UNDP Project Document

Government of Botswana
United Nations Development Programme
Global Environment Facility
University of Botswana
World Conservation Union (IUCN)
Kalahari Conservation Society

Full Project – *Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta*

PIMS 2028

***Brief description*:** The Okavango Delta, the largest Ramsar Site in the world, is a globally important wetland ecosystem situated in northern Botswana. While the ecological integrity of this wetland remains largely intact, there are signs it is being slowly eroded in the face of gradually rising anthropogenic pressures. There is an urgent need across Botswana's wetland environments to balance competing uses of water and other wetland resources by production sectors, while providing for biodiversity conservation objectives. This need has led the Government of Botswana to develop a National Wetlands Policy and Strategy (now in the process of enactment). A Management Plan for the Okavango Delta (ODMP) is being developed as a schema for sustainable development in the area. This Plan is the first of a series of Plans that will be written for wetlands.

The Project is designed to support the elaboration and implementation of the ODMP. The GEF will finance the incremental costs of lifting barriers to mainstreaming biodiversity conservation objectives into three production sectors: water, tourism and fisheries, all dependent on ecological services and goods provided by the Okavango River. These barriers include: a systemic and institutional capacity deficit for wetland management, conflicts over access to wetland resources between user groups, weak management of knowledge needed to guide decision making from the local user level to regulatory authorities, and absence of voluntary mechanisms and incentives, to cultivate private industry involvement in conservation. The Project will remove the barriers through a two-tiered set of interventions: i) that build capacity within the regulatory authorities and service providers to assimilate and supply biodiversity management objectives in decision making; and ii) that demonstrate how best to incorporate biodiversity management into day-to-day production practices through pilot projects. A strong emphasis is placed on participation and engagement between the various stakeholders, and building partnerships between government, private sector and rural communities. While focused on the Okavango, it is anticipated that the conservation methods that will be piloted have application in other wetlands within Botswana. To this end, the Project maintains a strong focus on replication.

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Acronyms

ACHAP	African Comprehensive HIV/AIDS Partnerships
AIS	Alien Invasive Species
ALDEP	Arable Land Development Programme
APR	Annual Project Report
ARB	Agricultural Resources Board
ARV	Anti-retroviral
AVCU	Alien Vegetation Control Unit
AWP	Annual Work Plan
BD	Biological Diversity
BOBS	Botswana Bureau of Standards
BOWMA	Botswana Wildlife Management Association
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resources Management
CBO	Community Based Organization
CBPP	Contagious Bovine Pluero Pneumonia
CEDA	Citizen Entrepreneurial Development Agency
CHA	Controlled Hunting Area
CHBC	Community Home Based Care
CI	Conservation International
CTA	Chief Technical Advisor
DA	District Administration
DAHP	Department of Animal Health and Production
DANIDA	Danish Development Organization
DCPF	Department of Crop Production and Forestry
DDC	District Development Committee
DDP	District Development Plan
DEA	Department for Environmental Affairs
DED	German Development Service
DLUPU	District Land Use Planning Unit
DOL	District Officer Lands
DoT	Department of Tourism
DPP	District Physical Planner
DTO	District Tourism Officer
DTRP	Department of Town and Regional Planning
DWA	Department of Water Affairs
DWNP	Department of Wildlife and National Parks
EHD	Environmental Health Division
EIA	Environmental Impact Assessment
EMU	Environmental Monitoring Unit
EOP	End of Project
ERP	Every River Has Its People Project
ES	Executive Secretary
EU	European Union
FAP	Financial Assistance Policy
FMD	Foot and Mouth Disease
GEF	Global Environment Facility
GIS	Geographic Information System
GOB	Government of Botswana
HATAB	Hotel and Tourism Association of Botswana
HOORC	Harry Oppenheimer Okavango Research Centre
IBA	Important Bird Area
IRBM	Integrated River Basin Management
IR	Inception Report
IUCN	World Conservation Union

IW	Inception Workshop
IWRM	Integrated Water Resource Management Plan
JMC	Joint Management Committee
KAZA TFCA	Kavango-Zambezi Transfrontier Conservation Area
KCS	Kalahari Conservation Society
KMS	Knowledge Management System
LAC	Limits of Acceptable Change
LUO	Land Use Officer
MEWT	Ministry of Environment, Wildlife and Tourism
MFDP	Ministry of Finance and Development Planning
MGR	Moremi Game Reserve
MLG	Ministry of Local Government
MLHE	Ministry of Lands, Housing and Environment
MMEWA	Ministry of Minerals, Energy and Water Affairs
MOA	Ministry of Agriculture
NAMPADD	National Agricultural Master Plan for Arable and Dairy Development
NBSAP	National Biodiversity Strategy and Action Plan
NDP	National Development Plan
NGO	Non-Governmental Organization
NWDC	North West District Council
NWMP	National Water Master Plan
NWPS	National Wetland Policy and Strategy
ODMP	Okavango Delta Management Plan
OKACOM	Okavango River Basin Commission
OLG	Okavango Liaison Group
OWMC	Okavango Wetland Management Committee
PA	Protected Area
PAN	People and Nature Trust
PET	Potential Evapo-transpiration
PFA	Permanent Flooded Areas
PIR	Project Implementation Review
PMG	Project Management Group
PMTCT	Prevention of Mother-to-Child Transmission of HIV/AIDS
PPU	Physical Planning Unit
PS	Private Sector
PSC	Project Steering Committee
RCU	Regional Coordinating Unit (UNDP-GEF)
SADC	Southern African Development Community
SAP	Strategic Action Plan
SCF	Stakeholder Consultative Forum
SFA	Seasonal Flooded Areas
SNV	Netherlands Development Organization
TAG	Technical Advisory Group
TFC	Tsetse Fly Control
TIES	The International Ecosystem Society
TLB	Tawana Land Board
TOCaDI	Trust for Okavango Cultural and Development Initiative
TPR	Tripartite Review
TTR	Terminal Tripartite Review
UB	University of Botswana
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UVA	University of Virginia
VDC	Village Development Committee
VTC	Village Trust Committee
WARFSA	Water Research Fund for Southern Africa
WCMP	Wildlife Conservation and Management Programme
WMA	Wildlife Management Area
WNPA	Wildlife and National Parks Act

WWF World Wild Fund For Nature

SECTION I: ELABORATION OF THE NARRATIVE

PART I: SITUATION ANALYSIS

Context

Environmental Context

1 Botswana is an arid, land-locked country lying within the greater Kalahari drainage basin: an endorheic (i.e. with no outflow to the sea) depositional basin lying between 900-1000 m above sea level. Soils are formed from fluvially re-worked aeolian sands, and are generally nutrient poor and unsuitable for arable agriculture. Low-lying areas contain large saline pans formed through the evaporative concentration of groundwater, while most of the remaining area consists of open savannah and woodland. There are only a few permanent rivers, located in the northern and Eastern sections. Two perennial rivers, the Okavango and the Chobe, originate in the Angolan highlands and flow into the country from the north, while a series of seasonal rivers flow East out of the country into the Limpopo basin from an eastern watershed. Water inflows from the west and south are ephemeral and sporadic. There is a water balance deficit in all months: Botswana's mean annual rainfall varies from 250 to 600 mm, while potential evapo-transpiration (PET) is in the order of 2000 mm yr^{-1}. Rainfall occurs mainly in the summer, falling almost entirely between October and March. Most surface water is quickly evaporated (owing to the high PET), such that surface water in winter is only found in perennial rivers and their associated permanent wetlands. Wetlands occur primarily in the perennial riparian systems of the Okavango and Chobe Rivers, the ephemeral rivers of the eastern hardveld, and in the vast pan and fossil river systems of the Kalahari. The latter include the saline Makgadikgadi Pans and the extensive pan systems of the Bakalahari Schwelle. A map of the country's wetlands is presented in Annex 1.

2 The perennial Okavango river (Maps 1&2, Part 5 of Section IV) forms the Okavango Delta in Northern Botswana, and is the country's largest wetland. The Okavango river basin covers 192,500 km^2, with the bulk of this constituting the catchment in Angola; the river traverses Namibia's Caprivi Strip, and drains into the arid north-west of Botswana. Entering Botswana, the river runs a relatively straight course for 100 kms through papyrus-dominated swamps (known as the Panhandle), before forming a network of distributary channels that form the Delta proper. Old aeolian and fluvially re-worked uniform fine-grained sands, characteristic of the Kalahari system, underlie the majority of the basin. The nutrient status of both soils and waters is low. Rainfall decreases from about 1200 mm/a in the catchment to about 470 mm/a in the distal parts of the Delta. The Delta consists of a perennially flooded core, varying in size between 2000 to 3000 km^2 and a seasonally flooded peripheral zone, which varies from about 4000-8000 km^2. Mean annual inflow is in the order of 9.4 billion cubic metres. Outflow from the distal distributaries is between 2-3% of inflow, with the bulk of water loss being through transpiration from floodplain and riparian vegetation. The Delta is an alluvial fan characterised by low gradients (1:3600) sloping away from the apex in all directions. Sediment transport is primarily via bedload, and rates are in the order of 170,000 tonnes/annum[1]. Aggradational processes in the fan apex result in re-direction (avulsion) of the primary flow path with a cyclicity in the order of 100-150 years (McCarthy et al, 1992). In the 1800s, primary flow was along the western distributaries towards Lake Ngami; at present, primary flow feeds the eastern distributary system, with central and western

[1] Mendelson and el Obeid, 2004.

systems being fed largely by over-bank spill, and therefore exhibiting greater seasonal fluctuation in volume[2].

3 This wetland plays a central role in the ecology of Northern Botswana. It also provides important natural resources and ecological services, including fish, building and craft materials, water and grazing lands as well as the environment for a lucrative eco-tourism industry (photo safaris and hunting). The Delta is a major reservoir of biodiversity within the arid savannah environment. The great distance of the Okavango's headwaters from the Delta creates a six-month delay between rainfall in the catchment and the arrival of floodwaters in the Delta, such that peak inundation coincides with the dry season. The Delta thus provides critical water, forage, and other resources for wildlife, livestock, and humans at a time when they are scarce elsewhere.

