to around two percent (Krugmann 2001). Even if this is the case, an increase of two percent annually will still place stress on Namibia's renewable natural resources. The distribution of the population is also important. About 60% of Namibians live in the northern communal areas and about 40% of these live in the four north central regions. Within this area half of the people live within the Cuvelai drainage zone which is one of the areas of Namibia most threatened by desertification. Population growth drives, and is driven by, factors such as poverty, lack of education, poor health and nutrition, lack of access to fertile land and to water and sanitation (Krugmann 2001).

An important dimension of the population issue relates to increasing urbanisation due to migration from the rural areas. Such migration is often driven by the lack of resources and poor quality of life for rural residents and the lure of perceived opportunities in the urban destination areas. Most of the migrants do not improve their lot but end up in poorly serviced 'informal settlements' at the outskirts of towns, often swelling the ranks of the urban unemployed and adding to urban poverty. This process has been reflected in rapid expansion of urban areas. Average urban population growth rates in recent years have been in the range of 5-6% (Krugmann 2001).

[7] A full list of key environmental/sustainable development issues is provided in Annexe 2.

Poverty and inequality

Poverty and inequality directly contribute to, and result from, the over utilisation of natural resources. Namibia has one of the most highly skewed income distributions in the world (with a Gini coefficient of 0.7). Poverty is particularly concentrated among people living on rural communal land i.e. the majority of the population. Poor people have few options but to depend on primary production for food and energy and therefore can place tremendous strain on natural resources.

Increasing water stress

Namibia's limited freshwater resources are being placed under increasing stress due to population growth, rapid urbanisation and economic growth.

Land issues

The unequal distribution of land, if not resolved in the near future, will lead to conflict that could destabilise the country and its economy (see also Chapter 6). The lack of secure group tenure does not provide incentives for people to care for the land and invest in its improvement. The problem of "open access" resources in Namibia is economically and environmentally unsound as it leads to environmental degradation, dissipation of net benefits and reduced production (NNRC 2002).

There is sufficient consensus that the tenure issue is one of the key underlying causes of land and resource degradation. NRC (2000) suggests that the failure of society to plan and manage forest use is a major cause of forest resource degradation. They suggest that community structures to plan and manage forest resources have not been developed because of the lack of tenurial rights over land and forest resources. According to Dewdney (1996: iv): "The introduction of secure, exclusive **tenure** at the **community level** is the single most important policy reform needed to prevent degradation". Further: A related institutional reform which is required is the *creation of local bodies capable of managing natural resources within their community*, with the support of regional and national State institutions" (Dewdney 1996: iv).

The HIV/AIDS epidemic

The prevalence of the HIV/AIDS epidemic undermines human well-being and economic prosperity by reducing the quantity and quality of the labour force (see also Chapter 4). In addition it wipes out past investments in education and training and places a strain on communities and households that need to care for orphaned children, the sick and dying. The impacts of HIV/AIDS affect poverty

and household food security negatively and this in turn can lead to unsustainable resource use.

Increasing competition with neighbouring countries for shared natural resources

Improved and sustained co-operation and co-ordination with neighbouring countries regarding policies and policy implementation is essential to avoid future inequitable use, pollution and conflict over shared water (see also Chapter 6), marine fisheries and wildlife resources. The SADC Protocol on Shared Watercourse Systems provides the current framework for the management of shared watercourses in the SADC area. The Protocol makes provision for the equitable sharing of shared watercourses, the relationship between conservation and development, the exchange of information, water quality, notification of hazards and the control of alien species.

Angola, Namibia and Botswana have established a permanent river basin body, the Okavango River Basin Commission (OKACOM). The objective of this Commission is to act as technical advisor to the contracting parties on matters relating to the conservation, development and utilisation of water resources. Specifically its functions include advising the parties on the safe yield from the river basin, the reasonable demand of consumers, criteria to be adopted in the conservation, equitable allocation and sustainable utilisation of water resources, the development of water resources, the prevention of pollution, and measures to alleviate water shortages. Each of the parties has appointed commissioners from their relevant institutions to the Commission. The Commission has a Basin Steering Committee that works with a study manager who is mandated to co-ordinate the different activities pertaining to the technical work of OKACOM.

The SADC Protocol on Wildlife Conservation and Law Enforcement applies to the conservation and sustainable use of wildlife resources, excluding forestry and fishery resources. The objective of the Protocol is to establish a common framework for the conservation and sustainable use of wildlife resources in the region to assist with the effective enforcement of laws governing those resources. The protocol has a number of key features that lay a foundation for regional co-operation and Transboundary natural resource management (TBNRM) activities. The protocol recognises the potential contribution of wildlife to sustainable economic development.

The loss of biodiversity

The loss of biodiversity impacts on development options. It disrupts ecosystem stability and the functions that underpin human survival (e.g. the provision of clean air and water, the control of soil erosion and floods, and the assimilation of wastes).

2.6 Donor involvement in the Natural Resources Sector

A number of major bi-lateral donors have reduced their commitment to Namibia and/or phased out assistance over the past few years. For example the British Department for International Development (DFID) is switching to a regional focus and direct support to Namibia will end in 2003. The Dutch Government has ended its environmental support to Namibia and so has the Norwegian government development agency NORAD. By contrast Finnish and German government development support to Namibia is expected to continue well into the middle of the decade. The French government is exploring the possibility of support to CBNRM activities in the North Central Regions. The overall picture, however, is one of diminishing bilateral support to Namibia and therefore to the environment sector. It is likely however, that funding from "conduit" organisations such as WWF-UK might continue beyond the horizons of the bilaterals. Of note is the continued funding support from the Finnish government and other sources for community forestry and community water management until well into the middle of the decade. Most current projects are due to end around the time that activities under the new USAID Namibia country strategy to 2010 are likely to be starting up.

Current donor support to the NRM sector (excluding agriculture)

Austrian Government

- Support to development of tourism master plans. US$500 000. 1998-2005.

DFID

- Wildlife Integration for Livelihood Development Project. US$ 1 624 000. From September 2000 to September 2003. A research project to provide good data on the link and/or trade-offs between wildlife and tourism and existing household livelihood strategies.

- North Central Community-based Natural Resource Management and Enterprise Development (NCCED) Project. US$2 520 000. November 2000-November 2004. Project aims to reduce poverty through increased income and employment from crafts, tourism and sustainable community-based natural resource management in the north central regions.

EU

- Promoting links between biodiversity and sustainable natural resource management. US$120 000. 2002-2003.
- The EU project to support tourism development in Namibia (current funding level of approx. US$7 million) ends in 2004. The project has focused on

capacity building in the Directorate of Tourism, the development of the parastatal company Namibia Wildlife Resorts, the establishment of a Namibian Tourism Board and support to community-based tourism. The project is currently supporting the development of management plans in protected areas including provision for the involvement of local communities.

Finnish Government

- Ongoing support to community-based forestry through Namibia-Finland Forestry Programme to 2005.

- Ongoing support to community-based water management to 2004.

- Support to State of Environment Reporting. US$600 000. 1996-2005.

GTZ

- Biodiversity support. US$350 000.

- Support for combatting desertification in communal areas. US$1,4 million. 1994-2004 (probable continuation).

- Support to Environmental Profile of Kunene Region. US$150 000

Namibian Government

- Support to 6 conservancies in the north west in reducing human/elephant conflicts through the Game Products Trust Fund. US$160 000.

SIDA

- Otjozondupa/southern Kunene CBNRM support. US$400 000.

- Every River has its People project to improve community involvement in decision-making in the Okavango River Basin. US$350 000. 2000-2003.

UNDP

I. Global Environment Facility funded Projects[8]

- Integrated Management of the Benguela Current Large Marine Ecosystem. Project aims to formulate and implement a Strategic Action Programme in

[8] UNDP and the World Bank are the official channels for the administration of GEF funds.

order to achieve sustainable use of marine resources in the Benguela Current Large Marine Ecosystem.

- OKACOM – Environmental Protection and Sustainable Management of the Okavango River Basin. US$8 190 000. 2001-2004. The project aims to strengthen transboundary joint management of the Okavango River Basin in order to achieve sustainable use of water and aquatic resources.

- SABONET – Inventory, Evaluation and Monitoring of Botanical Diversity in Southern Africa. Project aims to build capacity of professional and support staff of the Herbarium and provide links with similar institutions in other SADC countries.

- The Southern Africa Biodiversity Support Programme. Project aims to promote the conservation and sustainable use of biodiversity in Namibia by strengthening regional biodiversity planning, inter state cooperation and information exchange. US$100 000. 1994-2004.

- GEF Small Grants Programme – a funding mechanism aimed at supporting community-based initiatives that respond to GEF criteria and objectives. Starting 2003.

II. UNDP Projects

- The National Capacity Self-Assessment (NCSA) project. The project aims to identify, through a country-driven consultative process, priorities and needs for capacity building to protect the global environment. It will analyse capacity gaps and capacity building needs for each of the three Convention thematic areas, namely biodiversity, climate change and land degradation.

USAID/NAMIBIA

WWF-LIFE Project is requesting US$2,7 million bridging funds from May 2003 through September 2004. The existing level of bilateral funding was approx. US$9 million from August 1999 through April 2003.

USAID-RCSA

- US$1 million to support several activities: Transboundary fisheries management along the Chobe/Zambezi river system (ends 2003); Transboundary management plans for high value game species (2002-2003); support to CBNRM activities in Caprivi that link to TBNRM; exchange visits between Namibia, Mozambique and Zambia; the development of tourism plans in eastern Caprivi.

World Bank

- Global Environment Facility funded project: Integrated Eco-system Management in Namibia through the National Conservancy Network. Planned for five years with GEF funding of US$7.1 million. Implementation arrangements still under discussion between GRN, NGOs and World Bank. Project will mainly support NRM activities in selected conservancies, but will also give attention to the CBNRM policy framework, capacity building of NGOs and some institution building for conservancies.

CHAPTER 3
A PROFILE OF THE AGRICULTURE SECTOR

3.1 The contribution of Agriculture to the economy

In 1998 the agricultural sector contributed 9% to GDP. This is small compared to other sectors. In addition value added production in agriculture also contributes little to GDP. According to NRC (2000) agriculture has little impact on overall economic growth. From 1994-98 the agricultural sector experienced a highly erratic growth pattern, mainly due to adverse climatic conditions and the resultant de-stocking and re-stocking of livestock. While national economic growth was positive, growth in the agricultural sector varied from a high of 23,3% to a low of minus 11,1%. The highest level of fluctuation in growth was seen in the communal sector which saw a high of 95,5% in 1994 and a low of minus 20,8% in 1998.

The communal sector significantly offset the negative growth in the freehold sector and showed an average growth rate of 7,9% a year. The growth rate in the freehold sector averaged 2,7% a year. According to NPC (2001) due to a reduction in returns per hectare on many freehold livestock ranches, there is a shift towards activities such as game farming and tourism and absentee farming is increasing. By contrast, small holder production on communal lands has increased on average 7,1% a year.

In terms of exports, agricultural earnings are rather more significant. In 1997 food and live animals contributed about 27% of total export earnings of N$6.3 billion.

The production and value per ton of certain high value crops has been increasing. Expansion of lucerne production is substituting a significant proportion of fodder import and the value of production increased from just over N2 million in 1994 to N$6,2 million in 1996. Grape production was valued at around N$21 million in 1994, but had more than doubled to N$43 million in 1998 (NPC 2001).

Generally, crop farming does not provide rural households with a significant cash income. Results of studies on rural livelihoods in Kavango Region, for example, suggest that although farming is an important direct provider of staple food for many rural households, it makes virtually no contribution to the cash incomes of most households (NPC 2001).

Both the communal and freehold sectors are being cross-subsidised from non-farm income and remittances and non-traditional activities such as wildlife and tourism are becoming increasingly important.

3.2 The main differences between the commercial and communal areas

The term "freehold" is used throughout this document to refer to what in Namibia is generally known as the "commercial" farming sector. Freehold is a better term as it applies to the tenure regime for the sector. There are commercial farmers in many communal areas particularly in the livestock sector, making a distinction between "commercial" and "communal" redundant. It probably suited the pre-independence administration to assume that black communal area residents were not capable of "commercial" farming. The veterinary "red line" that separates the northern communal areas from the rest of the country is as much a political instrument as it is one to prevent the spread of disease. It effectively prevents competition between white freehold cattle farmers and black communal area farmers. While Namibia is linked to external export markets such as that of the European Union (either directly or indirectly[9]), it will be difficult to remove the "red line". The open border with Angola in the north leaves the possibility of a disease outbreak high. A well-maintained veterinary fence on the Angolan border would be the means to removing Namibia's internal veterinary cordon. Removing the internal fence would boost the development of commercial livestock farming in the northern communal areas (and make it easier to de-stock during drought) and enable the sale and transport of game species from these areas.

The USAID-funded LIFE Project is undertaking a feasibility study to investigate the possibility of establishing quarantine camps at selected places along the existing veterinary fence in order to facilitate the sale of high value game species from north of the red line. The development of the quarantine camps would be linked to the more intensive production of high value species through game farming in fenced areas on communal land. An assessment is being carried out of the market for high value game species that could be sold to game farmers in Namibia and South Africa.