Socio-economic Context

4 In Botswana's arid landscapes, wetlands constitute critical resource pools for people at both subsistence and commercial levels. While only 4% of Botswana is wetland, sustainable use of wetland resources is critical for economic growth. Wetlands provide perennial water sources for livestock and domestic household supply, in addition to the ecological functions of water storage, filtration and habitat provision for water dependent plants, birds and animals --utilised for consumptive or productive purposes by communities.

5 The Okavango Delta is the primary resource for all economic activity in the Ngamiland District. The primary production sectors in the District are tourism, fisheries, water and agriculture. Most people in the District live in the larger towns of Maun (44,000), Gumare (7,000), and Shakawe (7,000). The population within the Okavango Delta wetland itself is very sparse, consisting of less than 3,000 indigenous people. The ethnic composition of communities living on the Delta's periphery is very diverse. The nature of livelihood practices varies ethnically and geographically; for instance, the Hambukushu practice rain-fed arable farming in the Delta Panhandle and Etsha areas; the Bayei are fishers of the Panhandle's channels and farmers of the floodplains; the OvaHerero are livestock farmers to the south and southwest of the Delta; and the River San practice wildlife hunting, arable agriculture and fishing (Murray 2005). Although most people live on the Delta's periphery, an estimated 80,000 people rely to varying degrees on its wetland resources as part of their household economy (Bendsen[3], pers. comm.). While there is extensive financial poverty[4], people living within and around the wetlands enjoy a subsistence affluence. It is estimated that the Okavango Delta ecosystems supply veldt products, fish, rangelands for livestock, and water and nutrients for malapo and dryland agriculture that contribute as much as US$ 1,200 per household in imputed income per annum (Murray 2005).

6 Water: Sector activities are currently focussed on abstraction for village water supply, monitoring and biological control of alien aquatic invasive plants, and blockage clearing. Water is currently abstracted on a limited scale from the Okavango main channel to supply villages along the eastern and western Panhandle, and along the west as far as Gumare. Total use amounts to ~2.7×10^6 m^3/annum (ODMP 2004), or ~0.03% of Mean Annual Inflow (MAI). Water supply for Maun comes from shallow groundwater dependent on regular recharge from Delta flooding. Current water demand in Maun is estimated at 2.08×10^6 m^3/annum (WRC, 2002), rising to a projected demand of 4×10^6 m^3/annum by 2015.

7 Tourism: Tourism is well established in the Okavango, constituting the largest economic activity in

[2] This periodic avulsion and the consequent re-distribution of flooding regimen is a critical ecosystem process.

[3] H. Bendsen is a Research Fellow in Land Use Planning at the University of Botswana's Harry Oppenheimer Okavango Research Centre in Maun.

[4] 47.3% of households earned a monthly cash income of less than BWP500 per month, and 32.4% earned between P500 and P1000 a month (these income figures are significantly lower than the national average, reflecting a lower level of formal sector employment opportunities). Only 48.7% of household heads were self-employed or employed in the formal sector (a high level of self-employment at 21.2% of households indicates high reliance on natural resources for economic survival, particularly as the self-employed include fishing, wood carving and veld product sectors). Source ERHIP 2001 (exchange rate: US$ 1= BWP 4.6 in 2005 prices)

the District[5], with an annual turnover in excess of US$200 million. Lodges, most of which are in Controlled Hunting Areas zoned for photographic use, provide approximately 1,800 beds in the Delta. There are 4 basic models of tourism operation in CHAs: i) multiple use (hunting is permitted) or ii) photographic use by commercial lessee, and iii) multiple or iv) photographic use by local communities. In areas zoned for commercial use, CHA leaseholders must submit development proposals as part of the tendering process, and are granted exclusive rights to commercial tourism within a CHA for a 5-year lease renewable for 3 terms. In areas zoned for community use the incumbent community must register an appropriate authority (generally a trust) for management of resources and finances. Under present conditions, tourism operations in community CHAs are often sub-leased to a commercial operator, with rentals accruing to the trust. In community multiple use CHAs, benefits from hunting are realised either through subsistence off-take or selling "trophy" animals on their quota to a commercial safari hunting operation.

8 Community-based tourism is a fast-growing sector, although it is still in the early stages of development. In Ngamiland and Chobe Districts, 14 registered Community-Based Organisations received revenues from joint venture agreements of more than BWP7 million (~US$1.4 million) in 2003 (Arntzen et al 2003). Community based tourism is currently practiced in seven of the CHAs in the Okavango WMA that have been designated for community use. Use of these areas is conditional upon the development of the appropriate institutions for management (usually a Trust). Development of community based tourist activities is proceeding at varying rates under two basic models: i) sub-leases of tourism rights and wildlife quotas to the private sector; ii) development of tourism infrastructure and activities by the communities themselves. Development of the latter is constrained by limited business management skills within community-run enterprises.

9 Fisheries: The fisheries sector consists of 3 main activities: subsistence, commercial and recreational fishing. Most fishing activities are concentrated in the perennially flooded areas of the Delta, with the exception of some subsistence and commercial fishing, which may be undertaken as an opportunist activity in the distal seasonally flooded parts. Recreational fishing is primarily from motor boats in the main channels and lagoons, using rod and line; commercial fishing is carried out using regulated mesh-size gill nets, and is concentrated in the Panhandle, although intensive opportunistic fishing of the parts of the seasonal swamp may be done at high flood; subsistence fishers use a wide variety of traditional and modern gear. Fish are an important food source at the subsistence level, with the most frequently consumed species being tilapia and sharp- and blunt-tooth catfish (Arntzen, 2005). The primary preferred target for commercial fishers is tilapia, followed by catfish and tigerfish (a distant third) (Mosepele pers comm), while recreational anglers target tigerfish and tilapia (Arntzen, 2005). The annual catch of the fishery (all sectors) is estimated at 500-800 tonnes (Mosepele, pers comm[6]), with a commercial value of US$ 1.3-2.1 million (using local prices).

10 Natural resource use: Subsistence use of natural resources from the Okavango still provides an important contribution to the household economies of most people living in and around the Delta. Average household use of natural resources ranges between 33 to 62 percent in Delta-area villages (Murray, 2005). The most significant uses are basket making (using palm leaves), the collection of thatching grass and reeds for the construction of homesteads, and wood for fuel (Murray, 2005). Edible plant materials, wild honey, and medicinal plants make smaller contributions to Delta household economies (Murray, 2005).

11 Agriculture: The agricultural sector is dominated by subsistence practices, as there is a limited export market for meat due to the endemic foot-and-mouth disease in Ngamiland, and crop production potential is limited by soil quality and distance to market. Two types of cultivation are practised in North-West District: dryland (rain-fed), constituting 84%, and molapo (flood-recession), by 16% of farmers in the District (Kgathi, 2002)[7]. The latter is carried out primarily in the peripheral seasonally flooded zones of the Delta, particularly where the start of flood recession coincides with the start of the rainy season. This is a low-impact, low

[5] A detailed economic analysis of land use options in Ngamiland (Barnes et al 2001) concluded that tourism in the heart of the Delta showed the greatest economic returns, whilst in the periphery of the Delta, community based resource use combined with limited traditional livestock keeping was the most sustainable and profitable land use.
[6] Mr K. Mosepele is the Research Fellow Fisheries at the Harry Oppenheimer Okavango Research Centre.
[7] Figures cited are for 1998

investment farming system, which can produce good yields in favourable years. Subsistence arable agriculture has declined in economic significance in Ngamiland in the last 3 decades, as extended drought periods and unpredictable flooding extent make investments in crop cultivation very risky. Alternatives include collection of veldt products, livestock rearing, fishing and, increasingly, wage employment (mainly from the tourism industry). There are 2 irrigated commercial farms in the Panhandle. Livestock farming in the District is similarly affected by climatic variation, but also by the need to control vector-borne diseases. Maintenance of a livestock-free zone through a system of cordon fences surrounding the Okavango and Kwando WMAs occurs as part of the National Foot and Mouth Disease control programme. The livestock area of Ngamiland constitutes a buffer zone between the Okavango Delta in which foot and mouth disease is endemic in wildlife and the beef exporting zones to the east and south, where livestock is produced for overseas export markets.

Global Significance of Biodiversity

12 The Okavango's sedimentary and fluvial characteristics and its variable flood regime combine to create a complex mosaic of landforms in the Okavango Delta, which results in unusually high Beta diversity, characterised by the juxtaposition of numerous habitats. The area supports extraordinary concentrations of wildlife, birds, fish and invertebrates[8], which include aquatic and water-dependent terrestrial fauna. The Delta is the core of the largest Ramsar-protected Wetland of International Importance, and is a major part of the Zambezian Flooded Savannahs Ecoregion, one of WWF's top 200 ecoregions of global significance.

13 The area is an important refuge for terrestrial and water bird species, with 448 recorded species. Two resident species, the Wattled Crane (*Burgeranus carunculatus*) and the Delta near-endemic Slaty Egret (*Egretta vinaceigula*), are globally threatened. The Okavango populations of both these species are the largest in the world. The Okavango Delta is listed as one of 12 Important Bird Areas (IBA) in Botswana. The Delta's habitat also supports extraordinarily high numbers of large mammals, particularly elephant, and some of the largest remaining populations of the endangered African wild dog (*Lycaon pictus*) and cheetah (*Acinonyx jubatus*). The area is also a stronghold for the Sitatunga antelope (*Tragelaphus spekii*), the hippopotamus (*Hippopotamus amphibius*) and the Nile crocodile (*Crocodilus niloticus*). The flora includes 208 aquatic and semi-aquatic species, 675 herbs and grasses and 195 woody species. There are 71 species of fish, of which *Oreochromis andersonii*, *O. macrochir*, *Tilapia rendallii*, *Clarias gariepinus* and *C. ngamensis* have potential for aquaculture (Mosepele, pers comm.). Table 1 details the diversity and status of Delta fauna and flora by class. The state of knowledge on invertebrates, particularly insects, remains poor.

Table 1: Okavango Delta Species per Class.

Group	No. species	Potential indicator spp	Keystone spp.
Vascular plants	1046 420 wetland	- -	Papyrus, riparian trees, reeds
Mammals	122	Red lechwe, Cape buffalo	Elephant, hippo, impala
Birds	444	Wattled crane, Slaty egret	
Reptiles	64	-	Crocodile
Amphibians	33	-	
Fish	71	-	Clarias, tigerfish
Odonata	94	-	
Butterflies	124	-	
Molluscs	22	-	

Threats, Root Causes and Barriers Analysis

Threats and Root Causes to Okavango Wetland Biodiversity

[8] The flood wave pushes into the seasonally flooded parts of these wetlands in the dry winter season, triggering a large pulse in floodplain vegetation production. This growth, combined with the presence of abundant drinking water, sustains large herds of mobile grazing mammals in the wetlands during the dry winter months. The herds disperse into the hinterland when the rains start.

14 The Okavango Delta is the most bio-diverse ecosystem in Botswana. This level of diversity has remained relatively unchanged over the past century due to relatively low levels of human and associated livestock disturbance (tsetse fly-borne trypanosomiasis has been a major restricting factor). This situation is now set to change due to the gradual intensification of natural resource use. This analysis describes the baseline scenario in relation to threats to biodiversity conservation from the major production sectors in the Delta region. Threats and root causes for three sectors (water, tourism and fisheries) that directly impact the wetlands proper (see Part 5 of Section IV) are further chronicled in Section IV, Part 4, with a summary of the determinants.

15 Water: Water abstraction is currently occurring on a limited scale from the Okavango main channel to supply villages along the eastern and western Panhandle, and along the west as far as Gumare. Amounts being abstracted are ~$2.7x10^6$ m^3/annum, or ~0.03% of Mean Annual Inflow (ODMP, 2004).

16 The Okavango has a total inflow into the Delta of 12.6 km3, approximately three quarters of which is received from catchment areas North of the Delta, particularly in Angola. The current rate of abstraction upstream of the Delta is estimated at only 0.022 km3 for the river as a whole, or 0.23% of the inflow. The human population density of the catchment is extremely low, with the exception of some areas on the northern fringes, and along sections of the river in Namibia. Water demand is expected to grow, particularly in Namibia. However, Namibia has identified a number of more cost effective alternatives for meeting its water needs, including the injection of surface water collected on the central plateau into under ground aquifers to reduce evaporative losses. These investments will reduce the threats to the Okavango River from water harvesting. In the longer term, there is a need to institute a joint management scheme to ensure that water demands are balanced across sectors, and tke into account environmental factors. However, the need remains to establish an economic reserve of water needed to sustain wetland biodiversity in the Delta's distributary channels, taking into account the high temporal variability in stream flow.

17 There are two irrigated commercial farms in the Panhandle of the Okavango, which pose a small threat of agro-chemical spills. Further development of irrigated agriculture will pose a pollution threat to water quality, and will also increase the likelihood that alien invasive species are introduced, which is of particular concern in the Panhandle region. Water quality issues are being addressed by a Project centred around the use of macro-invertebrate indices (WARFSA/HOORC); HOORC in collaboration with the University College of London has received a grant from the Darwin Initiative to build capacity for monitoring water quality and aquatic biodiversity.

18 Channel clearing to maintain navigable passages is currently taking place in parts of the Delta, which is an activity that interferes with ecological processes, including, significantly, the channel aggradation and avulsion process which drives ecosystem renewal (McCarthy et al, 1992). This affects flood distribution within the Delta, and may result in localised species extirpations (e.g. this may remove habitat for certain species that require still water or which breed in submerged vegetation tangles). It also has unquantified effects on the distribution of sediment and flood water through the distributary system.

19 Invasive exotic plants occur in both the Okavango and neighbouring Kwando-Linyanti systems. The most significant of these are the aquatics *Salvinia molesta* and *Pistia stratiotes* and the leguminous shrub *Mimosa pigra*. Biological control agents have been introduced for the first 2 of these; *Mimosa pigra* is still an unknown quantity, although indications are that it is not yet invasive. However, this species is reportedly becoming a serious problem in the Kafue floodplains of Zambia (International Conservation Services, 2005). The highly invasive species *Eichhornia crassipes* has not yet arrived in the Delta, but more frequent boat movements between South Africa and the Delta make this a threat. Other species that could pose a threat to floodplain diversity include the cockle-burr (*Xanthium* sp.), which is already established in floodplains around Maun.

20 The hydrological role of the riparian (or wetland fringe) woodland in the Delta has only recently been highlighted (McCarthy et al, 1994) as critical in maintaining a thin layer of fresh groundwater and island soils. This is the result of transpirative pumping of groundwater by trees, which keeps the highly saline bulk water

table at sufficient depth to prevent toxic salt build-up in surface soils. Land use practices which affect the ability of the fringe wetlands to fulfil this role threaten the very ecological fabric of the Delta—if all the riparian woodland were removed groundwater levels would rise, and surface salinities would quickly reach toxic levels that would effectively prevent the re-establishment of new woodlands. Over-harvesting and destruction of vegetation by high elephant, livestock and human populations is a potentially major threat to Delta biodiversity. Increasing demands due to settlement growth, coupled with premature and indiscriminate harvesting of vegetation resources, have led to unprecedented pressure on the vegetation resources. There are no data on the effects this pressure is having on Delta habitats.

21 Tourism: Tourism has been hailed as the "new engine of growth" for Botswana's economy. The present tourism development framework in the Okavango WMA is the result of planning based upon the policy tenet of high cost, low impact activities. Carrying capacities set in the original planning were designed as a base to be monitored and adjusted; unfortunately, the capacity of regulatory agencies has been inadequate for this task, and consequently little has been learnt about the appropriate levels of use. There is strong pressure from the private sector and from government to increase earnings from the industry, and there is a risk—absent intervention—that this will be done without due consideration of the ecological impacts. Aside from requirements for EIAs to be presented for proposed developments, there are also obligations for tour operators in photographic CHAs to monitor their environmental impacts and adjust management activities accordingly. These have not been carried out and consequently no baseline data exist against which to measure change. Environmental management clauses are not codified in lease agreements for other types of operations (e.g. multi-purpose CHAs), and the Land Board does not currently have the information and capacity to enforce regulations.

22 There are no data on the effects of tourism developments on the biota. While the Government is seeking to estimate tourism carrying capacity through a "Limits to Acceptable Change" (LAC) approach, biodiversity management objectives specifically are overlooked. Adaptive management must be put in place based upon sound data. Given the limited capacities within government agencies, this can only be successful if land users (CBOs and Tour Operators) are given the responsibility to monitor impacts and adapt operations. The impacts that might arise from tourism development include disturbance of wildlife, increased potential for invasion by alien species (road, river and air transport), changes in access (through the construction of arterial roads in the interior), changes in ecology of riparian woodlands (clearing around camps, use of same islands consistently for fly camping), and indirect impacts from poor waste management.

23 All tourism activities in the Okavango are carried out on tribal land. Under the Tribal Land Act and the management and development framework for the WMA, the Land Board has undertaken to ensure that the rights of harvest for natural resource user groups are protected, while simultaneously granting exclusive rights to conduct commercial tourism activities in some CHAs. This has led to conflicts between these two groups of resource users, and poses a threat not only to the users but also to the resources themselves; such conflict can lead to perceived disenfranchisement, and a consequent decline of stewardship on the part of communities.

24 Safari hunting is a significant contributor to the revenue stream from tourism in the Delta. Quotas are set, theoretically based on calculations of sustainable off-take from census data and license returns (which are supposed to reflect the previous season's success/effort rate). However, neither the censuses nor analyses of the license returns are done regularly enough to allow realistic input to quota determination. As a result, quotas are currently decided based on the previous year's quota, unless some policy change has occurred (e.g. lions – removed; elephant - increased). Such changes are often based on political expediency rather than scientific data. Although some attempts have been made to determine trends in the populations of various species, these were based on historic data (most recent 1995, although censuses were done in 2004). Since these data were obtained exclusively from airborne censuses, cryptic and herd species tend to be undercounted. Further, the ability of the authorities to enforce off-take quotas is very limited. A limited number of commercial concessionaires are implementing monitoring programs in their lease areas, and there have been some initiatives from the BWMA to monitor some of the cryptic species, particularly predators. The economic values of these animals and the history of mistrust between the safari hunting industry and the DWNP has resulted in the outputs of these initiatives often being ignored in management and quota setting.

25 Fisheries: Current research (Mosepele, 2000) indicates that, at the system scale (including the Moremi Game Reserve, which is a no-fishing zone), the Okavango fishery as a whole is not exhibiting signs of stress from fishing activities at present; stocks appear to be primarily a function of previous and current flood size. Despite the predominance of gill-nets, both commercial and subsistence fishers also occasionally use traditional methods, such as fish drives, traps etc. However, there is no indication that these constitute a serious threat to fish diversity as they are employed under very specific conditions (Mosepele, 2000).

26 At the local scale, however the development of management strategies that sustain fish numbers and diversity are currently impeded by the system of open access to fisheries. An ongoing fish stock assessment programme based on catch recording by the Fisheries Division is in place. Currently total fish catch is in the order of 500-800 tonnes per annum (valued at US$1.3-2.1million), which at 6-10% of the standing stock is considered sustainable. However, fishing activity is localised, leading to local pressures (particularly in the Panhandle). Conflicts over access between the various user groups arise mainly when catches decline during successive years of low floods. Management of fish stocks and involvement of communities in planning and implementation of management schemes and monitoring of fish stocks forms a major component of the ODMP and is a recommendation of CI's AquaRAP surveys (Conservation International 2003). There is, however, no plan for the recognition and establishment of a system of user rights, nor for the monitoring of fish diversity. Utilisation models that address the system of open-access to fisheries are crucially needed.