<u>Characteristics of the Freehold Farming Sector (partly based on NNRC 2002)</u>

- The main characteristic of this sector is the tenure regime. Freehold tenure gives the land holder secure tenure of property rights over the land. This enables the land holder to enforce the property rights in law and to raise loans for investment in improvements using the land as surety.
- Further, prior to independence, the freehold sector was supported artificially by an array of government subisidies and controls on prices. Considerable expenditure was made on the provision of extension and veterinary services and the provision of infrastructure such as roads and telecommunications to

[9] For example, Namibia has to meet EU standards because its livestock are exported to South Africa which has an EU quota.

support the sector. Some of the main subsidies have been withdrawn since independence.

- In 1998 freehold agriculture contributed only 3.8 % to GDP (this included meat processing) but 27% of exports. Meat and meat products, live cattle and other stock (mainly for the South African market) make up 90% of all agricultural exports, nearly al of which come from the freehold sector.
- Rain fed and irrigated commercial crop production occurs on 25 000 hectares in the Karst area (the Tsumeb, Otavi, Grootfontein 'maize triangle'), on small plots at the Hardap scheme, near Stampriet, and along some of the perennial and ephemeral river courses. The provision of irrigated water to schemes like that at Hardap represent a major subsidy to production as the farmers pay neither the true cost of water supply nor the true environmental cost.
- There is considerable diversity in the success of management of freehold farms. Some have been well managed and remain productive. However, in parts of the north, bush encroachment due to poor management has reduced productivity by up to 80%.
- Freehold livestock farming has for many years depended on trying to manage livestock on a fixed area of land according to carrying capacities determined by government scientists. Rotational grazing is practised between fenced off grazing camps.
- Since the 1970's many freehold livestock farmers have moved towards mixed game/livestock farming. This diversification helps to create a valuable buffer against drought because, unlike cattle, wild animals are extremely well suited to Namibia's harsh environmental conditions.

Characteristics of the Communal farming sector

- Communal land is owned by the state, although many communities view their traditional leaders as being the custodians of the land on their behalf. Most communal grazing land is unfenced and access is largely open to residents and outsiders. Creating a management regime for communal grazing land is the main problem and will remain difficult unless local communities can gain exclusive tenure over their land.
- In most of the communal areas, livestock ownership is very skewed, with a few large herd owners and many people with only a few animals. In Caprivi a poor person is reckoned to be someone with less than ten head of cattle. The majority of households in many areas do not own enough animals to earn a livelihood from livestock production alone (Byers 1997).
- While for most freehold land holders, farming will be their main economic activity, in the communal areas household livelihoods are supported by a variety of activities. Such activities include livestock, cropping (where conditions permit), wage labour, gathering "veld food", hunting, receipt of remittances, etc.

- The success of livestock farming on communal land depended in the past on mobility as a strategy for ensuring access to water and pasture. However, the provision of permanent boreholes, the increase in the human population and development of large permanent settlements has helped to reduce the possibility of maintaining mobility as a range management strategy.[10]
- In most communal areas, livestock are considered an investment, only to be slaughtered or sold for specific purposes. Since animals can be turned into cash in cases of emergency, they are important for household security (Byers 1997). Cattle also have important socio-cultural values for many groups and are required for feasts and ceremonies. Much livestock management is aimed at minimising risk. Thus a traditional strategy is to maximise herd sizes so that at least some cattle will survive a drought. The idea of livestock as an investment and a hedge against risk remains strong among most Namibians, even those in wage employment. It is common for example, for government officials to invest part of their earnings in livestock in the communal areas. This is used as a hedge against the possibility of losing employment for one reason or another. The livestock in the communal areas represent a fall-back position (Hailwa *pers.comm*. 2003).
- In the south and western communal areas, small-stock predominates. In the north and north-east mixed subsistence farming is practised but livestock farming is the major agricultural activity. Currently, communal livestock production contributes about one quarter to the total agricultural output of Namibia.
- Although subsistence agriculture in the communal areas makes a limited contribution to Namibia's GDP (2.2% in 1998), its value is underestimated and it is vital for the livelihood of most rural households. Distant markets limit the development of farming in the communal areas and agricultural incomes are low and variable. Livestock supply many non-marketed products and services, the value of which is not fully reflected in the national accounts. These include draught power, milk, hides, meat, manure and a traditional form of savings for rural communities.
- Possibilities for appropriate animal husbandry practices in communal areas are reduced as the number of absentee farmers investing in livestock grows (e.g. urban-based civil servants and business people). In recent years traditional authorities have begun to lose their influence and illegal fencing of prime land by wealthy individuals and small groups has become common.
- Veterinary fences that prevent the spread of contagious livestock diseases have limited the export marketing opportunities of communal farmers but have been essential for the maintenance of livestock exports from herds south of the fence, the majority of which are from freehold farms.

[10] Although some degree of movement in search of grazing is still continued in many parts of the north-western communal lands and is still maintained as a viable strategy by the Himba people in the extreme north west. Seasonal movement of livestock also remains an important strategy in the north central areas, but has been modified by the provision of water pipelines, illegal fencing and exclusion from pasture in Angola (Byers 1997).

3.3 Constraints to increased agricultural production and government attempts to overcome these constraints

The main constraints

Land degradation, or desertification, reduces the production potential of the land. Desertification is defined as “land degradation in arid, semi-arid and sub humid areas resulting from various factors including climatic variations and human activities”. It occurs when there is a decline in plant cover or when one type of vegetation is replaced with other, often less productive, species. Soils in arid, semi-arid and sub-humid areas are inherently vulnerable to desertification processes (soil erosion, bush encroachment, crust formation and salinisation) since they have low levels of biological activity, organic matter and aggregate stability (NNRC 2002).

The reduction of perennial plant cover that accompanies the desertification process in Namibia is usually attributed to overgrazing, land clearing for crop farming (Figure 3.4) or inappropriate cultivation techniques. Ultimately, however, desertification occurs as a result of the policy framework and incentives and regulations that encourage inappropriate management practices (NNRC 2002). These ultimate causes are summarised in Table 3.1. The issues of land tenure, land accessibility and integrated land use planning require particular attention.

Table 3.1. Causes of land degradation and unsustainable agricultural practices in Namibia. Source: NNRC 2002

Immediate causes	Ultimate causes
• Population growth • Poverty (poor subsistence farming communities have few alternatives but to "live off the land") • Increasing wealth (Box 4.1) **Climatic factors** • Namibia's natural climatic regime (periodic periods of low rainfall) • Cyclic variations in the climate **Land-use practices and inappropriate rangeland management** • Overgrazing • Deforestation[11] • Excess vegetation burning.[12] • Poorly managed irrigation programmes[13] • Over abstraction of ground water resulting in declining water tables **Other human impacts** • Soil pollution • Human induced global warming and climate change	• Lack of tenure over land and resources. • Inequitable access to land due to power and wealth .(Box 4.1) • Lack of policies supporting strategic cross-sectoral planning and implementation. • Failure to appreciate the total economic value of land and rangelands • Poorly designed agricultural and other land-use projects that show little understanding of the socio-economic conditions of the population and the dynamics and sustainability of the natural resource base. • Agricultural development projects and extension services that benefit the wealthy and their exploitative investments in agriculture and land • Inadequate alternatives for many people to invest their surplus earnings • Inappropriate and unsustainable drought relief and resettlement policies. • Inappropriate production incentives. For example, government subsidies for pesticides and scarce water resources, which encourage wastage and overuse.

[11] Wood is the primary energy source for at least 60% of Namibia's population. In Caprivi 96% of all households use wood for fuel and 80% of all dwellings are made from wood. Most deforestation results from land clearing for agriculture.

[12] If carefully managed, fire can be an appropriate tool for rangeland management. However, repeated fire at high temperatures result in large losses of organic matter and soil nutrients. The exposed soil is particularly susceptible to erosion.

[13] Irrigation projects in Namibia require enormous subsidies and are capable of accelerating land degradation through pollution (the need to use pesticides and fertilisers) and soil salination. Their high water demands are also cause for concern and there is no advantage to growing crops in Namibia that have high opportunity costs, are not arid adapted and are unable to carry the full price of their demand for water.

Actions to overcome constraints

Since independence several projects, programmes and policies have been put in place which are helping to improve agricultural production.

- Range management programmes such as the Sustainable Animal and Rangeland Development Programme (SARDEP) and the Northern Communal Areas Livestock Development Programme (NOLIDEP) have focused on improving livestock farming in communal areas. While focusing on participatory approaches and community mobilisation they have been hindered by the lack of institutional and tenure mechanisms for managing grazing lands.
- The National Programme to Combat Desertification (NAPCOD) has focused on research, information and community mobilisation to identify and implement key actions to prevent degradation of communal land.
- The National Drought Policy and Strategy aims to ensure that long-term sustainable drought mitigation replaces the short-term, inefficient drought relief efforts of the past. In addition this policy aims to give more responsibility for drought management to the farmers themselves.
- The potential for energy conservation and the use of environmentally friendly solar and wind energy is being investigated by the Ministry of Mines and Energy. Solar energy in particular has tremendous potential for reducing rates of deforestation and meeting energy demand in rural areas cost effectively.
- Since independence, the GRN has redirected development efforts towards farmers in the previously neglected communal areas. This has led to an increase in the number of cattle slaughtered and marketed north of the veterinary fence (NNRC 2002).
- The conservation of indigenous (*Sanga*) livestock, which display high tolerance to dry environments and have developed good resistance to tick-borne and other endemic diseases, has become a priority in the MAWRD's National Research Policy (NNRC 2002). Furthermore a number of NGO and government sponsored programmes have been developed in support of the policy to focus efforts on improving animal health in the communal-tenure areas. Included amongst these programmes are those focused on implementing sustainable rangeland management practices (e.g. SARDEP and NOLIDEP).
- Wood from the most prevalent bush encroachment species in Namibia is suitable for conversion into charcoal. Depending on whether markets can be found, charcoal production could provide a financially viable means of bush encroachment control in the future.
- In recent years there has been a move towards diversifying into high value cash crops for export. These include products like table grapes, melons and dates. When compared to maize and other cereals, these products

have high value adding for the resources (water, soil) required to grow them.

The main targets of the MAWRD during the NDP II period include increasing total agricultural output by 5% in real terms; increasing the contribution of agricultural output to 10% of GDP; reducing the dependency on conventional/traditional agriculture for livelihoods for 10% of farmers; reducing the value of agricultural imports by 5%, ensuring that 30% of maize farmers increase their production by 20% per ha; ensuring that 75% of farmers are aware of improved seeds and have access to them; ensuring that 30% of mahangu farmers increase their production by 20%; and that livestock off-take in communal areas is increased from 5% to 10% (NPC 2001).

3.4 Prospects for developing the agricultural sector

The data presented in this and the preceding chapter suggests that prospects for developing the agricultural sector are considerably limited. The dominant limiting factor is lack of water. Irrigation already makes up almost half the country's water consumption and this proportion is expected to grow. Yet irrigation is costly and not necessarily the most economic way of using the available water. In many areas where irrigation is possible, soil quality is medium to poor. Climatic factors severely limit the amount of land available for rain-fed crop growing and livestock farming is marginal in many parts of the country. A number of policy and technical interventions can be made to improve range management such as improved security of tenure for groups of people on communal land, improved livestock and the development of drought resistant crops. But ultimately the low and variable rainfall over the whole country places a limit on the extent to which production can be improved.

Nearly all recent reports on agriculture in Namibia emphasise the climatic constraints to agricultural improvement, the need to diversify the agricultural activities of rural farmers, the potential of high value crops and the potential of complementary activities such as tourism and utilisation of wildlife (e.g. NNRC 2002, NPC 2001, NRC 2000, Vigne 2000b).

Indeed a specific strategy of the government under National Development Plan 2 is: "to continue to encourage the development of non-traditional agricultural enterprises that are well-adapted to the environment and make better and optimum use of limited resources in order to promote diversification of the sector. Such efforts will particularly be intensified in the communal-tenure farming areas in order to foster the creation of alternative income earning, livelihood and employment opportunities in these areas. It is strongly believed that these efforts will enhance rural employment, food and livelihood security (NPC 2001: 205).

3.5 Donor involvement in the Agricultural Sector

DFID

- Supporting the Transition of Extension and Research Project. US$2 660 000. 2002-2006. The project aims to support the capacity of the MAWRD to deliver participatory research and extension services to small holder farmers in North Eastern Namibia.

EU

- The EU is currently preparing a large broad-based rural development project with the main objective of poverty alleviation through employment creation, sustainable use of natural resources, and economic support. Some land reform support activities could also be included. The project has a funding level of approx. US$50 million and will run from 2003-2006. The aim is to make grants available to government departments, NGOs, farmers' unions and other community-based organisations. The main focus will be on activities in communal areas. Proposals could cover most activities that impact poverty alleviation, ranging from CBNRM to the provision of infrastructure by government.
- Seed project – supporting increased production of millet seed. Ends this year. Funding level was approx. US$ 850 000 over three years
- REMP – Support for Research and Extension in the MAWRD. Mainly provision of training for extension officers. Ends 2004. Level of funding: Approx. US$7.5 million.
- National Agriculture Services Support Project. Funding approx. US$6 million. Starts 2003, ends 2006. Main aim is to support the development of trade in agriculture products and improve the economic performance of the agricultural sector.

FAO

- Support to developing a national food security strategy.

Finnish Government

- Support to combatting bush encroachment. US$320 000. 1999-2004.

CHAPTER 4
AN ASSESSMENT OF NAMIBIA'S FOOD SECURITY SITUATION

4.1 Current status

Namibia is considered to be food secure at the national level (MAWRD 2002), due to a well-developed commercial agricultural sector and an ability to import sufficient food to cover production deficits.

Although Namibian producers currently supply all of the nation's red meat requirements, the country has not been self sufficient in grain production since 1964. Crop output fluctuates considerably in response to the country's highly variable rainfall. In good rain years (roughly 4 years in ten). Namibia manages to produce only half of her grain consumption needs – a proportion that will continue to diminish as the country's population grows. The grain deficit is due to the generally very low agronomic potential in the country, with the exception of a few localities where remoteness from markets and the high cost of irrigation make investment in commercial grain production economically unsound (NNRC 2002).

At the local level many rural households are vulnerable to chronic or acute food insecurity due to highly variable, often low agricultural production, recurrent drought, low incomes and limited off-farm employment opportunities. Some 47% of Namibian households are considered to be poor, of which 13% are considered severely poor (MAWRD 2002). Food insecurity and malnourishment are increasing amongst the urban poor. Although 94% of rural households identify agriculture as their main activity it is has begun to make a declining contribution to communal farmers' household income. In most years, households are unable to produce enough grain for the family's requirements (NNRC 2002). Livelihoods in rural areas are heavily dependent upon remittances and this trend has increased over past years (MAWRD 2002).

One indicator of food insecurity is the level of under-nutrition, which remains widespread among children under the age of five. Nationally some 28% of children have been found to be stunted, 9% wasted and 26% underweight with 2 children out of every 3 suffering from mal- or under-nourishment (MAWRD 2002). From 1995 to 2000 overall mal- and under- nourishment was reduced by about 30% according to selected child health indicators. The child mortality rate has almost doubled over the same period, but the main causes of the increase are thought to link to the high incidence of HIV/AIDS, which might be aggravated by food insecurity, mal- and under-nutrition (MAWRD 2002).

Some progress has been made in reducing poverty in a number of regions of Namibia. Between 1997 and 2000 there was a decrease in the human poverty index in all the northern regions except Caprivi. In the south the index has

increased in all regions, including Khomas. At the same time, there is evidence that average incomes are increasing in all regions and regional disparities seem to be reduced (MAWRD 2002)[14].

4.2 HIV/AIDS and food security

HIV/AIDS continues to have an impact on food security. The non-health impacts of HIV/AIDS have been poorly researched in Namibia, but it has been recognised that these impacts contribute to decreased agricultural productivity and increased food insecurity and vulnerability. An estimated 10% of the adult population is HIV/AIDS positive, a number that increases to 23% among sexually active adults. The projected loss of to the agricultural labour force through HIV/AIDS for the period 1985-2020 may be as high as 26% (Anon. 2002). There are a number of impacts on household food security. As household members, particularly income earners, become affected by the disease, other household members have to spend a large proportion of their income and savings on care for the HIV/AIDS sufferers. Poorer households are disproportionately affected by the disease. A significant factor is clustering of the disease in households and communities. It often affects several members of one household. Clustering results in an increase of orphans and child headed households. Many orphans are absorbed by extended families, but this depends upon income and the ability to cope with additions to the household. Apart from loss of income from wage earners, who can no longer work, sick workers returning home place additional burden on the family. Loss of labour means households are able to cultivate reduced amounts of land and keep fewer cattle. Mourning periods in northern Namibia can last up to 4 to 8 days during which agricultural activities are halted. The sale of livestock to raise funds for hospital fees and treatment means loss of assets. The sale of crops to raise money by the poorest families who do not own livestock is likely to contribute to food insecurity.

Some research also indicates a strong links between negative impacts of HIV/AIDS and issues relating to NRM and conservation including poor land use, increased pests and plant diseases, livestock decline, loss of indigenous knowledge, reduction in labour for natural resource conservation and environmental information management (Anon. 2002).

Nearly all of these impacts are likely to be made worse by severe drought, when food is particularly scarce. The drought coping strategies of households will be limited, and household members affected by the disease will not have additional reserves of energy to cope with diminished food supplies.

[14] The Human Poverty Index is measured according to the proportion of the population being deprived of certain element of human life considered pre-requisites for human development. Three dimensions are considered: longevity, knowledge and a decent standard of living, which is measured by child nutrition, access to safe water and good health. (UNDP2000).

Given current trends in poverty reduction in some regions and the general increase in average incomes throughout Namibia, the overall food security situation over the next three years is likely to remain stable. In some regions it could improve. However, regional disparities remain and the situation in the southern regions could continue to be problematic. Further, the impacts of drought could lead to increased hardship in some areas. Currently, the country is going through a period of lower rainfall that under the National Drought Policy would be accepted as "normal drought". Nevertheless, the impacts could be considerable for the poorer households if the dry period continues for a number of years consecutively.

4.3 Namibia's food security strategy

Namibia's approach to dealing with food security is based on seven commitments made by participating governments at the World Food Summit in 1996. These commitments are:

I. We will ensure an enabling political, social and economic environment designed to create the best conditions for the eradication of poverty and for durable peace, based on full participation of women and men, which is most conducive to achieving sustainable food security.
II. We will implement policies aimed at eradicating poverty and inequality and improving physical and economic access by all, at times, to sufficient, nutritionally adequate and safe food and its effective utilization.
III. We will pursue participatory food, agriculture, fisheries, forestry and rural development policies and practices in high and low potential areas, which are essential to adequate and reliable food supplies at the household, national, regional and global levels, and combat pests, drought and desertification, considering the multi-functional character of agriculture
IV. We will strive to ensure that food, agricultural trade and overall trade policies are conducive to fostering food security for all through a fair and market-oriented world trade system.
V. We will endeavour to prevent and be prepared for natural disasters and man-made emergencies and to meet transitory and emergency food requirements in ways that encourage recovery, rehabilitation, development and a capacity to satisfy future needs.
VI. We will promote optimal allocation and use of public and private investments to foster human resources, sustainable food, agriculture, fisheries and forestry systems, and rural development, in high and low potential areas.
VII. We will implement, monitor and follow-up this Plan of Action at all levels in cooperation with the international community.

These commitments are considerably cross-cutting in nature and their implementation is dependent on the policies and activities of various line

ministries. Namibia does not have a specific food security policy or strategy, but the elements of such policy and strategy are contained in a number of other national policies and strategies. These include the country's Poverty Reduction Strategy, the National Poverty Reduction Action Programme (2001-2005), National Development Plan II and the National Drought Policy and Strategy.

The National Drought Policy draws a clear distinction between food security interventions to meet needs resulting from drought and poverty-related food security interventions. The policy recognises that low and variable rainfall is normal for Namibia as are periodic droughts. In this regard it suggests that drought relief should only be provided to farmers when a disaster drought has been declared. A disaster drought is one where conditions are so intense and protracted that they are considered beyond the bounds of what may reasonably be countered by normal risk management practices. A number of technical criteria are established by the policy for assessing a disaster drought and a process has been developed for assessment and declaration of such a drought (GRN 1998). Drought can affect the economy and food security in different ways. At the national level, a drought induced shock may result in a fall in GDP and a weakening of the balance of payments. This will have knock-on effects throughout economy when agricultural production and income falls.

At household level, a fall in agricultural production lowers availability of food and household incomes from crop and livestock sales and leads to a decline in employment opportunities in the agricultural sector. This reduces incomes especially for the poorer section of the population. A decline in food production leads to an increase in food prices. Households may be forced to sell assets such as ploughs or livestock. Water supplies can be affected if ground water levels drop.

The eight objectives of the drought policy are to (GRN 1997: 8):

i. Ensure that household food security is not threatened by drought
ii. Encourage and support farmers to adopt self-reliant approaches to drought-risk
iii. Preserve adequate reproductive capacity in livestock herds in affected areas during drought periods
iv. Ensure the continuous supply of potable water to communities, and particularly to their livestock, their schools and their clinics
v. Minimise the degradation of the natural resource base during droughts
vi. Enable rural inhabitants and the agriculture sector to recover quickly following drought
vii. Finance drought relief programmes efficiently and effectively by establishing an independent and permanent National Drought Fund.

Among the elements of Namibia's strategy for reducing long term vulnerability to drought are the following:

- crop diversification as part of on-farm risk management
- development of sustainable rangeland management practices including securing exclusive grazing rights, strategic water development
- Diversifying income sources: "Government will look into ways that it can support farmers to move into new activities like wildlife management, tourism, charcoal production and small secondary industries. Such support might take the form of soft loans and specific investment incentives" (GRN 1997: 25).

The policy also emphasises the need for creating an enabling environment through the decentralisation of decision making and the use of civil society institutions. The policy also notes the need to promote the establishment of land user rights to give land-users control over their natural resources and enable the development of strategies to enable them better to withstand drought. "In particular, the role of conservancies needs to be investigated further in this regard (GRN 1997: 26).

Indeed, the Namibian country report to the 2002 World Food Summit emphasises the need for environmental and sustainable development policies to take a stronger food security focus. It suggests that Community-based Natural Resource Management, agriculture and off-farm diversification approaches should be tested and need to be multiplied (MAWRD 2002). The report also sets as an objective for improving food security: "To combat environmental threats to food security, in particular drought and desertification, pests, erosion of biological diversity and degradation of land and aquatic-based natural resources, restore and rehabilitate the natural resources base, including water and watersheds in depleted and overexploited areas to achieve greater production" (MAWRD 2002: 31).

The role of tourism, community-based tourism and conservancies are also recognised in the government's Poverty Reduction Strategy for Namibia. Action 25 of the National Poverty Reduction Action Programme (2001-2005) reads as follows: "The MET shall continue its efforts to establish conservancies. Through this programme, some 25 new conservancies will be established by 2005 (i.e. five each year) with 175 000 people benefitting individually and collectively. The MET, along with non-government stakeholders, will assist in the registration of conservancies, as well as with then provision of training in game and conservancy management" (GRN 2002b: 46).

According to Action 26: "The MET will assist rural and disadvantaged communities to establish community-based tourism projects, such as businesses and joint ventures. This will include amongst other things, an emphasis on training and capacity building so that participating communities are better able to manage these projects. These projects will be evaluated in terms of the number of projects that are established, the new markets in which community-based enterprises operate, the identification and response to training needs, their

location in areas where poverty is present and the number of people who benefit through them. The establishment of joint ventures with established private firms (such as tour operators) will also be a significant outcome of these efforts" (GRN 2002b: 46).

It is clear from the above that development interventions that focus on job creation, income generation, diversification of rural production systems, and environmental sustainability can play a significant role in poverty reduction and the promotion of food security. It is also clear that the GRN recognises the positive role that natural resource-based activities can play in this regard. Most importantly, these activities are likely to play a positive role in contributing to long-term prevention of drought vulnerability and food insecurity. Interventions of this nature will contribute more to long-term food security and have more lasting impact than short-term interventions aimed at ameliorating temporary hardship through periodic drought relief. This approach would be fully in line with the national drought policy which recognises that variable and low rainfall is normal and farmers need to view drought as one of risks of the business. Farming practices must be designed to take into the low and variable rainfall. The policy aims to shift responsibility for managing drought risk from the government to the farmer. It aims to move away from regular financial assistance to large numbers of farmers, and implement strategies that reduce vulnerability to drought.

4.4 Links between Food Security and Land Tenure issues

The Namibian country report to the 2002 World Food Summit recognises a link between land reform and food security. It suggests the need to "look at innovative thinking concerning communal lands and common property resources…" (MAWRD 2002). If land is not used sustainably, it will ultimately lose its productivity and this will contribute to food insecurity. Land tenure and land reform policies need to look at creating the appropriate incentives for rural residents to manage their land sustainably. The current land tenure situation in Namibia does not necessarily encourage sustainable land use. There is often little control over the use of grazing lands for example, because local communities cannot exclude outsiders from using their land. There is a similar situation with regard to many forest timber and non-timber forest products in northern regions. This reduces the incentive for communities to invest in long-term management of land and resources and reduces their ability to optimise the value that they can extract from natural resource harvesting, use and sale. With regard to land reform, the provision of suitable land for the landless, linked to measures that encourage sustainable productive use of the resettled land, can contribute to increased food security.

4.5 Current actions to provide food security to drought affected areas

Drought relief in Namibia is the responsibility of the Emergency Management Unit (EMU) that falls under the Office of the Prime Minister. A national structure has been developed that deals with the planning and implementation of drought relief. At the local level are village emergency management units, which fall under constituency level emergency management units, which in turn report to such units at the regional level. Each Regional Emergency Management Unit (REMU) reports to the national EMU which acts as the secretariat to the National Emergency Management Committee. This committee consists of the Permanent Secretaries of key line ministries and meets weekly. The committee is linked to the National Early Warning Unit which in turn is linked to the regional SADC early warning unit. The committee advises cabinet on policy and implementation issues. The committee and the national EMU deal with a broad range of emergencies of which drought is only one. An Emergency Management Trust Fund has been established to fund the activities necessary to deal with national emergencies.