27 One proposed aquaculture Project is sited in the Panhandle area; an earlier such Project was based at Guma lagoon on the western Thaoge distributary, but is now defunct. Further development of this sector is to be expected as human populations and demand for fish rise. This form of intensive fish rearing can be a useful way of using water to produce protein. It brings with it threats to biodiversity in the form of exotic fish (or crustacean) species, which may excape into the Okavango, and also (as has been demonstrated by the salmon aquaculture experience in the northern hemisphere) potentially severe problems from introducing fish pathogens through effluent leakage, to which local fish populations have not been previously exposed.

28 Fire: Fire is a commonly used management tool by rural people, and under the present conditions of open access, large areas of wetland are burnt every year, despite a total ban on the practice. No responsibility is taken for final outcomes, and no attempts at control are made. While there is no evidence that rangeland fire has caused a decline in biodiversity, there is concern that high fire frequencies throughout the Delta may shift dominance towards more fire-tolerant species over the long-term, and possibly cause the loss of fire-sensitive species. Baseline data on wildfires do not exist, and there are currently no programmes to monitor the effects of fire on Delta biodiversity. HOORC in collaboration with the Technical University of Munich is currently running a research programme on the effects of fire on wetland biodiversity, which will guide management.

29 Tsetse Fly Control: Aerial spraying of insecticides within the Delta to prevent tsetse fly spreading to livestock areas has been ongoing for several decades. A cocktail of Endosulphan and Deltamethrin was used during the 1980s in the first eradication (as opposed to control) attempt; this failed and the distribution of the fly slowly expanded until trypanosomiasis was recorded in livestock around the western buffalo fence in the late 1990s. In 2001 and 2002, the northern and southern halves of the Delta were sprayed, respectively, with the chemical Deltamethrin at 0.3 gm ha^{-1}. Short-term monitoring was carried out to establish the impact of Deltamethrin on untargeted biota. Aquatic invertebrate families declined by 25-46 % immediately post-spraying, although recovery was recorded to be good in 2003, except for shrimps. Terrestrial invertebrates (e.g. beetles) declined by up to 60 %. These taxa appear to have made a generally good recovery by 2003. The spraying programme was designed to eradicate the fly (that is, a "one-off" event), and so far appears to have been successful. Eradication of the Kwando-Linyanti population to the North West of the Okavango Delta is planned next, and if successful, will reduce the potential for future re-invasion of the Tsetse fly into the Delta.

30 Cultivation: Molapo (flood recession) farming is one of the more sustainable land-uses currently practised in the Delta. The system uses no pesticides, no chemical fertilizers, biodegradable fencing, low tillage, and flexible fallowing. This practice is not seen as a major threat to wetland biodiversity.

31 Other threats (outside the Okavango Delta study area): Livestock–wildlife interactions-Long-standing foreign market demand for beef has resulted in a large investment in the livestock industry, which has adversely impacted the diversity and abundance of wildlife in parts of Botswana. For instance, the fencing infrastructure required to meet the EU disease control regulations has cut off migration routes and caused wildlife mortality in the Kgalagadi system, while competition for forage resources between the two sectors has intensified to the detriment of wildlife. Problem animal control measures meant to reduce or minimize human-wildlife conflicts (predation of livestock, crop damage etc) have so far not been successful. However, these threats only apply to the periphery of the Okavango wetland system, as the interior (which constitutes the bulk of the wetland and is primarily WMA and PA) is declared a livestock-free zone because of the endemic Foot and Mouth disease (FMD) that is present in the buffalo populations. Conflicts between human activities and wildlife are a priority issue for the ODMP to address.

Barriers to Effective Biodiversity Conservation

32 Under the Baseline Scenario, management of water and other economically important natural resources used by the major production sectors (tourism, water and fisheries) will improve. However, the planned initiatives will not by themselves necessarily ensure that the Delta's globally significant biodiversity and unique ecology are conserved. There are several existing barriers to mainstreaming biodiversity conservation practices in the major production sectors in the Delta. These are described below—and are further charted in Section IV, Part 4.

Systemic and institutional capacity deficit

33 The Okavango Delta is a diverse, complex ecosystem with a wide range of resources and users, which are governed by multiple managers following an array of national laws, policies and guidelines, as well as regional and international conventions, agreements and protocols. The intricacy of this situation indicates that a strong coordinating body is needed to ensure integrated management planning. Although a WMA coordinator's position exists within the Land Board, it has not been effective to date, and so development, and natural resource planning and management, remains fragmented, demand-driven and ad hoc.

34 Responsibilities for biodiversity conservation are dispersed across sectors and not coherently articulated. Land use management strategies exist within the various governing institutions, from the local to national levels, but these are parochial and do not specifically address biodiversity conservation. For instance, the Moremi Game Reserve's management plan focuses on infrastructural and resource needs rather than ecosystem and biodiversity conservation, and is limited to the Park's extent, although ecological processes extend across, and are driven from outside of, Park boundaries. Guiding/policy instruments are spread amongst numerous implementing government bodies, which often fail partially or entirely to execute these policies, or do so without considering the implications for other policies or institutions. The instruments themselves may also conflict with one another and with the principles of sustainable development and resource use. At present there are no formalised mechanisms for exchange of biodiversity information between the institutions. For example, the enforcement of regulations controlling the movement of boats (Aquatic Weeds (Control) Act) requires cooperation between the Department of Customs and Excise (access through borders), the Department of Animal Health (access through Veterinary Cordon Fence gates) and DWA-AVCU. But the personnel manning borders and veterinary fences have no training nor perceived authority to check for boat movement permits.

35 Local Authorities also lack a coherent formal outreach mechanism for imparting information to resource user groups[9]. This is a barrier to the resolution of present conflicts; it prevents the necessary clarity over resource user rights, and decreases the credibility of the local authorities as effective land managers. In

[9] Within local authorities and regulatory bodies the number of staff technically qualified to collect, analyse, interpret and act on biodiversity data is often insufficient; existing staff are frequently needed to fulfil other critical duties. Institutions where this capacity exists are not currently well-incorporated into the planning and policy process. Research on the Okavango ecosystem is mostly conducted by academic institutions. There is limited interaction between researchers, users, managers and communities. Scientific findings are therefore rarely used to inform management decisions, particularly in relation to biodiversity. Baseline biodiversity data are limited and not integrated into management procedures, which inhibits the ability to understand land use impacts and detect resource and biodiversity trends.

addition, it will prevent the effective dissemination of feedback and management decision information from future monitoring of biodiversity, and the engagement of resource users in the management process.

36 A knowledge management system that ensures information to flow between researchers, resource users and managers is therefore needed. The complexity and size of the Delta ecosystem makes data collection and monitoring difficult, and there are still important gaps in our understanding of system function. Links between hydrology and ecology are still not well understood, and this is the primary support for biodiversity in the system. The development of models for linking hydrology and ecology is a critical step in acquiring the tools with which to evaluate development and climate change scenarios. Mechanisms for data collection, analysis and interpretation, and publication in an accessible form for policy and decision makers and civic society are missing, and institutional roles and responsibilities in this process are poorly articulated.

37 At the District level, enforcement of existing biodiversity conservation legislation is poor due to a deficit of capacity within the Land Board and other institutions in Ngamiland, such as ARB. This has led to a virtual absence of natural resource and biodiversity monitoring throughout the Delta, and a corresponding lack of input into natural resource and biodiversity management efforts. Regulatory personnel lack the expertise and resources to assimilate and interpret information on resource status, and to make management decisions or enforce existing regulations. In some areas, policy, legislation and regulations for biodiversity conservation are completely missing – an example here is the case of aquaculture. This is a possible new form of resource use, which has not previously required attention.

38 Public awareness about Delta biodiversity is generally low in all sectors. Public awareness of the extrinsic value of tourism is high, but there is little awareness of the relationship between human activities and biodiversity, and the concept of limiting natural resource use and growth in the agricultural sectors is not understood. This lack of awareness is apparent at all levels of society, from government through to individuals.

Resource access and property rights

39 Subsistence use of natural resources from the Okavango still forms an important contribution to the household economies of most people living in and around the Delta. An open access system is one of four types of natural resource management regimes prevailing in Botswana (Kgathi, 2002). In this system, access to natural resources is not restricted and all users (specifically subsistence users) have access to it. The Tribal Land Act of 1968 enables this open access system. This law effectively allows open access to all natural resources on tribal land, and given the low population densities of the past, subsistence off-takes have historically been sustainable. However, there is currently a tendency for individuals to over-utilise certain resources, leading to a "tragedy of the commons" situation, in which population growth and more sedentary lifestyles have led to the increasing commercialisation of resources. These factors, combined with the diffuse nature of resource management authority, cause users to maximize resource extraction for short-term gain. This is particularly relevant to fisheries in certain areas, and veldt products[10].

40 As well as potential over-exploitation, the open-access framework for resource use in the Delta frequently gives rise to conflicts over land and other resources. Disputes commonly occur among permutations of the following groups: subsistence (artisanal), commercial and recreational fishers, harvesters of reeds and other resources, commercial tourism operators, hunters and wildlife managers. This discord results in animosity between resource users, and prejudices attitudes against resource conservation. The open-access regulatory frameworks, growing commercialization and perceived disenfranchisement currently engender over-utilization of resources and practices harmful to biodiversity. A corollary issue is the lack of clarity over rights between subsistence harvesters and commercial tourism operators, as described in the section on Systemic Capacity above. This constitutes a serious barrier to security of tenure on the part of the

[10] For example, the Okavango's thriving basket-weaving industry is believed by some to be consuming the young leaves of the Mokola palm (*Hyphaene petersiana*) at an unsustainable rate (Arntzen, 2005). Reed harvesting at commercial level to supply building material for the construction boom may affect populations of the near-endemic slaty egret (*Egretta vinaceigula*), which breeds exclusively in reed beds.

tourism operator and to livelihood security on the part of the harvester. There is an unmet need for a model of cooperative management, which will build working relationships.