In terms of food security and drought relief the national EMU is currently responsible for four main programmes:

I. Country-wide drought relief

Using a government budget of N$140 million, the EMU is carrying out a programme of drought relief following the declaration of a food and water crisis by the Cabinet. The government chose to use its funds (some from the Trust Fund and some from a special appropriation) to deal with the drought rather than seek donor assistance. A crop assessment was conducted in the northern regions at the start of 2002 and it was realised then that a serious shortage of food was likely. The drought aid programme targets the elderly, pregnant mothers, lactating mothers, children under five and the disabled. The village and constituency level EMUs are used to identify and register people in these categories. The food provided consists of white maize meal, dried fish and vegetable oil. In the past the government bought in food, transported it to Windhoek and transported it to the regions. This sometimes meant supplies were transported from the regions where the most affected people lived and had to be transported back again for distribution. Now, the government buys from suppliers in the regions and then the food aid is distributed directly on a regional basis. The distribution is being carried out by government officials and government vehicles seconded by line ministries rather than by private companies as in the past. According to government officials in charge of the operation the programme is working well, although some regions lack the necessary transport. Sometimes officials from line ministries cannot be made available for drought relief work because of their existing responsibilities. The national EMU assists those regions that have transport and human resource problems by sending trucks and

personnel from Windhoek to assist with food aid distribution. In the past, USAID has assisted the GRN with support for the development of the national drought policy and training for the national EMU. This was welcomed by the officials in charge of the unit who said that transport and training in dealing with other potential emergencies (e.g. veld fires) were areas in which they still required assistance. Another potential area is the build up of the Trust Fund (although it is not clear if this would be supported politically because of the current policy of funding the drought aid from government's own funds). The officials were aware of conservancies and recognised that income to communities from wildlife and tourism through conservancies could assist in strengthening food security in times of drought.

II. Food for work/cash for work

This is an ongoing programme that aims not only to deal with a specific crisis, but also to support poverty alleviation and local development. The government pays for work on projects identified by communities themselves.

III. School feeding

The government is providing breakfast and lunch to school children in areas particularly affected by the drought.

IV. Food aid for the San people

The government is providing ongoing food aid specifically to San communities. It is thought they need special attention because many San people are not involved in mainstream productive activities such as crop growing or livestock ownership.

CHAPTER 5
WILDLIFE, TOURISM, LAND AND FOOD SECURITY

5.1 The strategic importance of Tourism and Wildlife

Tourism is currently the world's fastest growing industry. Since the 1980s there has been a noticeable shift in tourist destinations from developed to undeveloped countries and increased interest in visiting natural settings, undisturbed areas and unusual destinations (NNRC 2002).

A survey conducted in 1997 showed that almost all tourists visiting the country expect a wildlife-centred experience – either through game viewing, bird watching, hiking, sport fishing or trophy hunting. Namibia's biggest attractions are its wildlife and sparsely populated spectacular scenery and wide-open spaces.

Tourism (including safari hunting) has considerable potential to contribute to overall economic development as well as poverty reduction and household food security. Namibia's tourism industry is capable of:

- Contributing to poverty alleviation through direct and indirect employment;
- Contributing additional income to local communities through joint venture photographic and hunting safari operations;
- Stimulating local enterprises based on tourism (traditional villages, camp sites, etc.) or on providing services (tyre repair, cool drink sales, etc.);
- Improving the earning ability of rural women by stimulating trade in basketry, pottery and other traditional crafts;
- Providing employment close to home in rural areas so that wage earners can still engage in other household livelihood activities.

Over much of Namibia, wildlife and wildlife-based tourism are particularly appropriate forms of land-use, and their potential to contribute to local economic development increases in the most arid areas of the country. On freehold land, many farmers have begun to combine extensive livestock ranching with photographic tourism and/or trophy hunting. Some farms have been converted entirely to wildlife. However, there are indications that larger enterprises or combinations of enterprises with multiple investors can provide efficiencies of scale.

This is illustrated by the following case study from southern Namibia in an area towards the dryer side of the 50-100mm mean annual rainfall belt in the Nama Karoo desert biome. Despite the aridity of the area, the land was surveyed and allocated in the past to white freehold farmers and small stock farming is the main economic activity.

The Gondwana Canyon Park (GCP) was established on nine former small stock farms on freehold land by a small group of Namibian investors, who began buying up abandoned sheep farms in 1996. Parts of this private conservation area are adjacent to the state-run Fish River Canyon Park (FRCP) and to some state-owned farms administered as part of the FRCP. The GCP covers just over 100 000 ha.

It is run as a conservation area with the objectives of rehabilitating indigenous fauna and flora as well as being run as a business. There are two "profit centres", a 65-bed lodge and a 18-bed "roadhouse" with a small camping site catering mostly for passing trade on the main route north to Windhoek (Namibia's capital). These profit centres pay the park a bed-night levy of 7% for land management and conservation activities. Tourism attractions are based on the proximity to the FRCP, local history and culture and the wilderness and wildlife experience offered by the GCP. More than 90% of tourists are drawn from overseas.

Table 5.1 provides a comparison of economic performance of the GCP under its former land use of small stock farming and under the current land use of wildlife and tourism. Table 5.2 provides a comparison of conditions on the land of the GCP compared to conditions under its former land use.

The data shows the extent to which the land itself, as well as profits, can be improved by converting marginal lands from livestock production to tourism and wildlife. The GCP model is, however, an unusual case as it relies on high investment and the spread of the investment risk among a number of individuals. It also has the advantage of being close to a major tourism attraction, has well-developed access roads and can capitalise on the lack of suitable accommodation in the FRCP. Few freehold farms enjoy these advantages. The most common model for wildlife diversification at present is for individual farmers to add some trophy hunting and small-scale tourism to their existing livestock activities. This at least provides a buffer during drought.

TABLE 5.1: Comparison of economic performance on the land of the Gondwana Canon Park under two different land-use practices (at 2001 US$ values). Source: C. J. Brown and J. I. Barnes, unpublished data.

	COMMERCIAL AGRICULTURE Small Stock	GONDWANA CANYON PARK Tourism Wildlife
Annual Turnover		
• **Good rainfall**	US$170 000	US$1 430 000
• **Poor rainfall**	US$40 000 – 90 000 (50%+ of years)	US$1 430 000
Annual Profit		
• **Good rainfall**	US$45 000	US$185 970
• **Poor Rainfall**	US$ 6 000	US$185 970
Employment (No. of people)	33	144
Salaries/wages	US$33 000	US$165 200

TABLE 5.2: Comparison of conditions on the land of the Gondwana Canon Park (some 100 000 ha) under two different land-use practices: (a) previous freehold commercial agriculture – essentially small stock farming, and (b) current private park management for tourism and wildlife. Source: C. J. Brown, unpublished data.

	COMMERCIAL AGRICULTURE Small Stock	GONDWANA CANYON PARK Tourism Wildlife
Rangeland	Overgrazed degraded, soil erosion, loss of grassy component – bush invaders, loss of perennials	Recovery underway
Game	Hunted near to extinction – e.g. oryx, springbok, kudu for meat, zebra for skins	Recovery underway – springbok 800+, kudu 250+, zebra 80+, oryx 80+; plans for re-introductions
Predators	Ruthlessly exterminated	Recovering: leopard 3+ breeding females, jackals now seen regularly, caracal seen fairly often
Scavengers	Poisoned to extinction	Recovering – vultures, aardwolf seen regularly

However, the Gondwana experience is somewhat atypical as it is particularly well-placed to attract tourists. It is close to a major national tourist attraction, the Fish River Canyon Park and is just off the main road to South Africa. Further it has attracted a high degree of investment from a number of individual investors. It does, however, provide a good example of the potential economic and ecological improvements that economic tourism and wildlife can bring on marginal land.

Linked to approaches that also promote sustainable natural resource management by local communities, tourism can help to provide long-term economic security in communal areas. Recent results from the Namibian CBNRM programme, which is partially funded by USAID, provide an indication of the potential.

The 2002 year saw exceptional growth in the amount of benefits and income generated by the National CBNRM Programme. The benefits generated in 2002 amounted to N$11,129,952 (US$1,112,995) versus N$6,124,195 in 2001. This is an increase of 82% for the year. This marks the third time in the last four years that programmatic benefits have almost doubled in a one year period (LIFE 2002).

Of significance is the diversity of benefits being generated by Namibia CBNRM enterprises, with 2002 benefits and income being broken down as follows (LIFE 2002):

• Community-Based Tourism Enterprises/Campsites:	N$3,105,016	28%
• Trophy Hunting & Meat	N$2,513,676	22%
• Joint Venture Tourism:	N$2,179,874	20%
• Thatching Grass Sales:	N$1,077,500	10%
• Game Donations (value)	N$1,026,600	9%
• Craft Sales:	N$561,221	5%
• Own-Use Meat (value):	N$402,014	4%
• Interest Earned	N$156,500	1%
• Live Sale of Game:	N$132,300	1%

Cash income to conservancies also experienced a dramatic increase, with direct cash receipts to conservancies amounting to N$3,221,578 during 2002, versus N$1,433,342 and N$484,886 in 2001 and 2000, respectively. During the year, a total of 11 conservancies received cash revenues with cash flows ranging from a low of N$25,682 in Purros Conservancy to N$920,500 in Nyae Nyae Conservancy, with the average income for conservancy receiving cash revenues amounting to N$292,871 per conservancy.

A recent estimate of the total revenues generated by CBNRM-supported enterprises (i.e., joint venture lodges, trophy hunting concessions, thatching grass industry, CBTEs, crafts, and live game sales) shows these enterprises conservatively produced an annual turnover of N$37,532,152 over the past year. These enterprises have resulted in the employment (through self-generated funds) of 374 full-time and 3,136 part-time employees (LIFE 2002).

The conservancies with high wildlife numbers and good scenic attractions have the highest potential to generate income. Torra conservancy in Kunene Region, on the margins of the Namib Desert in north-west Namibia, is a good example of this potential. In some ways it is similar to the Gondwana example as it has very specific attractions (wild desert landscapes, wilderness areas, black rhino, elephant and lion) and has had a high level of investment (in the form of donor assistance).

Torra has a small number of residents, only 120 households, within an area of around 352 200 ha. In late 2002 the conservancy distributed a dividend to members of N$$630 (US$63), the first such household distribution the conservancy has made (Baker 2003). It is the first conservancy to become almost fully responsible for all its own costs (start up costs for most communal area conservancies are provided by NGOs and international donors). It has a number of income generating activities including a successful joint venture agreement with a reputable southern African photographic tourism company, to operate an upmarket tourism lodge.

Figures from LIFE (2002) show that the rental and percentage of turnover from the lodge was N$303 000 (US$30 300) in 2002; income from trophy hunting was N$180 000 (US$18 000); and the live sale of game generated N$132 300 (US$13 230). This gives a total income to the conservancy of N$615 000 (US$61 500). Wages from the lodge were worth N$250 000 (US$25 000) and wages from temporary employment by the safari hunter were worth N$6 600 (US$660). For the same period, the value of meat distributed was just more than N$53 830 (US$5 383), and the value of game hunted for own use was N$41 878 (US$4 187).

A socio-economic survey of 38 households in Torra in 1999 found that 53% were earning an income from activities related to wildlife (Jones 1999b). The main sources of income were working in a tourism lodge (35 %), wages to community game guards (26%) and crafts (13%). The average monthly income from wildlife and tourism related activities was N$365 (US$36).

The size of the conservancy (352 200 ha) means that it could certainly develop two more lodges without causing environmental damage or spoiling the wilderness experience for tourists. This would more than double the existing income, making considerably more money available for the 120 households once operating costs of around US$18 000 have been covered. The amounts earned

by the conservancy and the household dividend appear small in US$ terms. Their significance becomes clear when one considers that the average income of subsistence farming households is estimated at US$700 a year and for the poorest 20% of households around US$200 a year.

It is estimated that about 65 000 tourists visited communal areas in Namibia in 2001 out of a total of 260 000 tourists nationally. Total gross income generated by tourism in communal areas in 2001 was estimated at N$113 500 000 of which more than N$10 million is earned by local communities[15] (Roe *et al*. 2003).

Some scenarios for assessing the potential of CBNRM to 2030 have been developed (NNRC 2002) and suggest that major gains can be made by expanding the present conservancy legislation to allow for rights to be given to communities over other common pool resources. It is estimated for example that if the legislative situation remained the same, by 2030 there would be 65 conservancies (from the current base of 15), but with the legislative change there could be up to 160. Numbers of direct beneficiaries would rise from 65 000 to 250 000 with no legislative change, but could reach 900 000 by 2030 if change took place. Even without legislative change, if current growth trends continue, then employment and cash benefits to communities from tourism are expected to rise from the current level to N$795 million by the year 2030. See Annexe 3 for a full explanation of the different scenarios to 2030.

Although the projected growth in income from tourism is conservative there are also some anticipated threats to growth. These include:

- **Political instability/military conflict.** The insecurity created by attempts at secession by a group of Caprivians and the war on the Angolan border led to the almost total decline in tourism in the north east for nearly four years. High crime levels can also deter tourists.
- **Poor planning and mass tourism**. Given that a large part of the Namibian tourism product is wilderness and an unspoilt environment, tourism planning has to ensure that these characteristics are maintained. Signs of serious impacts from tourism have been noted in some areas of Namibia. The lack of adequate infrastructure and the absence of a clear vision, cohesive policy and strategic planning have been largely to blame (NNRC 2002).
- **Preventing "leakage" of tourism-generated foreign exchange** which benefits foreign-owned service providers, suppliers, tour operators, hotels and airlines.

[15] These are the latest figures available and are considerably higher than the estimates shown elsewhere such as in the 2030 vision for communal areas conservancies in Annexe 3.