Technical know-how amongst resource user groups

41 There is limited know-how at the enterprise level and within local user groups to incorporate biodiversity management objectives into production practices. This barrier is relevant to the tourism and fisheries industries alike, for different reasons. Carrying capacities for tourism in different areas have yet to be conclusively established. There is limited capacity amongst tourism businesses to monitor and take steps to mitigate direct and indirect impacts on biodiversity, posing the risk that development can have unintended consequences. This is pertinent to waste management, infrastructure development and wildlife watching operations For fisheries, management practices have tended to employ traditional methods, such as gear restrictions. Spatial set asides administered by user groups would provide a means both of increasing fishery productivity while maintaining biodiversity. However, this requires information and skills not readily accessible.

Lack of Certification/Standards for Biodiversity friendly ecotourism practices

42 There are currently no environmental standards or certifications that Delta tourism operators must follow to ensure that their operations are ecologically sustainable. The Botswana Bureau of Standards and DOT formulated Botswana Standards BOS 50-3:2001 for grading and certification of hotels and related establishments, but this system merely rates establishments' facilities (number of beds, available amenities etc.) and does not account for environmental practices. In present circumstances there are no incentives or dis-incentives to operators to encourage the implementation of biodiversity-friendly practice. Regulations which apply to management of lodge sites and CHAs such as the WMA regulations, EIA, monitoring and waste management requirements of lease documents are not rigorously enforced as dis-incentives. Existing industry associations (HATAB) perceive their major role as being of promotion and marketing, not as a forum for encouraging members to comply with voluntary industry standards.

Institutional, Sectoral and Policy Context

Institutional Context

43 Regional: A tri-national River Basin Water Commission (OKACOM) was established in 1994 by the riparian countries to strengthen management of the shared water resources of the Okavango River Basin. OKACOM is responsible for ensuring that the water resources of the Okavango River Basin are managed in appropriate and sustainable ways and to foster co-operation between the three basin states in this endeavour. OKACOM consists of three commissioners from each of the basin states. These are high ranking civil servants from Government ministries that are directly involved in natural resources management. Commission members meet at least twice per year. OKACOM is in the process of developing an Integrated Management Plan for the river basin, identifying management options in each country's water sector and providing a detailed environmental assessment of each option, and outlining mitigation measures. The Integrated Management Plan will provide essential background material for negotiating a Treaty on the equitable and reasonable allocation of water to the Okavango Basin States. This will in part result in the establishment of a Permanent OKACOM Secretariat in Maun to implement and monitor the activities of OKACOM in the basin.

44 National: Botswana has a two-tier government system. The central government is responsible for developing and overseeing implementation of national level policy and legislation. Local government (or District) government is responsible for local-level policy administration and service provision (under the Ministry of Local Government). There are 10 Districts in Botswana, the Project area being located in Ngamiland District which has its administrative capital in Maun. In addition, line ministries maintain District or regional offices. Also at District level is the Tribal Administration which is responsible for administration of customary law, and functions through the *Kgotla*, a forum for village level discussion and participation. The District Council is an elected body with assigned responsibilities for the provision of social services (e.g.

health, education).

45 At the national level, the newly formed Ministry of Environment, Wildlife and Tourism (MEWT) is the government body primarily responsible for regulating the tourism, wildlife, fisheries and veldt products sectors. The MEWT's DEA coordinates Botswana's National Conservation Strategy, and is also responsible for enforcing newly developed EIA legislation, while the Departments of Tourism, Wildlife and National Parks (incorporating the Fisheries Division) and the Forestry Division administer the fields for which they are named. Agricultural matters (both arable and livestock) fall under the Ministry of Agriculture (MoA) and its Departments of Animal Health and Production and Crop Production. The Department of Water Affairs (DWA) in the Ministry of Minerals, Energy and Water Affairs (MMEWA) is responsible for the water sector. The DWA's Water Apportionment Board reviews and approves applications for water abstraction, while the Hydrology section deals with surface water issues and the Water Quality Unit oversees water quality. Other administrative responsibilities for the major production sectors are spread across various other bodies (see Table 2).

Table 2. Present central government management institutions and their responsibilities

Institution	Affiliation	Responsibilities
National Conservation Strategy Coordinating Agency	Central Government MEWT	Implement NCS; watchdog; NBSAP Development, NWPS implementation; enforce EIA legislation
Dept Wildlife and Nat Parks, Div Wildlife	Central Government MEWT	Implement legislation, manage protected areas, manage wildlife.
Dept Wildlife and Nat Parks, Div Fisheries	Central Government MEWT	Develop, regulate and manage fishery
Department of Tourism	Central Govt MEWT	Implement Tourism policy, issue tourism licenses, inspect and rate tourism facilities.
Forestry Division	Central Govt MEWT	Regulate use of timber resources
Agricultural Resources Board	Central Govt MEWT	Oversee use of plant resources; enforce fire legislation
Dept Animal Health and Production	Central Govt, MoA	Manage and implement Disease Control programmes,
Department of Crop Production	Central Govt, MoA	Develop, regulate, and manage arable agriculture
Dept Water Affairs.	Central Govt, MMEWA	Enforce Water Act, approve water rights applications, implement National Water Master Plans
Range Ecology	Dept Animal Health and Production	Develop and regulate use of grazing resources
Dept. of Tourism and Regional Planning	Central Govt, MLH	Ratify regional planning initiatives, including land use zoning

46 District-level administrative tasks are carried out by the District Administration, which includes the Council and District Commissioner's office. The Land Board is the primary agency responsible for resource management on tribal lands. In addition to local government structures (see Table 3), a number of national government departments have District offices in Maun. The Ngamiland District is the hub for MoA (Crop Production, Animal Health and Production, Forestry) in an agricultural region comprising the Ngamiland, Chobe, and (a portion of) Central Districts. The DWNP Fisheries Division and the DWA and its Aquatic Vegetation Control Unit maintain District-level offices in Maun. The DOT also has a Maun office due to the signal importance of the tourism industry in northern Botswana. The District Council also has an Ecotourism Office, which is largely confined to facilitating the development of community-based tourism ventures.

47 The Government has established a multi-sectoral management oversight committee to plan and oversee implementation of integrative wetland management strategies in Ngamiland. Known as the Okavango Wetland Management Committee, membership includes representatives from national and District

Government agencies, civil society and the private sector. Meetings are chaired by the Secretary of the Land Board.

Table 3. District- and local-level government management institutions

Institution	Affiliation	Responsibilities
District Council	Local Government	District administration
Department of Wildlife and National Parks	Regional Office	Administer parks, receive hunting license returns, anti-poaching, regulate fisheries, game relocation, problem animal control, administer compensation
Department of Water Affairs	District Office	Okavango hydrological monitoring, channel clearing, village water supply, aquatic vegetation control unit.
District Land Use Planning Unit	Local Govt - District Admin	Draft DDP's, assess and direct development initiatives
VDC	Local Govt - District Admin	Village Development Planning - input to DDPs. Day-to-day representation to local authorities
Land Board	Local Govt, MLG	Implement Tribal Land Act Conflict resolution, CHA lease administration
Department of Water Affairs Aquatic Vegetation Control Unit	Central Govt MMEWA, but based in Maun.	Implement biological control programmes *Salvinia* and *Pistia*; enforce Aquatic Weeds Control Act; administer boat registration, spraying, interzonal movement permits
Regional Agricultural Office – Forestry Div	RAO	Administer Forest Act, extension.
ARB	MEWT	Administer the Agricultural Resources Conservation Act and Herbage Preservation Act (including fire strategy development)
Village Wetland Management Committees	MEWT (NCSA), MLGL (Land Board, Council)	Enabled through NWSP, but only implemented in Okavango.
University of Botswana Harry Oppenheimer Okavango Research Centre	Semi-autonomous	Conduct independent, objective research, pure and applied; provide information service to public sector and civil society

48 A number of non-governmental bodies and private sectors operators also operate at the District level, including the Hospitality and Tourism Association of Botswana, the Botswana Wildlife Management Association (BOWMA), and CBOs representing the various communities engaged in CBNRM activities. Conservation NGOs represented in the District include KCS (Every River has its People), Conservation International;, and BirdLife Botswana. Several organisations engaged in long-term research and monitoring are also present in the Delta region, the largest of which is the Harry Oppenheimer Okavango Research Centre of the University of Botswana. Specialised research bodies include Predator Research Botswana (wild dog), 2 groups of lion researchers, and a crocodile research group. Table 4 details the main conservation agencies, CBOs, and other organisations active in the Ngamiland District, and their projects and activities.

Table 4. The main non-government conservation institutions and their mandates.

Organisation	Mandate
Harry Opennheimer Okavango Research Centre	HOORC's mission is to promote sustainable use and development of natural resources of the Okavango River Basin and other wetlands and watersheds in the Region and beyond. Due to the diverse network of interdependences that exist between physical, biological, social, legal and political factors of the river-basin, HOORC has adopted a multidisciplinary research approach and assists with environmental monitoring. The Centre stimulates environmental awareness through scientific and educational activities for Okavango residents and visitors.