5.2 The Strategic Importance of Veld products

Over the past few years in Namibia considerable research has gone into the potential for harvesting and marketing various natural products from plants and trees. The results show that there is potential for such products to contribute to household incomes. Much depends however on the possibilities of expanding existing markets and whether markets will be large enough to make local processing viable. For example, it is conservatively estimated that there are at least 2 000 tons of marula kernels available annually in the northern communal areas. However, CRIAA, which is promoting marula marketing, could barely absorb the 50 tons purchased last season (du Plessis, *pers. comm*. 2003). It is also difficult to say whether, or at what price, people would allocate enough labour and time to marula decortication to make available the whole production potential. Last year the CRIAA marula oil project paid out N$850 000 to primary producers in 3 000 households. This represents an average earning per household of N$283 – the equivalent of one month's income for the poorest 50% of households in Namibia. As this was only the second year of full commercial production, CRIAA believes there is great scope to increase the market (du Plessis *pers. comm.* 2003).

Although current household income from marula harvesting is not large, the timing of the harvest at the beginning of the school year makes this income extremely important for the payment of school fees, clothing, and the purchase of food and household goods. Women are the primary producers of marula products so commercialisation provides benefits to members of the community badly in need of cash income for themselves and their children (Wynberg *et al*. 2002). However, commercialisation of resources such as marula fruits needs to be approached with caution. Unintended results can include reduced reciprocity within the community because of a decrease in exchange of marula products, and a decline in respect for traditional natural resource management systems. There is also the risk that commercialisation can lead to increased privatisation of the resource and the exclusion of certain groups from benefits. In northern Namibia for example, one quarter of households do not have direct access to Marula fruits and related products, and rely on the goodwill of their friends and neighbours to share the resource (Wynberg *et al.* 2002). The sustainability of the resource also needs consideration and increased commercialisation might require the maintenance and enhancement of the resource base through planting, attention to active management and domestication.

CRIAA has also developed a market for Kalahari melon seed for the manufacture of melon seed oil. This is a new market and the current harvest of around 150 tons of seed does not reflect the potential for growth. Current income to primary producers is worth N$ 300 000, but it is estimated the market could take up to 3 500 tons of seed a year bringing an additional N$7 million additional cash income to Namibian communal area farmers.

Wild melons are particularly useful as a crop as they can grow almost anywhere in Namibia. They can provide a drought-resilient alternative or inter-crop, contributing to agricultural diversification and alleviating pressure on other (especially wild-gathered or communal resources).

Exports of Devil's Claw have been estimated at between N$10-N$15 million a year. Average household income from sale of devil's claw can be around N$250-300 a year (Cole, *pers. comm.*2003).

5.3 Wildlife, tourism and food security

"Wildlife" is often thought of in terms of large mammals that either serve as tourist attractions or are valuable for sale or hunting. However, a broader definition of wildlife includes all wild animals, insects and plants. Within this broader definition, plants and trees from which various commercial products can be derived are also included as wildlife.

The potential for wildlife to contribute to food security is considerable and as noted earlier, have been incorporated into national poverty reduction and food security policies and strategies. The previous sections of this report have identified the ways in which various wild animals and plants can be exploited commercially. Examples of household income already derived from these animals and plants have been given. It has also been emphasised that there is considerable potential for growth in all the activities considered, whether tourism, safari hunting, live sale of game, or exploitation of veld products or other forest products.

Tourism, hunting and other forms of game utilisation can provide three forms of income to local communities. One form is direct income to households through employment, a second is income through the sale of products or services to tourists, tourist lodges and tour operators. The third is collective income that accrues to communities through their joint ventures with the private sector. If applied strategically, this income can be used for household income (e.g. in times of drought), for community projects, for some form of re-investment in business opportunities or in support of local business development (e.g. credit to local entrepreneurs).

Tourism, and other forms of game use, are important aspects of the diversification of rural economies. In the most arid areas of the country, tourism, wildlife and extensive livestock farming are the most viable forms of land use. In areas of higher rainfall, tourism and game utilisation are likely to play more of a supplementary role. In the northern and northeastern areas, the commercial harvesting and sale of veld products can also play an important role in increasing

cash income. The possibility of job creation will be more of a reality if markets become large enough to enable local processing to be developed.

The importance of these resources for poverty alleviation and household food security lies should not be measured in terms of their ability to generate large amounts of income that can sustain households through the year. They need rather to be judged according to their ability to add to the existing mix of livelihood strategies that households already use, which increases the resilience of these households to drought and economic fluctuations. The additional cash that can be generated by wildlife in its different forms can be used to buy food and other essential requirements when food production is affected by drought.

Perhaps the best way that wildlife can be promoted as part of a food security strategy is to help ensure that the potential that has been identified becomes a reality. In the tourism and big game sectors, this would mean assisting to remove the barriers to growth.

5.4 Land issues and CBNRM

The government's approach to Land Reform

In 1991 the government launched a national consultative process on land that culminated in a national land conference. One of the main results of the conference was a decision that there would be no return of "ancestral" land. On the one hand there was a desire not to open the country to a series of potentially acrimonious land claims. It was also recognised that it might be difficult to determine who has a prior claim (e.g. the San or groups that had lost land due to conquest by others. It is significant that the return of ancestral land would have mostly benefited the Herero people who at independence had mostly supported the opposition, while the Owambo people who mostly supported SWAPO, would gain relatively little.

Following the Land Reform Conference, government set up a Technical Committee on Commercial Farmland and a Cabinet Committee on Land Policy. The government adopted the approach of establishing a number of policy principles to guide the development of legislation, rather than first developing a formal land policy. The overall aims of government were to acquire white-owned land for redistribution to blacks while also trying to promote an "affirmative action or welfare scheme, designed to uplift and improve the living conditions of poor people in Namibia" (Harring and Odendaal 2002:31). At the same time, government agreed to retain the dual tenure system of state-owned communal land and privately-owned freehold land.

The result was the Agricultural (Commercial) Land Reform Act of 1995, which provides for the purchase and redistribution of freehold farms, based on a willing

seller, willing buyer principle. In other words, the government has not adopted the approach of compulsory acquisition of land followed by Zimbabwe in recent years. The government has stuck firmly to this principle, even though individuals, including the President, have expressed dissatisfaction that the approach is expensive and fails to allow the acquisition of large blocks of land for more efficient resettlement.

Other important principles that government developed in its approach to land reform include the following:

- Individuals on communal land who wish to farm commercially should be assisted to buy freehold land and withdraw their livestock from communal land
- Unused land in communal areas should be opened up
- Prohibition of ownership of land that is not used economically
- Limiting access to commercial farmland by non-Nambian citizens
- Limiting excessive land ownership

Constraints to implementation

Both in its conceptualisation and in its implementation, the government's approach to land reform has been problematic. As Harring and Odendaal (2002:36) point out: "A policy aimed primarily at poverty alleviation or affirmative action or the redress of historical inequities, is not necessarily the same policy that might be aimed at efficient distribution of productive commercial agricultural land. Concerns about food security add another dimension, as Namibia imports most of basic foodstuffs, primarily from South Africa." If the aim is a simple redistribution of land from black to white within a framework that maintains the notion of a productive freehold sector, and then government could devise policies that promote the acquisition of freehold land by black farmers. At the same time it could revise its agricultural policies in order to promote the more efficient use of freehold land.

However, the drive to alleviate poverty and find land for the landless has had important implications for the way in which the policy approach has been implemented. One of the main vehicles for redistributing land has been the acquisition of freehold land by the Ministry of Lands, Resettlement and Rehabilitation (MLRR) under its National Resettlement Policy. The policy targets:

a) people who have neither land, income nor livestock,
b) people who have neither land nor income, but few livestock
c) People who have no land but have income or are livestock owners, but need land to be resettled on with their families to and to graze their livestock

These definitions of target groups for receiving land are sufficiently vague to include anyone on communal land, if not having land means not owning land. Further it could apply to people in urban squatter camps and those who rent rooms in towns. There appears to be an underlying implication that everyone should have a piece of rural land on which they can run livestock, regardless of whatever other economic activity they might be involved in. However, the MLRR has prioritised those who it sees as beneficiaries of the resettlement:

i. The San Community
ii. Ex-combatants in the independence war
iii. Displaced, destitute and landless Namibians
iv. People with disabilities
v. People from overcrowded and uninhabitable[16] communal areas

One of the main problems in implementing the resettlement of people on freehold land has been the extremely slow pace at which such land has been acquired. Since 1990, the government has purchased 91 farms through willing seller, willing buyer purchase and another six were donated by a Namibian businessman. The total cost of purchase has been N$72 076 474 (US$7 207 647). About 27 000 people have been resettled at a land cost per person of N$2 611 (US$261) with an average of abut 270 people settled on each farm. According to the government, during the first 20 years of independence 280 farms will have been acquired for resettlement, about 5% of the freehold farms in Namibia (Harring and Odendaal 2002).

The land acquisition programme appears to proceed without a specific plan or criteria for deciding which farms to acquire. Harring and Odendaal (2002) show how the government has rejected six out of seven farms on the market. It would make sense to either target productive land rather than degraded land or to aim to acquire blocks of land that can provide viable resettlement units or that are adjacent to communal land.

The study by Harring and Odendaal identifies the following additional problems:

I. Few resettlement “projects’ are likely to be sustainable unless they have been supported for up to 15 years because of the lack of skills of participants and in many cases a lack of infrastructure
II. The environmental viability of resettlement projects has not been investigated, nor has the capability of the land been matched to appropriate land uses. In essence, the ecological aspect of land reform has been ignored.
III. Most resettlement farms are not large enough to sustain the number of people settled on them. Any hope of successful resource management depends upon cooperation between the residents, but joint resource management institutions have not been promoted.

[16] It is not at all clear what is meant in this context by “uninhabitable”.

IV. Participants in resettlement schemes are unclear about their land tenure despite the statement by government that they are entitled to 99-year leases. It is not clear whether the leases are renewable, inheritable or whether they can be sold or traded. This uncertainty (along with the small size of land) makes it unlikely that the land can be used as collateral to raise a bank loan.
V. Governance issues on resettlement farms have been ignored. Decision-making is carried out by government "project" managers and people are often thrown together from different parts of the country so have no joint "traditional" leadership.
VI. There is no programme of training or building the capacity of the people settled, and the project managers have no qualifications to provide training or capacity building.
VII. Resettlement programmes are managed by the MLRR largely in isolation from other ministries that could provide technical support (e.g. the Ministry of Environment and Tourism, and the Ministry of Agriculture, Water and Rural Development).
VIII. Many resettlement farms are far from major towns, creating a sense of isolation among residents, and cutting them off from markets. Many are far from schools and clinics.
IX. There is inadequate provision of housing, energy sources and water for resettled people.

In summary, the resettlement of black Namibians on freehold farms acquired by the government is the main implementation component of the government's land reform policy. Resettlement means placing poor unskilled people on pieces of land too small or environmentally unsuited for more than a subsistence living. They are usually placed in areas with little or no infrastructure, far from schools, clinics and markets. No attention is given to developing joint decision-making to govern the affairs of the residents or to manage their land and resources. No attention is given to training and capacity building. In these circumstances, perhaps it is fortunate that the pace of resettlement is in fact so slow.

The potential contribution of CBNRM

The many problems and shortcomings of the government's resettlement programme as part of land reform have been discussed above. However, in many ways the resettlement schemes have considerable *potential* for promoting sustainable use of the land and natural resources (Jones 2002).

The number of people (the decision-making unit) on these schemes is relatively small. They have defined, accepted, and enforceable rights to the land through the leasehold provided by the resettlement scheme, and have opportunities to gain rights over other resources through the sectoral legislation described above. There are clear boundaries for the land and resources and those that have a

right to use the land and resources are clearly defined. Further, the environmental conditions dictate that cooperation between residents of a resettlement scheme would be crucial for ensuring sustainable use of the natural resources. Such cooperation would be required in the management of grazing land, water and any other resources such as wildlife, timber products and non-timber forestry products. It must be recognised, however, that cooperation could be difficult to foster because the people on resettlement schemes have no prior history of working together and will come from different ethnic backgrounds.

Despite this caveat about cooperation, in many respects, the conditions would appear to be conducive for the development of a common property regime over the land and resources on the resettlement schemes. However, as seen in the previous section, little attention has been given to developing the governance structures necessary for such a regime to be established. Little attention has been given to the capacity requirements of residents to manage the land and its resources.

The potential for many of the existing resettlement schemes is illustrated by one of the newest conservancies to be registered in Namibia. The Oskop conservancy was the first to be registered in southern Namibia. It is quite different to most other conservancies in Namibia. It is small, covering an area of 9,537 hectares and was a former freehold farm bought to consolidate a communal area under South Africa's pre-independence homeland policy. The conservancy membership is composed of 14 households with an estimated population of about 120 (including children). The conservancy lacks significant wildlife resources and other tourist attractions such as rivers, spectacular mountains, and forests that can be found in the larger conservancies in the northern regions. In fact residents are not particularly keen on encouraging high wildlife numbers or even a variety of different species. Livestock farming is the mainstay of their livelihoods and wildlife is only seen as an additional source of income for the community. It appears as if gaining greater security over the land was a more important reason for forming the conservancy than a desire to conserve wildlife.