Organisation	Mandate
BOWMA	BOWMA represents the interests of the hunting industry throughout the country. Its membership is open to all private hunting companies, Community Trusts involved in hunting and professional hunters at a fee of P5000.00 per annum for a concession area. The Association serves as a forum for its members on issues related to the safari hunting industry, including lobbying for development and review of policies and legislation with direct impact on the industry e.g. on areas such as hunting quota, off-take, tariffs and royalties. The Association is also engaged in issues related to environmental management and monitoring e.g. the ongoing GIS Project on hunting activities in concession areas and monitoring of trophy species.
HATAB	HATAB is an association of non-hunting private sector and parastatal companies involved in tourism businesses throughout the country. It champions the business interests of its members through lobbying for a conducive legislative investment environment. It provides an annual forum for its members at which most of the issues pressing the tourism industry are tabled. Membership to the association is by subscription which is currently (2005) standing at P1, 100.00 per annum per tourism license for small scale businesses (annual gross income <P350,000) and P3,850.00 per annum per tourism license for large operators.
Okavango Fishermen's Association	The Okavango Fishermen's Association is a legally registered organisation whose mandate is to coordinate fishing activities among its members. It convenes meetings to present and solicit ideas on the regulation of fishing, conflict resolution and setting of fishing standards for its members. The association then forwards recommendations to the Fisheries Unit of the DWNP for incorporation into fishing regulations. It also encourages a self-policing attitude among its membership. It is active mainly along the Okavango Panhandle, where issues surrounding the fisheries industry are prominent. Its membership is made up of representatives from all sectors of the fishing industry including commercial and subsistence fishermen, angling safari lodge owners and other safari operators.
Community Conservation Trusts	Management of revenues generated by CBNRM activities.
BirdLife Botswana	Monitoring of key wild birds distribution, abundance, and habitat patterns and promotion of sustainable utilisation of wild birds
KCS	Building a network of community-level informed cadres to participate in development of management activities at a basin-wide level.
CI	Promotion of the conservation of fauna and flora of the Delta through research, lobbying policy change and community development

Policy Context

49 Vision and development plans: Botswana's long-term development ambitions are captured in Vision 2016: Towards Prosperity For All. Vision 2016 identifies environment degradation as one of the challenges that needs to be tackled. Botswana has ratified a number of international environmental conventions to address this issue and the MEWT is implementing these by undertaking a number of projects, which are reflected in the 5-year rolling National Development Plans (NDP). NDP 9 specifically calls for measures to assure the responsible use of the environment, and assure environmental sustainability in the pursuit of economic growth and diversification. It also calls for the consideration of environmental costs in planning for development.

50 Natural resource policies: The National Policy on Natural Resources Conservation and Development (1990) has as its primary goals: increasing the efficiency of natural resource use to reduce negative impacts, and integrating the work of sectoral ministries and other interest groups in the management arena. More specifically the policy aims to optimise existing uses of natural resources, to diversify the rural economy to generate more jobs, and to increase the participation of civic society in managing the environment. This

policy has unfortunately been poorly implemented because it lacks legislative backing (Segosebe and Kgathi, 2004). The policy also does not elaborate implementation arrangements (i.e. for supervision) at the local level.

51 The Department of Tourism in the Ministry of Environment, Wildlife and Tourism (MEWT) administers the growing tourism sector. The policy framework is the Tourism Policy (Paper No. 2) of 1990, which first laid out the "high-cost, low volume" principle that has guided development to the present. The Botswana Tourism Master Plan (2000) was designed "to build on the strengths of the exclusive wildlife/wilderness experience". More recently, Botswana has adopted ecotourism as a philosophy of tourism development (Botswana National Ecotourism Strategy (BNES) of 2002) in which ecotourism is defined as "responsible travel to natural areas that conserves the environment and sustains the well being of local people".

52 The Wildlife Conservation Policy of 1986 governs the sustainable utilisation of wildlife resources, as well as the conservation thereof. The policy should be read in conjunction with the Wildlife Conservation and National Parks Act of 1992, which provides for the conservation and management of the wildlife of Botswana and gives effect to CITES and any other international conventions to which Botswana is party to. It also provides for the establishment, control and management of national parks and game reserves, wildlife management areas, controlled hunting areas and for matters connected therewith.

53 The CBNRM Policy guides the implementation of Community Based Natural Resources Management. CBNRM is a development approach that fosters the sustainable use and conservation of wildlife through community participation and the creation of economic incentives (Segosebe and Kgathi, 2004). This is realized through the formation of Community Trusts, which are legally registered entities mandated to ensure access to and management of wildlife by rural communities (Kgathi et al, 2004). Their legal status is backed up by a deed of trust which empowers a Board of Trustees to enter into legal agreements with business partners, on behalf of the community and to manage funds accrued to the trust thereafter in order to benefit the community. Normally, the community is initially mobilised by DWNP or by an NGO, which would bear the costs of mobilisation as well as costs related to the development and legal registration of the deed of trust.

54 Historically, the fish resources of the Okavango Delta have been managed under the national Agricultural Policy (revised in 1991), which did not specifically address fisheries management. Lack of a specific national fisheries policy made it difficult for the sector to develop coherently. With the recent movement of Fisheries from MoA to the MEWT, a revised Wildlife Policy is being drafted, which incorporates fisheries issues. In view of challenges arising from global developments it is felt that the country now needs a sector specific policy for fisheries and aquaculture development. The new policy will be aligned with the 1995 Code of Conduct for Responsible Fisheries developed by FAO and the SADC Protocol on Fisheries signed in 2001. In the absence of a sector-specific policy, the Fisheries Section has historically pursued an in-house strategy that aimed at providing high quality animal protein and employment to the lower income bracket to which most fishermen belong. The key activities of the Section in the past have included:

- Providing training to upgrade local fishing skills and fish handling/processing technology;
- Utilizing available financial credit schemes offered by both the government and donor agencies;
- Developing market infrastructure for fresh/frozen fish;
- Strengthening the Section's extension service capacity;
- Promoting fish acceptance and consumption through cooking demonstrations.

55 Development of water resources in Botswana is governed by National Water Master Plans; the last (1990-2020) is currently being updated. The emphasis of the last plan is primarily on meeting current and projected water demand through the development of surface and groundwater resources. The Plans address environmental aspects, the current plan making recommendations regarding EIS' and EIA's of proposals for water development. These recommendations have largely been fulfilled by the development of national EIA legislation. However, specific guidelines for individual wetlands including the Delta have yet to be crafted.

56 Physical planning: The Decentralisation Policy (1993) of the Ministry of Local Government and Housing is aimed at devolving responsibilities such as land allocation and management, water supply, health

and sanitation to District authorities. The aim is to improve the effectiveness of development interventions. The National Settlement Policy was accepted by Parliament in 1998 to promote spatially equitable growth. Its objectives include the provision of guidelines for developments in human settlements, rationalisation of land uses, promoting the conservation of natural resources for future generations, and reduction of the rate of urban migration.

57 Wetlands and biodiversity: The Government signalled its commitment to the conservation of biodiversity in ratifying the Convention on Biological Diversity (1995). The National Biodiversity Strategy and Action Plan (NBSAP) has recently been completed. Strategic priorities identified in this Plan include[11]:

- Improve understanding of biodiversity and ecological processes;
- Improving availability and access to biodiversity data and information and promotion of information exchange;
- The development of ecosystem management approaches to assure maintenance of long-term ecosystem functions;
- The integration of biodiversity considerations in national land use planning;
- The creation of an enabling environment for a cross-sectoral approach to national biodiversity conservation;
- Measures to ensure active public participation in biodiversity-related activities and decision making processes;
- Ensuring the sustainable use of wetlands and the establishment of wetland management systems.

58 The Government has prepared a National Wetland Policy and Strategy (NWPS[12]), which is in final draft form awaiting ratification by the Cabinet. The policy provides the contextual and institutional framework for management of the country's key wetlands. The mission statement is as follows: *To promote the conservation and use of Botswana's wetlands in order to sustain their social, economic and ecological functions and benefits for the present and future well-being of the people*. The policy recognises that wetland habitats are critical for the conservation of biodiversity. Major targets of the NWPS include *i) scientific assessment: baseline information, research and monitoring, identification of current levels of natural resource use; and ii) development of management plans and conservation/sustainable use measures "for principal wetlands*". The Strategy adheres closely to the twelve principles of the CBD Ecosystem Approach, and specifically recognises the importance of the contributions of wetlands to the tourism, water, fisheries and agricultural sectors in and around wetlands. Integrated Wetland Management Plans are to be developed under the NWPS for the major wetlands of national importance. Recognising the importance of the Okavango in both economic and ecological terms (as a Ramsar site), this wetland has been selected as the first for which an IWMP is developed. The Okavango Delta Management Plan (ODMP) is a multi-sectoral planning and management exercise involving government ministries and their local agencies, civil society, the private sector, NGOs, CBOs and academic institutions. The main focus of the ODMP is on hydrology and land use. Much effort is being put into ensuring cross-sectoral integration and the establishment of local management structures.

59 HIV/AIDS: Nationally, it is estimated that 17.1% of the adult population is infected with HIV, the worst affected group being the age group 25-49 years with a prevalence rate of 34.4% (Botswana AIDS Impact Survey Results II, 2004). The Ngamiland District shows a prevalence rate of 32.2% for the 25-49 years age group. The National Aids Policy and the Second Medium Term Plan for HIV/AIDS advocate an expanded multi-sectoral response to HIV/AIDS. As such, three major response programmes are operational at the District level: the Prevention of Mother-to-Child Transmission of HIV/AIDS (PMTCT); Antiretroviral Therapy (ARV)[13]; and the Community Home Based Care (CHBC) established in 1995 in response to increased illnesses due to HIV/AIDS. Ngamiland has formed a Multi-sectoral Aids Committee, under the

[11] However, many of the actions identified to achieve the above strategic objectives are currently not well integrated into NDP 9, for the years 2004-2009.

[12] Page 11, Botswana Wetlands Policy and Strategy: Issues for National Consultation Report. National Conservation Strategy Agency, Gaborone. 1999.

[13] The ARV programme was introduced in Botswana in 2002 and Ngamiland District was one of the first beneficiaries-currently Maun and Gumare have 1556 patients on ARV (Botswana AIDS Impact Survey Results II, 2004)

District Commissioner's office, comprised of members from government departments, NGOs, and businesses. It has formulated a District HIV/AIDS Strategy and Action Plan and secured funding for its implementation from the Bill and Melinda Gates Foundation and ACHAP. The Revised National Policy on Destitute Persons caters for destitute people, and this includes people suffering from chronic health conditions such as HIV/AIDS. The policy is in place to ensure that people who are destitute are provided with assistance to improve their welfare. And as such all HIV/AIDS patients and those on ARV treatment are provided with food baskets and monetary allowances on a regular basis. This is aimed to improve the success rate of the HIV/AIDS programs in place.

Sectoral Context-Land Use Zoning

60 National Development Planning in Botswana is a "bottom-up" system, predicated on the District Development Planning process, in which District Land Use Planning Units (DLUPUs) undertake most of the physical planning functions of Government. These units are comprised of technical officers from District administrative bodies (DoL, DoD, DPP), the Land Board (Secretary) and relevant line ministries (LUO from Agriculture etc). Land use zoning and planning is required by the Town and Country Planning Act and the Tribal Land Act, and must be initiated by the Land Board. Overall, this is a well-established and functioning system, but it does not extend to the level of actual management based on monitoring, evaluation and adaptation.

61 Nationally, the majority of land is Tribal Land (71%), with extensive areas of State Land (25%), which includes Protected Areas (PAs) and Forest Reserves. Freehold land constitutes approximately 4% of the total land area. 17% of the country is zoned as Protected Area, and a further 21% is zoned as Wildlife Management Area (WMA). The primary form of land use in WMAs is wildlife-oriented production, and activities are subject to the WMA Regulations (2000), which allow for both consumptive and non-consumptive uses. While the Okavango Delta system is almost entirely within a WMA, this level of protection does not extend to the other major wetland systems in Botswana. Only ~37% of the Makgadikgadi Pans complex is within a WMA (including 9% within Makgadikgadi Pans Game Reserve), and that excludes the ecologically critical Nata River (with only nominal protection as Nata Sanctuary) and Mosetse deltas.

62 The WMAs are sub-divided into Controlled Hunting Areas (CHAs). The CHA is an administrative unit used throughout the country to facilitate wildlife management. These are lease-able units in which both consumptive (e.g. trophy hunting) and/or non-consumptive based (e.g. photographic safaris) commercial wildlife operations can be undertaken. Off-take quotas are set for each multi-purpose CHA annually. Approximately 44,778 km^2 of Ngamiland District (or approximately 40% of the total area) is under protection as a Wildlife Management Area (WMA). Of this, the Okavango WMA is 18,120 km^2, including the Moremi Game Reserve at its centre. The current designated land use in each area is shown in Map 3, Part 5 of Section IV. Table 5 below shows the different categories of CHA use and their extent within the Okavango Delta region.

Table 5. Extent and categories of use of CHAs within the Okavango

Type	Activities	Quota recipient	Area within Okavango WMA
Commercial Multi-purpose	Consumptive wildlife, photo-tourism use	Leaseholder	6795 km^2
Commercial Photographic	Non-consumptive photographic use	N/A	857 km^2
Community Multi-purpose	Consumptive and photo-tourism use	Community Trust	4411 km^2
Community Photographic	Non-consumptive photographic use	N/A	1176 km^2
Moremi Game Reserve	Non-consumptive photographic use	N/A	4888 km^2

63 At the national level, management plans for the PA network tend to have been developed in isolation, with little consideration to ecological linkages. The Moremi Game Reserve is, however, embedded within the Okavango WMA, and thus wildlife may move freely between the surrounding CHAs and the Reserve (Map 3, Part 5 of Section IV). There is also significant wildlife movement between it, the Kwando WMA to the north-west (7,818km^2), and Chobe National Park (~10,000km^2), which lies outside the Delta to the north-east. This Park is an important source for wildlife moving into the Delta, and is a crucial dry season refugia for wildlife.

Legislation context

64 Legislation relevant to environmental management, biodiversity and conservation is spread across many sectors. Wildlife, birds and fish are covered by the Fauna Conservation and Wildlife and National Parks Acts. Plants fall under the Herbage Preservation Act, the Aquatic Vegetation Control Act and the Forest Act, among others. Use of natural resources is regulated under the Tribal Land Act. Activities in the Wildlife Management Areas are regulated through the WMA Regulations, which are enabled by the Wildlife and National Parks Act. There is no unifying legislation purposely addressing biodiversity conservation objectives.

65 Tourism is regulated through the Tourism Act (1992), as amended subsequently through the Tourism Regulations (1996) and the Tourism Licensing Order of 1996, which enables the granting of licenses to private vendors to carry out tourism-related business. The latter is particularly relevant in the context of the leasehold concessions in the Okavango and Kwando WMAs, in which a valid tourism license is a pre-requisite in order for private companies to tender for CHA concession areas. Other significant legislation that is brought to bear on tourism activities include the WMA Regulations (under the WNP Act) and the Tribal Land Act. All activities within WMAs must be conducted in line with the scope of the WMA Regulations.

66 The Fisheries sector is currently regulated through the Fish Protection Act of 1975, although this is being reviewed because fisheries now fall under the Department of Wildlife and National Parks. There are no regulations that dictate how Okavango Delta fisheries should be managed, although recommendations concerning mesh size for commercial fishing are made by the Fisheries Division. Fishing is not permitted within protected areas under the WPNP Act and is therefore disallowed in Moremi Game Reserve; no provisions are made for the delineation of specific areas for exclusive rights within the framework of this legislation. However, provision can be made for proxy allocations of user rights under the Tribal Land Act.

67 The Water Act (1968) governs (among others) the "formal rights to use or impound water or to discharge effluents" into waterways. It establishes the Water Apportionment Board as the licensing authority and prescribes its constitution, powers and duties. It also covers the question of the right to alter or change hydrology through changing channel courses, clearing of blockages, etc. Issues relating to aquatic weeds are governed by the Aquatic Weeds (Control) Act (1971), which was amended in 1986 to include the registration of boats and related equipment, and permitting the inter-river basin movement of such boats or equipment.

68 The Tribal Land Act regulates the use of all land-related resources on tribal land, and enables the Land Boards, which are the primary agency for its implementation. It is under this Act that the leases for controlled hunting areas, and traditional rights of access to areas to gather natural resources for subsistence use are enabled. However, the extractive use of plant resources on tribal land for subsistence purposes is also controlled by the Agricultural Resources Board under the Herbage Preservation Act, and the Forestry Division under the Forest Act. Similarly, fishing is regulated under the Fish Protection Act of 1975, while fishing in PAs is regulated by the Wildlife and National Parks Act. In the Project area, all land is tribal land.

69 The Waste Management Act provides for the planning, facilitation and implementation of advanced systems for regulating the management of controlled waste in order to prevent harm to human, animal and plant life, as well as to minimise pollution of the environment and to protect natural resources. This Act is applicable to land use planning for the reason that there is need to plan and zone land suitable for waste

disposal sites as well as to zone land for different land uses in a manner that provides an enabling environment for the control (including collection) of residential, industrial, hazardous and clinical waste[14].

Stakeholder Analysis

70 A complete list of stakeholders and an accompanying participation plan is provided in Section IV, Part 3. The Project team undertook extensive consultations with interested parties through a series of presentations, interviews, and workshops during the preparatory phase. Presentations were made to the Sub-District CBNRM forum and the Sub-District Wetlands Management Committee, which represent a wide range of stakeholders. An ecotourism specialist was engaged to systematically interview stakeholders in the tourism sector. The Project team held workshops with community-level resource users, resource managers (government institutions), and tourism operators during the design phase. These wide-ranging consultations were undertaken to ensure that: stakeholders at all levels are aware of the Project and its objectives; stakeholders assist in the identification of threats to biodiversity conservation and their root causes; existing monitoring and mitigation strategies are acknowledged and integrated into the Project; and differential stakeholder capacity needs across different production sectors are accommodated

Baseline Analysis

71 Under the baseline scenario, defined as business-as-usual, there are a number of activities implemented by government and non-governmental institutions aimed at improving management of natural resources used by the major production sectors. These are an important base on which the Project is nested.

Table 6. Baseline Activities

Category	Baseline Activity	Organization	Gaps
Enabling environment	• Coordination of land use planning and zoning within the District	DOL	BD objectives are currently not integrated in the planning system
	• Preparation and control of developments and detailed lay-out plans for villages in the District. • Execution of District settlement strategy, settlement development plans and detailed village lay-out plans • Provide advisory services to the Tawana Land Board on issues relating to land management and planning.	DPP	The population in the Okavango Delta is rapidly outgrowing current plans for village development and service provision centres. Currently there are only two villages (Maun and Gumare) in the District with prepared development plans. Villages on the periphery of the panhandle and in the Delta (e.g. Shakawe, Seronga, Jao, Xaxaba, Sedibana and Thabazimbi-see Annex 1), which may impact negatively on the Delta's ecological processes, lack development plans. While these are under preparation, they do not accommodate biodiversity objectives.
	• Administration of wildlife conservation and utilisation policies and regulation, particularly the fisheries Act. • Development of fisheries regulations	DWNP	No up-to-date regulatory instrument for the fisheries industry. The only piece of legislation available in the country is the fisheries Act of 1975, which is now redundant. Furthermore, this Act was developed when the fisheries section was under the Ministry of Agriculture and hence must now be aligned to the Wildlife and National Parks Act and other relevant legislation under the DWNP.

[14] The Act delegates a number of roles to the local authority for waste management. A local authority is defined in section 2 to mean a city, town, District council or a land board. The local authority is required under section 9 to produce a local waste management plan covering the area under its control.