In order to be registered as a conservancy, Oskop had to form a management committee. Since the local water point committee is the only other community structure in the area, the members decided to merge the conservancy and water point committees into one management structure. All issues related to water management are therefore also carried out by the conservancy management committee. Apart from managing conservancy affairs, the committee also controls resettlement of farmers and the use and allocation of land. The committee was able to achieve this through an agreement with the Witbooi Traditional Authority which is the custodian of the land. Committee members feel that having such authority localises land management and reduces competition for land between farmers, livestock and wildlife.

The provision of support services to the conservancy is coordinated through the Oskop support group which consists of service providers and the conservancy committee members. The group's mandate is to coordinate development initiatives within the conservancy's boundaries, plan and exchange information. A number of NGOs as well as the Ministry of Environment and Tourism and the Directorate of Rural Water Supply sit with committee members in the support group. The aim is to ensure that the provision of services is coordinated through joint implementation of the conservancy's own development priorities.

The residents of Oskop appear to have used the conservancy as a mechanism to formalise collective decision-making and to re-integrate the compartmentalised approach to resource management that government promotes through its single resource committees and single resource extension agents. The conservancy also appears to have become a focus for broader development planning and implementation.

The development of conservancies in Namibia has been accompanied by a well-developed and targeted programme of support to local communities. This support includes institution building and governance, training in running committees, financial management, wildlife monitoring, negotiating with the private sector etc. This is the same sort of support required by most land reform resettlement schemes.

The institutional arrangements that have developed in the Oskop conservancy provide important lessons and examples for the government land reform programme. It is insufficient to provide people with land without addressing the issues of how that land and its resources will be managed and how resettled people can begin to function. The holders of individual plots of leasehold land on resettlement schemes could constitute themselves in a way that enables cooperation over decision making and begin to plan jointly a development vision for the future. They could begin to coordinate provision of services according to their own development planning.

It is an interesting conclusion that the experience, skills and knowledge gained by communities, NGOs and the government in forming wildlife and tourism conservancies could play a major role in filling some of the large gaps in the government's land reform resettlement programme.

CHAPTER 6
CONFLICT VULNERABILITY AND PREVENTION

6.1 USAID's approach to conflict vulnerability and conflict prevention

As part of preparing a new country-level strategic plan, USAID country missions are expected to: a) prepare an appropriate conflict vulnerability analysis in the Strategic Plan; b) summarise the findings of such an analysis in the Strategic Plan; and c) specifically indicate when and how these findings affect the proposed Strategic Plan. The objectives of the strengthened conflict vulnerability analysis are to: i) help safeguard the achievement of USAID strategic objectives and development objectives; and ii) make the need for costly post-conflict humanitarian assistance, peacekeeping and reconstruction less likely. This chapter analyses the potential for major conflict to arise in the NRM sector. The USAID guidance document on Conflict Prevention suggests the need to look at perceived economic, political, civil-military or social tensions that could lead to violent or deadly conflict, economic crisis, political crisis and complex emergencies. Potential regional conflicts are also noted for scrutiny. The language of the guidelines appears to suggest that the type of conflicts that need to be considered are those that would lead to serious consequences at a national or regional level. Two such potential areas of conflict can be identified for Namibia and are considered below. However, conflicts at the local level can also affect programme strategies, particularly where there are new opportunities for people to gain access to rights, revenues and resources as is the case with CBNRM and land related approaches. This chapter therefore also gives some attention to conflicts that have arisen within the existing CBNRM programme. The general conclusion is that serious conflicts that are violent or deadly are unlikely to emerge in Namibia if current trends continue. However, circumstances can always change and in view of this, development interventions should be tailored to ensure that the necessary stability is maintained.

6.2 Conflicts with potential national and regional impact

Two such conflicts have been identified:

c) Potential conflict over land reform.

According to Dejanvry (2000:1): "Increased land inequality either real or perceived) or rising land scarcity (through population growth, few off-farm employment or migration opportunities, a lack of land-saving technological change) act as triggers to conflict; this can escalate into violent collective action if the marginalised group in question has a strong collective identity,

few opportunities for expressing its dissatisfaction, feels that it can make gains from initiating violent collective action, has effective leadership, or believes that the state is weak."

If land reform does not meet the needs of Namibians then there is potential for economic and political crises leading to potentially violent conflict. This is particularly true if Namibia follows a similar path to Zimbabwe's land reform process which has led to economic and political disruption and violence. There are signs that Namibia will not choose this path. On the one hand the ruling party and the president are not in such a weak position *vis à vis* the electorate that they need to exploit the land issue for to strengthen their own position. On the other hand, most of the productive rangeland in the central part of the country historically belonged to Herero pastoralists and the population group from which the ruling party derives most of its support never controlled land south of the current Etosha National Park. A land reform programme based on the Zimbabwe model would run the risk of serious internal conflict over the allocation of the seized land.

However, it is possible that growing frustration among Namibians at the lack of progress with land reform is likely to build pressure for more radical government action. Development assistance should therefore promote processes that lead to non-violent and economically stable outcomes. De Janvry (2000) suggests a number of ways in which the poor can be assisted to acquire land beyond typical land reform approaches. Significantly one of these is to promote cooperation in resource management by "transforming open access resources into common property resources through collective titling." This suggestion supports the need to promote the provision of secure group tenure to rural communities in Namibia. VanDeveer (2000: 1) also notes that "co-operative environmental protection and resource management can play important roles in economic development and conflict prevention. For example, building capable governance institution has important connections to sharing resources and resource management institutions. Environmental cooperation connects conflict prevention and other development goals and needs." These linkages suggest that conservancies and similar local level resource management institutions in Namibia can play an important role in preventing significant conflicts.

d) Conflict with neighbours over water use.

There is limited potential for conflict to develop between Namibia and neighbouring countries over the use of shared river water resources. In the north Namibia is an upstream neighbour to Botswana along the Okavango River. Namibia has indicated that it wishes to abstract water from the Okavango River upstream of Botswana's Okavango Delta, which is an important area for biodiversity conservation in Botswana and is a major

international tourist attraction. In the south, Namibia is a downstream neighbour of South Africa and agricultural enterprises and other activities are dependent upon the upstream supply of water. There is an international commission (OKACOM) for the management of the Okavango Basin and there are discussions between Namibia and South Africa over the management of the Orange River. These institutions and the platforms they provide for consultation and negotiation should prevent conflict developing and reaching crisis proportions. Water also appears to have been a resource over which there have been very few international conflicts. Perhaps because it is so fundamentally vital for human survival, the incentive is to collaborate and compromise rather than go to war. However, development assistance can help to bolster the processes of consultation, negotiation and consensus building.

6.3 Local level conflicts over natural resources

Local level conflicts over land and natural resources in Namibia tend to focus on the issues of access and use. The weakening of traditional institutions by colonial administrations and the post colonial government, as well as the introduction of state ownership of communal land have contributed to the development of "open access" conditions for several resources in Namibia. Although there are supposed to be checks and balances, in many cases outsiders are able to gain access to local resources without permission of local people and without paying compensation. This makes management by local communities extremely difficult and breaks down the incentive to manage sustainably. If someone else is likely to come in and consume the resources someone has been conserving for later use, then it is in that person's interest to use the resources first. These problems apply to fish resources in the northern rivers, forest resources, grazing land and forests. There is no evidence of violent conflict due to land and resource competition so far. But as resources become scarcer, this situation could change. As noted above, tenure arrangements that give secure tenure to local communities and local level institutions that can exercise good governance over natural resources can help to reduce the potential for conflict.

In general conservancies and community forest institutions will play this role. There are some instances, however, where conflicts have developed linked to conservancy formation. In two of these cases, the Salambala and Uukwaluudhi conservancies, conflicts (non-violent) emerged because of competition over land use and access.

Salambala Conservancy

The Salambala area includes approximately 10 000 inhabitants and comprises an area of 93 000 ha. The area comprises the mainly uninhabited Salambala forest, a former hunting area of the Basubia Chiefs. No livestock was allowed

within the borders of the forest. Traditionally hunting in the forest was controlled by the Chief and only people with the approval of the chief could hunt in the area. During the severe floods in early 1970s, the Munitenge tribal authority temporarily allowed people to settle within the Salambala forest.

The Salambala conservancy was registered in 1998 after a four-year period of formation. The conservancy committee zoned 14 000 ha as a core wildlife area within the Salambala forest in which no settlement, cattle grazing or clearing of land for crops would be allowed. The initial boundary for the core wildlife zone surrounded an area in which about 250 people were resident. After complaints by the affected residents the boundary was adjusted so that only 16 families (approximately 90 people) were affected. Fourteen of the sixteen families left the core area voluntarily. Two families remained and two new families moved into the area. Although alternative land was offered to all affected families, as well as employment within the newly formed conservancy, three families are still residing in the core area. As no solution to the conflict is in sight, the conservancy has approached the Legal Assistance Centre (LAC) to open a court case against the three families to be removed from the area.

Uukwaluudhi Conservancy

Attempts have been underway to form a conservancy in the Uukwaluudhi tribal area since 1995. MET staff and personnel from the LIFE Project began discussions with King Taapopi and his councillors about the development of a conservancy which would give the community the right over wildlife and land. The King and the council accepted the conservancy approach and formed an interim committee to guide the process of conservancy formation. Plans were developed to establish a conservancy in the Okashana area where the King had hoped to establish a game reserve. It was proposed to fence off a core area of about 20 000 ha within the conservancy for the re-introduction of wildlife, because game had been severely depleted in the past. For almost six years the core area was at the centre of a number of disputes. The most long lasting dispute was between livestock owners who had been given rights in the past to graze within the proposed core area. At one stage it appeared as if the livestock owners would succeed in reducing the core area to a completely inappropriate size. However, following interventions by senior politicians and the LIFE Project, an agreement was reached. The livestock owners agreed to a reduction of the core area to 5 000 ha. The opposition to the core area had caused the MET to hold back on accepting the application for the establishment of the conservancy. Following the agreement with the livestock owners, the application to register the conservancy could go ahead.

In the case of Salambala, it appears as if legal means might need to be used to resolve the conflict with the three families remaining in the core wildlife area. However, in the case of Uukwaluudhi, extensive consultations and negotiation assisted by the intervention of politicians led to a resolution of the conflict. The

issues concerning use and access to land that arise from conservancy land use planning can and should be dealt with at the local conservancy level. If local conflict resolution mechanisms fail then external interventions can be useful.

In some cases, communities themselves might find ways to resolve local conflicts. This was the case with the emerging Sesfontein Conservancy. Internal conflict delayed the formation of the conservancy for six years. The conflict was intense and had the potential to spill into violence. The causes of the conflict related to local power, land and resource disputes, some of which had existed well before the conservancy was proposed. Significantly the disputes were resolved through the intervention of members of neighbouring communities who also wanted to form conservancies. Their own progress was being hindered by the Sesfontein disputes because in order to have their own conservancies registered they needed to negotiate their boundaries with Sesfontein. This could not be done until the disputes were resolved and the Sesfontein boundaries clarified. A group of traditional leaders and committee members from neighbouring emerging and registered conservancies formed a dispute resolution committee to bring all the conflicting parties together. As a result, the disputes were resolved during 2002. There is now a new Sesfontein conservancy committee, consisting of members of the two main factions involved in the dispute. Discussions with this committee suggest that the conservancy formation process in Sesfontein, despite being the focus of a long and bitter dispute, has in fact helped to bring together people from different ethnic groups, different factions within ethnic groups, different family clans and different political parties.

CHAPTER 7
POTENTIAL FOR LINKING CBNRM WITH OTHER KEY NATURAL RESOURCES ACTIVITIES AND PROGRAMMES

7.1 Key themes in NRM in Namibia

The preceding chapters have emphasised three key themes. Firstly that the potential for agricultural production is limited because of Namibia's climatic conditions that lead to low and highly variable rainfall, which in turns leads to a situation of water scarcity. These limits imposed by the climate are fully recognised in government policies and strategies for agriculture, poverty reduction and food security.

The second theme is that of the need to diversify rural livelihood strategies in order to cope with the limiting climatic conditions. The importance of diversification is also recognised in government policies and strategies. It forms a key part of the government's approach to agriculture as set out in NDPII. Indeed, the agriculture strategy in NDPII commits the government to: "Continue with the support and enhancement of the broadening and diversification of the scope of agricultural production through the promotion of alternative, supplementary and complementary enterprises including cash crops, off-farm and non-agricultural ones to take advantage of new opportunities and comparative advantages based on different resource endowments" (NPC: 2001). This point about comparative advantages based on different resource endowments is important. For much of the country, small-holder crop production is impossible or extremely difficult. Extensive livestock farming combined with wildlife and tourism represent the best land-use options over much of the country. For some areas with large numbers of high profile game species and spectacular scenery, tourism is the major comparative advantage.

The third theme is the link between tourism, wildlife, and conservancies and diversification of rural livelihoods, poverty reduction and food security. A number of government policies and strategies explicitly recognise this link. Further, the existing conservancies and other CBNRM activities have begun to demonstrate that households can gain direct benefits (financial and non-financial) from tourism and wildlife (including plant products). Various projections show that the income to local communities can increase considerably if tourism grows as expected, if markets for products derived from wild plants can be increased, and if communities are able to increase their share of the available income.

There are other ways that conservancies and CBNRM activities can promote secure livelihoods, poverty reduction and food security beyond providing additional income. Various government policies and strategies emphasise the provision of safe potable water as one of the foundations for poverty reduction

and food security approaches as this contributes significantly to good health. The current CBNRM programme in Namibia has contributed considerably to the development of a much stronger skills and knowledge base in rural communities. In the language of livelihoods analysis, this has strengthened the human capital available in these communities. Further, the improved resource base from improved management of natural resources strengthens the natural capital that local communities depend upon. But perhaps the most important contribution to the current CBNRM programme so far has been the promotion of local institutions for the collective management of common property resources. The conservancies in the wildlife sector and the community forest committees in the forestry sector provide the means for residents who all have access to the same resources to establish a common management regime that can limit use and ensure equitable benefit. The major constraint facing these institutions has been their embeddedness in one sectoral government line ministry. As a result, they have not been viewed as vehicles for a holistic approach to local land and natural resource governance. Within a conservancy for example, there might also be water point committees charged with managing and maintaining water installations and water supply. There might also be a forest committee and various village development committees.

This institutional issue is also linked to the Namibia's dualistic approach to land tenure. While the state owns communal land and communities lack strong tenure, conservancies, community forests and other institutional arrangements will remain constrained by a lack of authority to exclude outsiders. The need for tenure reform that provides strong land rights to local communities remains crucial. The preceding chapter highlighted the opportunities for CBNRM approaches and principles to contribute to dealing with the problems faced by resettlement areas.

7.2 Links to the Agricultural Initiative to End Hunger in Africa

The theme of diversification of rural agricultural production systems and rural livelihoods fits well with one of the main aims of the new USAID Agricultural Initiative to End Hunger in Africa. Although the initiative is primarily focused on the development of small-holder agriculture, it does refer to rangelands and makes provision for activities aimed at diversifying livelihoods, institutional development and developing markets for environmental goods and services. Reference is made to generating income from the sustainable use of natural resources such as through eco-tourism and the sale of non-timber forest products. This would suggest that activities based on existing and emerging CBNRM activities could fit with the new initiative. Reference is also made to comparative advantages that farmers might have in environmental goods and services. In an arid country such as Namibia, wildlife, tourism and indigenous veld products suggest themselves as areas in which a comparative advantage is strong.

However, there would appear to be some constraints to accessing funds under this initiative. So far the initiative will initially start in three selected countries in Africa based on the identification of three regions: Eastern, West and Central and Southern Africa. The selected country in Southern Africa is Mozambique. The initiative also includes a sub-regional focus aimed at building partnerships among neighbouring countries, opening markets, promoting technical exchange and promoting linkages that can avert food-based crises. It is envisaged that the number of countries involved in the initiative will grow over time as additional funds become available.

A further constraint is the focus of the initiative on technical scientific approaches to improving small holder agriculture, and the development of markets. In order to access funding under this initiative, a strong case would need to be made that because of Namibia's climatic conditions, a small-holder approach is inappropriate. A much more comprehensive approach is required that concentrates on diversification through specific comparative advantages.

7.3 Links to USAID's Water Initiative

USAID has set three water-related objectives as part of a strategic approach to water management. These are:

- Increased access to clean water and sanitation services
- Improved watershed management
- Improved productivity of water in agriculture

With regard to increased access to clean water and sanitation services, USAID aims to concentrate on countries where water authorities are undertaking the reforms necessary to enable viable partnerships with local governments, water utilities, the private sector, NGOs, communities and families. US$510 million is available for investment over the next three years. Of particular relevance for Namibia is funding of up to US$450 million for water supply, sanitation and health projects that include the construction and rehabilitation of water treatment plants, water and sewer networks, wells, and sewage treatment plants as well as health and hygiene education programmes. Further there are opportunities to replicate the West Africa Water Initiative in other regions. This initiative supports the establishment of small-scale potable water supply and sanitation, hygiene and water management activities primarily in rural areas. USAID intends to spend US$400 million on improved watershed management, integrating surface water, aquifer and coastal zone management.

Water management in conservancies could be an area for which funding could be sought under the water initiative. An integrated approach could be developed for linking the institutional development of water point committees and

conservancies, the planning of water use for humans, livestock and wildlife, and the maintenance of water infrastructure, particularly in areas where elephants damage installations.

7.4 Links to USAID RCSA's Strategic Planning

The Concept Paper for RCSA's Strategic Plan to 2010 includes Enhanced Regional Food Security as one of the Strategic Options for promoting Broad-based Economic Growth and Agricultural Development. The paper sees diversification of rural livelihoods as "a strategic linkage between food security and water resource management strategic options". However the main food security focus is on improved agricultural science and technology, agribusiness, markets and trade, which links directly to the objectives of the Initiative to End Hunger in Africa. The Strategic Option on Water Resource Management has more to say with regard to diversification of livelihoods. It links this to "sustainable natural resource utilisation through improved rural livelihoods and ecotourism in the headwaters and wetlands of river basins to reduce the conflicts with competing downstream users of water." The SO suggests the Okavango and Zambezi River Basins as areas of focus. Some existing activities in Namibia have been initiated along these lines through the Every River Project funded by SIDA. These include promoting community involvement in decision-making in the Okavango basin, linking local communities with OKACOM and developing local sustainable NRM activities in Kavango Region. Some of these activities would be wildlife and tourism-based but others would be based on fisheries, forestry and water. Given Namibian experiences with the RCSA's Four Corners transboundary project it is unlikely that Namibian organisations involved in the Every River Project would be open to regional funding assistance. However, given the good relationships developed with Namibian organisations and the bilateral mission through the funding and implementation of the LIFE project, there might be opportunities in this context.

7.5 Conclusions

The following broad conclusions can be made with regard to new USAID Namibia programmatic opportunities.

I. Activities based on diversification of rural livelihoods and food security are most likely to be congruent with GRN and USG objectives, policies and strategies.
II. Some limited opportunities exist within USAID Washington programmes and RCSA SOs to develop such activities. Proposals in this regard will need to be very carefully and strategically crafted. With regard to the Initiative to End Hunger in Africa, the timing of the release of funds to support countries additional to the initial focus countries will be crucial

III. Care needs to be taken that new activities should link with existing strategies under the Namibia Mission's current SO3. It will be easier to build on existing institutions (e.g. conservancies), NGOs and the implementation experience gained from the existing CBNRM programme. This represents a wealth of capital on which to base further investment. Further, existing activities still require some consolidation and support in order for their full benefits to be realised.

However, there are some areas in which the current CBNRM activities are already expanding and there are clear links that can be made between wildlife/tourism and other sectors:

1) A limited number of pilots could be developed with the MLRR through applying CBNRM principles and support packages to selected resettlement areas. Such an approach would be based on the strategic consideration that links with MLRR could lead to more policy dialogue on group land tenure. An important goal would be to work with the MLRR so that residents of at least one resettlement area and at least one pilot conservancy could apply for group land rights under existing policy and legislation with the support of MLRR. Another need is to assist MLRR in developing clear and realistic objectives for Land Reform and assisting implementation of these objectives. In this regard assistance could be provided in exploring various options for removing the current dual tenure system. This could be an alternative means of promoting land distribution to the current approach based on the need to buy freehold land. As the land issue has been identified as an area with the potential to create major conflict, activities in support of land tenure reform would also link strongly to preventing conflicts that could undermine USAID Namibia's country strategy.

2) The USAID Namibia programme could develop a specific focus on the provision of safe and potable water to rural communities through support to water point committees in existing conservancies. USAID assistance would be designed to comprehensively deal with a number of issues related to water: a) Provision of the CBNRM package of training and capacity building to the water point committee members; b) Provision of support for the development of the commitees as effective governance institutions for water (i.e. dealing with issues of access, allocation, use and water user fees); c) Provision of support to the water point committees and conservancies to develop appropriate institutional links (e.g. joint planning and decision-making, funding from conservancies to compensate for installations broken by elephants). An innovative way to approach this would be to promote the conservancy as a service provider to the water point committees. In this way assistance to the water point committees could be channelled through personnel attached to the conservancy and funding channelled through the conservancy to the water point committees. This approach would imply

developing links with the MAWRD and those implementing its community based approach to water management.

3) Support could be given to further exploration of opportunities for sustainable veld product harvesting, product development and marketing, also within a conservancy context. Again, this should be linked to some form of institution for natural resource governance such as a conservancy or community forest committee, or ideally, a community institution that has received rights over both wildlife and forest resources. Activities could focus on a) development of local markets for various products; b) further development of export markets c) development of appropriate institutional arrangements that ensure that middlemen do not capture the profits d) attention to unintended results of commercialisation (e.g. loss of access to resources by poorer households, unsustainable use etc.) e) attention to developing the conservancy or community forest committee as an institution for management at the local area scale to deal with issues of potential over utilisation and local area coordination.

4) Support could be given to one or two pilot activities working with non-wildlife conservancies that are focusing on resources such as rangeland, water, forestry, and fisheries. In southern Namibia, a number of conservancies are emerging that have water and rangeland management as their main focus, with very little wildlife or tourism activity. Some progress is being made in bringing together extension officers from the water, livestock and wildlife sectors with NGOs to coordinate service provision to conservancies. Assistance could be provided to MAWRD extension agents in developing appropriate extension approaches for conservancies in the south. In the north east similar support could be given within the context of the RCSA's water basin management SO if the Kavango Region was targeted. The DFID support to the North Central Community Based Natural Resource Management and Enterprise Development (NCCED) Project is due to end soon. It is not clear whether DFID will continue to fund this project as DFID aims to end bilateral support and move to regional activities. The French Government is also exploring support opportunities in the north central regions. The NCCED project has started to develop a firm base in the politically important north central regions and focuses on integrated approaches to resources management, which includes rangelands, veld products, tourism and crafts. The wildlife potential is limited, but a start has been made in developing relationships between local communities and the neighbouring Etosha National Park. There are already links with this project and the LIFE project through joint support to the Uukwaluudhi conservancy.

ANNEXE 1
CURRENT STATUS OF NAMIBIA'S COMMERCIAL FISH STOCKS

FISHERY	SPECIES	CURRENT STATE	CAUSE, EXPECTED TRENDS & COMMENTS
Pelagic	*Pilchard*	Overexploited	Over-fishing. No growth expected until stock recovers (if at all)
	Anchovy	Low abundance	Adverse environmental conditions
	Juvenile horse Mackerel	Abundant	Present environmental conditions favorable
Midwater	*Horse mackerel*	Abundant	Present environmental conditions favorable.
Demersal	*Hakes*	Not at maximum sustainable yield, but improving	Slow recovery from over-fishing and adverse environment
	Monkfish	State uncertain but good recruitment for a number of years	Management will improve with the introduction of TAC and Quota management system
	Kingklip	Stock is growing	Not a directed catch
	West coast sole	Unknown	Mostly occur in the shallow areas and protected by the 200m depth restriction on all trawling
Deep Sea	*Alphonsino*	Migratory and state uncertain	
	Orange roughy	Uncertain. Decrease in availability - is it due to over-fishing, intermittent spawning or fishing disturbance?	Long lived, low production species, unlikely to sustain substantial catches
	Oreo dory	Uncertain	
	Deep sea red crab	Population stable	Shared with Angola. Co-management has been initiated.
Commercial and recreational line fishing	*Albacore tuna*	On maximum sustainable yield.	Managed by ICCAT
	Big eye tuna	On maximum sustainable yield.	Managed by ICCAT
	Snoek	Uncertain but seems to be on the increase	
	Kob	Fishing pressure is too high	Should be a decrease in commercial fishing pressure and restrictions on angling
	West coast steenbras	Fishing pressure is too high	Restrictions on angling needed
	Barbel	Healthy	
	Blacktail	Precarious	More restrictive bag limits

Rock lobster	*Rock lobster*	Slow growth but consistent increase since 1992	TAC`s are increased slowly to allow for a continued recovery back to maximum sustainable yield levels of around1200 mt
Mariculture	*Pacific oysters*	Production on increase	High potential for expansion. The culture of shellfish can be undertaken with limited economic resources and (when compared with inland aquaculture activities) limited environmental impacts since feeding is not required. However cultured species can be susceptible to periodic outbreaks of disease and could be the cause of the spread of the introduction of alien species.
	European oysters	Very low production but good prospects	
	Black mussels	Farming has started but many difficulties are experienced	
	Seaweed	Very promising with 10 ha culture in Luderitz lagoon. Top Quality.	
Marine mammals	*Cape fur seals*	Population very robust and still growing. Not yet harvested at maximum sustainable yield levels.	Increased harvesting levels possible as shown by latest models

Source: NNRC 2002

ANNEXE 2
THE KEY THREATS TO SUSTAINABLE DEVELOPMENT IN NAMIBIA

The following have been identified as the key threats to sustainable development in Namibia. They all have an impact on the natural resource base, some more directly than others (source NNRC 2000):

- **Population growth and settlement patterns.** Population growth directly affects future demand for natural resources, rates of urbanisation and poverty.
- **Increasing water stress.** Namibia's limited freshwater resources are being placed under increasing stress due to population growth, rapid urbanisation and economic growth.
- **Poorly planned development and inappropriate industrialisation.** A lack of strategic planning can lead to inappropriate developments that do not make optimal use of Namibia's comparative advantages, and place unnecessary pressure on limited resources such as water.
- **The loss of biodiversity** impacts on our development options. It disrupts ecosystem stability and the functions that underpin our very survival (e.g. the provision of clean air and water, the control of soil erosion and floods, and the assimilation of wastes).
- **Land issues.** Low land capability means that Namibia's soils are easily degraded. In addition, the unequal distribution of land, if not resolved in the near future, will lead to conflict that could destabilise our entire society and economy. The lack of secure group tenure does not provide incentives for people to care for the land and invest in its improvement. The "open access" problem in Namibia is economically and environmentally unsound as it leads to environmental degradation, dissipation of net benefits and reduced production.
- **Poverty and inequality**. Namibia has one of the most highly skewed income distributions in the world. This means that there is significant poverty and inequality in the country. Poor people have few options but to depend on primary production for food and energy and therefore can place tremendous strain on natural resources.
- **Consumption patterns.** Wealth can also threaten sustainable development. Wealthy people and communities often choose to have resource intensive lifestyles. If they do, they become responsible for high rates of energy and raw material consumption and for producing large amounts of polluting waste. Policy incentives are vitally important to dissuade the wealthy members of society to reduce their excessively consumptive lifestyles.
- **Poor governance.** Governance affects efficiency within the civil service, equity, political stability and democracy. Equity and transparency have been highlighted as the most important aspects of governance that needs to be addressed in Namibia. In addition, the slow adoption of decentralisation, the lack of intersectoral planning and co-ordination between ministries and

stakeholders, and low levels of public participation in decision-making on some key issues, threaten good governance in Namibia.

- **Increasing competition with neighbouring countries for shared natural resources.** Improved and sustained co-operation and co-ordination regarding policies and policy implementation is essential to avoid future inequitable use, pollution and conflict over shared water, marine fisheries and wildlife resources.
- **A lack of human resources.** Inequalities in education levels, skills training and capacity building still exist in Namibia, despite efforts to redress past injustices. The resulting lack of skilled labour and limited human resources restricts private sector development and public sector functioning. Current trends of a declining skills-base (e.g. parks and wildlife management) are of great concern and Namibia needs to decide on the road ahead in terms of management systems and partnership arrangements. While the creation of parastatals and agencies is based on sound principles and should continue, in some cases they have not performed well and have resulted in negative perceptions.
- **The HIV/AIDS epidemic.** The prevalence of the HIV/AIDS epidemic undermines human well-being and economic prosperity by reducing the quantity and quality of the labour force. In addition it wipes out past investments in education and training and places a strain on communities and households that need to care for orphaned children, the sick and dying.
- **The need to improve access to existing knowledge and fill knowledge gaps.** Rapid modernisation threatens the survival of valuable traditional knowledge and practices in Namibia. Traditional knowledge is seldom acknowledged as providing any contribution to development - despite the fact that it is often better suited than Eurocentric technology to conditions in Namibia. Even though a lot of useful information currently exists, there are significant gaps in our knowledge regarding many issues relating to sustainable development and environmental issues.
- **The need for a stable macroeconomic environment.** A stable macroeconomic environment it vital for economic growth and poverty reduction. Despite some positive macroeconomic trends since the early 1990s (for example, a steady reduction in the inflation rate), Namibia's macroeconomic environment is not yet considered stable.
- **The adverse impacts of global atmospheric change.** Under climate change conditions there is the possibility that Namibia's climate will become hotter and drier with increased variability and more frequent and prolonged periods of drought. These conditions will exacerbate current problems regarding water management, food production and human health.

ANNEXE 3
2030 VISION FOR COMMUNAL AREA CONSERVANCIES

Source (NNRC 2002)

KEY INDICATORS	**2001 Current Situation**	**2030 Scenario No. 1: Conservancy legislation primarily supports development of wildlife & tourism resources**	**2030 Scenario No. 2: Conservancy legislation expanded to allow management of other common resources (i.e. rangelands, community forests, water, etc.)**
Number of registered conservancies	A total of **19** communal area conservancies have been registered as of March 2003, while an additional **30** are at various stages of formation.	It is estimated that approximately **65** communal area conservancies could be registered for the specific purposes of developing and managing wildlife and tourism resources.	Should the GRN recognize conservancies as a common property management mechanism for other communal resources (i.e. rangelands, community forests, water, fresh water fisheries, etc.), then it is estimated that more than **160** conservancies could form on communal lands.
Number of hectares of land & natural resources managed thru communal conservancies	**4,080,224 hectares**	It is estimated that **15,000,000** hectares of communal area would be suitable for management of wildlife & tourism resources. This is equivalent of **18.2%** of Namibia's land mass (or 44% of communal lands).	It is estimated that a total of **24,000,000** hectares would be suitable for a conservancy common property management mechanism if rangelands & community forests were managed by conservancies. This is equivalent of **29.2%** of Namibia's land mass (or 71% of communal lands).
Number of people benefiting from conservancies	**65,000** are presently benefiting in registered conservancies, while more than **75,000** people are currently participating in the communal area conservancy movement.	Given a conservative population growth rate of 2.0% per annum (taking into consideration the impact of HIV/AIDS) and expansion of the conservancy movement to other parts of the country, it is estimated that over **250,000** communal area residents would benefit from conservancies by 2030 under the current legislation.	Given the same projected growth rate, and should the legislation be expanded to include other common property resources, then it is conceivable that more than **900,000** communal area residents could benefit from better managed natural resources by 2030.
Expansion of conservancy programme and wildlife habitats	Currently, conservancies are predominantly forming in parts of the Kunene, Erongo, Caprivi, Omusati and Otjozondjupa regions.	Given the sparse settlement patterns and potential wildlife habitat, conservancies should cover many portions of the Oshikoto, Ohangwena, Kavango, Hardap, Karas, and Omaheke regions as well. As a consequence,	Conservancies would be established in all regions under this scenario.

		wildlife (as an income generator and drawcard for tourism) will be more widely dispersed and supported throughout all of these regions.	
Links and partnerships between communal and freehold conservancies	Very limited contact, with freehold conservancies now covering some 4 million ha and expressing an interest in closer collaboration	Close links and cooperation, resulting in sharing of expertise, translocation of wildlife, partnerships around trophy hunting, capture and live sale, cropping and tourism; linked marketing, joint training, etc.	Expansion of natural resource management and enterprises to all natural resources. Close cooperation around agriculture, marketing, tourism, wildlife and forestry management, significant sharing of skills and opportunities, etc.
Income & benefits being generated in communal areas through tourism activities.	Presently, it is estimated that tourism enterprises in communal areas are generating approximately **N$58,233,000** in gross revenues, of which only **N$4,732,885** are documented as returning to community members.	Given the anticipated growth of the tourism industry (which is very conservatively calculated in the attached Annex), the anticipated increased in the number of joint ventures & community tourism enterprises, it is estimated that employment and cash benefits from tourism will exceed **N$3,978,450,000** by year 2030, of which more than **N$795,691,000** will be directly benefiting communities.	In addition to the massive benefits reflected in the previous column, the subsistence benefits to community members from better managed resources will be reflected in improved livelihoods and reduced support costs to the GRN in managing its national resource base and the people dependent upon it.
Income & benefits generated from trophy & subsistence hunting and live game sales.	Presently, hunting concessions in communal areas are generating in excess of **N$3,217,000** of hunting fees. It is estimated that total revenues generated from hunting operations in these concessions generated more than **N$9,000,000** of which **N$1,350,362** was returned to conservancies in 2001. However, there is immense scope for increasing the number of concessions and the current off-take rate (which in nearly all instances is less than 3% of the huntable game populations.	Should conservancy game populations continue to expand, then it is possible to project increases of 20% per annum in returns for trophy hunting (i.e. through increased supply and exchange rate savings) and other subsistence uses of wildlife, bring the annual projected returns by 2030 to **N$844,893,255** of which conservancies and their members would directly receive **N$340,212,802** in benefits.	Should the veterinary red line be moved further northwards and eastwards, thereby allowing the conservancies in the Kunene and Otjozondjupa to sell live game, then estimated additional benefits of **N$62,000,000** could be realized by conservancies by the sale of live game by 2030.

ANNEXE 4
LIST OF PERSONS CONSULTED

Jon Anderson	Natural Resource Policy Adviser, USAID/EGAT/RLMT Washington
Chris Brown	Director: Namibia Nature Foundation
Bruce Byers	Consultant
Carol Culler	SO 3 Team Leader, USAID/Namibia
Kirk Dahlgren	Assistant Mission Director, USAID/Namibia
Chris Henderson	Technical Advisor EU/National Planning Commission
Walter Knausenberger	Senior Regional Environmental Adviser USAID, Regional Economic, Development and Service Office, East and Southern Africa
Gabriel Kongoha	Deputy Director: Emergency Management Unit
Erhard Loher	First Counsellor, Delegation of the European Commission in Namibia
Yohannes Mesfin	FAO Chief Technical Adviser: Food Security, MAWRD
Shereen Pieterse	SO3 Project Assistant, USAID/Namibia
Sylvester Simwanza	Chief Control Officer: Planning and Operations, Emergency Management Unit
Patricia Skyer	Co-ordinator, NACSO Secretariat
Diana Swain	Mission Director, USAID/Namibia
Christiaan Titus	Program Development Specialist, USAID/Namibia
Piers Vigne	REMP Project, MAWRD
Chris Weaver	Chief of Party, WWF-LIFE Programme

ANNEXE 5
STATEMENT OF WORK

Selected Natural Resource Management and Limited Rural Development Assessment

Overview Statement

USAID is currently in the process of developing a program strategy for the years 2004 through 2010. It is likely, that for the most part, the strategy will be a continuation of activities under the current strategy, i.e., activities to further the development of small and medium enterprises, strengthen education in the lower primary grades, promote community based natural resource management., support the entrenchment of democracy, and stem the spread and mitigate the impact of HIV/AIDS. Nevertheless, USAID would like, initially at least to look beyond its five areas of current interest, in the event that the exploration might:

- Give us a broader understanding of the country in which we're working;
- Lead us to opportunities that we might not have considered had we looked at our five areas of interest in respective isolation; but activities that nonetheless might be effectively supported under the on-going five areas of interest; and/or
- Position USAID/Namibia to apply for funding under various Agency, Bush Administration and other initiatives.

Specific Tasks

1) The contractor will provide a profile of Namibia natural resource management base. The profile will:

    - Identify, and to the extent possible, quantify in terms of supply and demand, resources that Namibia is or could be rich in and essential resources that Namibia is, or could become, short in. Describe how Namibia's resource base has shaped the country and will shape its future, in terms of Namibia's participation in regional and global economies, national wealth creation and employment generation, mitigation or exacerbation of wealth disparities, economic variations within the 13 regions, sources of conflict, and other factors deemed relevant by the consultant.
    - Discuss the Government of Namibia's efforts to take advantage of natural resource wealth.
    - Identify Namibia's most critical natural resource issues and discuss Government of Namibia's plans/actions to address those issues.
    - Provide a brief overview of donor involvement in the natural resource sector, i.e. funding and type of activities.
    - Discuss the communal areas as a subset for each of the factors in the bullets above.

2) The contractor will provide a profile of Namibia's agriculture sector. The profile will:

    - Provide an overview of the agriculture sector's role and potential role in the economy in terms of employment generation, exports and export earnings, etc.
    - Describe differences between the commercial and communal areas in terms of land holdings, crops produced and animals raised, markets accessed, profitability, employment, government policy and other relevant factor.
    - Identify opportunities for increases in agricultural production, ether for export or for local markets.

- Identify the key policy, infrastructure, capacity and other constraints to increased agricultural production in Namibia and describe Government of Namibia plans/actions t address those constraints.
- Provide an overview of donor involvement in the agriculture sector, i.e., funding and types of activities.
- Discuss the communal areas as a subset for each of the factors above.

3) As a subset of the agricultural profile, provide an assessment of the food security situation in Namibia.

   - Describe the food security situation in Namibia today and compare it to the average food security situation since 1995 in terms of numbers of people affected, how they're affected and the government's ability to respond with assistance.
   - Describe the government's program to provide food security to drought affected areas. Identify any areas of planning, implementation or monitoring that could be strengthened and where donor support might be welcomed.
   - Describe the impact, if any, that Namibia's current land tenure situation has on food security.
   - Assess the extent to which HIV/AIDS is exacerbated by the drought and vice-versa.
   - Identifying any assumptions made, project the food security situation for Namibia over the next three years.
   - Discuss the communal areas as a subset of each of the factors above.

4) Assist USAID/Namibia in determining how, and to what extent it might address issues identified in the three analyses above thro9ugh its existing portfolio or through USAID/Washington or RCSA initiatives.

   - To what extent do laws, practices and experiences on the communal lands have an impact on commercial land issues, and vice-versa? Are there activities that USAID could support under the CBNRM program to help address land issues?
   - A comparison of conditions on the land of the now Gondwana Canon Park under (a) commercial small stock farming, and (b) private park management for tourism indicates that tourism is more lucrative, more economically stable and more environmentally friendly than small stock farming. To what extent is the Gondwana experience typical? To what extent do tourism demand and the carrying capacity of Namibia's land justify attempts to replicate the Gondwana experience?
   - To what extent can wildlife become part of a national food security strategy? Should this be promoted and, if so, how?
   - Based on the consultant's review of materials provided on USAID's agricultural initiative(s), what recommendations would the consultant make with regard to proposals that might be submitted.
   - Based on the consultant's review of the materials provided on the programs of USAID's Regional Center for Southern Africa, what recommendations would the consultant make with regard to proposals that might be submitted.
   - Based on his knowledge of the USAID's programs in Namibia and elsewhere and the findings of this assessment, what other recommendations would the consultant make with regard to making linkages between existing programs and potential programs to address constraints in natural resource management, agriculture, or rural development?

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