Category	Baseline Activity	Organization	Gaps
	• Tribal land use management: including effective control of the utilization, distribution and maintenance of land in tribal land.	TLB	The TLB's annual income from rental of concession areas is in the range of P6.9 million (about US$1,500,000), and little of it is re-invested in the management and monitoring of natural resources in these concession areas. There is no senior position in the TLB's current establishment responsible for environment management.
Water Sector	• Monitoring of water abstraction and establishment of formulae and management agreements for sharing water at the basin level, in order to optimise development and environmental objectives equitably	OKACOM	The need still remains to establish the "ecological reserve" of water necessary to sustain wetland BD and ecological processes. Modelling that allows ecological responses to be predicted from hydrological interventions needs to be developed.
	• Biological control and monitoring of *Salvinia molesta*. • Monitoring of indigenous and alien invasive vegetation species in the Okavango Delta. • Unblocking of channels to aid flood flow • Data collection and monitoring of climate and flood regimes within the Okavango Delta • Monitoring of the Okavango flood regime (flow volumes, sediment load, etc) • Record and maintenance of records on climatic parameters within the Okavango Delta • Ground water surveying throughout the District • Water reticulation to selected villages in the District	DWA	Limited hydrological modelling due to lack of spatially distributed data such as evapo-transpiration, ground and surface water flows and meteorological data. This is worsened by the lack of understanding of the linkages between hydrology and ecological processes. Difficulties to keep up with channel blockages due to spread of indigenous and exotic invasive species. Capacities to identify risks and abatement actions to control aquatic invasive species remain weak.
Tourism sector	• Marketing of the tourism industry • Lobbying for policy review and development creating an enabling environment for investment in the tourism industry • Policing members to ensure their commitment to agreed code of conduct and operating standards	HATAB BWMA	Promotion of business interest with little emphasis on BD conservation practices and ethics among members. Interest in reinvestment into BD conservation not encouraged among members.
	• Technical support to community managed tourism ventures as well as community/private sector joint ventures • Collection of royalty fees due to the NWDC from concessionaires	NWDC-TOURISM	Limited capacity amongst community eco-tourism ventures to monitor and manage the adverse ecological impacts of tourism operations.

Category	Baseline Activity	Organization	Gaps
	• Control of solid and liquid waste disposal in the District. • Development and implementation of the District waste management strategy	NWDC-EHD	The vastness of the Okavango Delta and the inaccessibility of some camps within the Delta, coupled with limited resources within the EHD, forces the Department to restrict its waste management efforts to gazetted villages only. In view of this, tourism companies operating in the Delta are required to bring out to designated dumping sites all of their solid waste. This, however, is not monitored. Liquid waste management is essentially left to the discretion of the tourism company.
	• Implementation of the national tourism development master plan • Promotion and marketing (international and national) of the tourism industry • Training and development of tourism labour force • Development of Limits of Acceptable Change concept against tourism activities for the Okavango Delta	DOT	Carrying capacities in concession areas have attracted much debate and are thus not respected by concessionaires and are not enforced by the relevant institutions. Departmental planning in the District has been *ad hoc* and there is a need to develop a District Tourism Plan. Ecotourism promoted, but without the management systems in place to ensure that tourism operations adhere to 'good' practice (responsible tourism).
	• Wildlife Censuses for hunting • Strengthening tourism facilities in Moremi Game reserve	EU: Wildlife Conservation and Management programme	Focus of surveys on valuable trophy species, rather than non hunted or cryptic species
Fisheries Sector	• Extension and outreach programmes to Ngamiland communities, private sector and relevant institutions on issues relating to fisheries • Research and monitoring of fish resources of the Okavango • Facilitation and material support to the Okavango Fishermen's Association	GOB: Department of Wildlife and National Parks – Fisheries Unit	Scientific information on fish standing stocks in the Delta is limited, resulting in friction among various fish resource users regarding the status of fish stocks in the Delta. Issues surrounding aquaculture are recent within the fisheries industry, and hence no regulation covers it including the newly formulated ones. Fisheries stakeholders, particularly those that are faced with conflict issues, lack a consultative forum at which issues surrounding the industry may be debated and collective planning and management procedures agreed upon. The Okavango Fishermen's Association is struggling to play this role and is highly dependent on the Fisheries Unit for material and moral support.

PART 2: STRATEGY

Project Rationale and Policy Conformity

72 Botswana has made and continues to make significant investments in biodiversity conservation. However, capacity weaknesses at the systemic, institutional and individual levels undermine the efficacy of conservation interventions and long-term sustainability of their outcomes. There is an unmet need to establish plans, install know-how and build capacities to protect biodiversity in production landscapes, while allowing development objectives to be pursued. This need is particularly acute in the country's wetlands, where increasing pressure from a growing number of competing resource users is threatening biodiversity.

Project Goal, Objectives, Outcomes and Outputs

73 The long-term goal of the Project is: "The natural integrity and ecological services provided by Botswana's wetlands are sustained". The Project Objective is: "Biodiversity management objectives are mainstreamed into the main production sectors of the Okavango Delta". The Okavango Delta will provide a testing ground for new conservation approaches. While the ecological landscape of the Okavango Delta is unique, and the Project is designed to address the specific threats facing the area, the planned approaches to integrating conservation objectives into the production sectors may be adapted for replication elsewhere in Botswana and will be applicable to other wetlands within Southern Africa.

74 The Project will focus on three production sectors that dominate resource uses within the Okavango Delta: water harvesting, tourism and artisanal and recreational fisheries, all potential threats to biodiversity, but which also provide good opportunities for the successful integration of biodiversity objectives within production systems. Project design is founded on the recognition that command-and-control approaches alone will be inadequate to ensure effective and sustainable mainstreaming of biodiversity management objectives in these sectors. A two-pronged strategy to mainstreaming biodiversity in these sectors has been established, namely: i) transferring certain key responsibilities for biodiversity management to land users ensuring that land use activities are undertaken with due diligence to conservation objectives, and ii) building capacity within the regulatory authorities responsible for resource use allocation and management to assimilate and apply biodiversity management objectives in decision-making. The strategy will be achieved by developing and implementing user-friendly conservation management models, centralising and making data accessible for decision making and providing technical assistance to users to understand the data and make informed management decisions.

75 Activities would be implemented by local and national government agencies in partnership with resources users, including communities, fishermen, and the tourism industry:

- *Government level* – with the aim of mainstreaming biodiversity conservation objectives into District land use planning and management decision making systems and accompanying regulations (such as lease holds); ensuring biodiversity is fully addressed within the Okavango Delta Management Plan including water harvest plans; building the capacity of government agencies, particularly Land Boards, to address biodiversity conservation issues within their activities and to improve management and enforcement as a driver for transforming production practices.
- *Land resource user level* – with the aim of empowering land users in the target sectors to manage resources sustainably, measuring the impacts of their activities on biodiversity and associated ecosystem processes, and introducing new management approaches, that assure the simultaneous attainment of conservation objectives in the regular course of doing business.

76 Interventions have been designed to contribute to four complementary Outcomes:

Outcome 1: Enabling environment strengthened at both systemic and institutional levels.
Outcome 2: Biodiversity management objectives integrated into the water sector.
Outcome 3: The tourism sector is directly contributing to biodiversity conservation objectives in the Okavango Delta.
Outcome 4: Biodiversity friendly management methods are inducted into fisheries production systems.

Outcome 1: Enabling environment strengthened at both systemic and institutional levels

77 Enabling policy and regulatory framework in place: The MEWT (through the ODMP) will finance a comprehensive review of environmental policies and regulations with the view towards harmonizing these instruments to facilitate integrative management of the Delta. This appropriation includes funds to conduct an economic valuation of ecosystem goods and services. GEF resources will be allocated to perform an economic analysis of the distribution of benefits attached to these services. This information will be used to design improved benefit sharing arrangements when piloting co-operative management systems. Further, GEF funding will be used to provide legal and technical support for the review of the tourism concession lease

agreements and the WMA regulations. This will be done in order to identify and implement necessary changes to ensure the incorporation of biodiversity management objectives. Subsidiary regulations that vest usufruct rights to fishing cooperatives for fisheries will be established under the Tribal Land Act. GEF funding will also cover costs related to the establishment of links to, and training for the DWA to ensure that biodiversity objectives are incorporated into the environmental sections of the NWMP and actually applied in assessments of water-related developments. Funds will also be drawn upon to develop detailed biodiversity management guidelines and enhance norms and standards for environmental impact assessments for developments in ecologically sensitive areas. Training workshops will be held to bring sectoral planners to a common understanding of biodiversity conservation principles. GEF funds will also be availed to cover costs related to the assimilation of wetland management strategies into the NDP and subsidiary District planning processes.

78 Cross-sectoral institutional cooperation framework in place: The capacity of the multi-sectoral Okavango Delta Management Committee to facilitate and implement a cross-sectoral planning and decision making system will be built, with SIDA funding. This will ensure that at District level, stakeholders are known to each other and the exchange of information between institutions is systematically organized. GEF funds will be used to provide logistical support and complementary training for the strengthening of: (i) the industry associations (Fishermen's Association, HATAB, and BOWMA), and (ii) NGO watchdogs, to empower them to actively participate in the institutional cross-sectoral framework put in place. This includes funds for public awareness initiatives aimed at eliciting links between conservation and development.

79 Institutional capacity of regulatory agencies strengthened: GEF funds will cover costs related to the strengthening of TLB's capacity (the main regulator) to evaluate, assess and ensure the compliance by tourism lessees with the biodiversity requirements (see first output). This will include the creation of a senior post of Biodiversity Coordinator in the TLB. Other regulatory institutions include the DWA, DOT, DEA and NWDC. GEF will fund interactive training programmes aimed at facilitating the integration of biodiversity management objectives into these regulatory institutions. This funding includes costs for reviews and modifications of relevant regulations and operational guidelines within these institutions.

80 Knowledge management systems in place: The Project will facilitate the establishment of a mechanism for a two-way flow of biodiversity information between stakeholders in regulatory bodies and the production sectors at the District level. The aim is to ensure that land use planning and management processes are better informed, and to build trust between the different interest groups. GEF and HOORC funds will jointly contribute to: (i) the establishment of a biodiversity monitoring data communication network (monitors-data archivists-managers/regulators); (ii) facilitation of the establishment of the HOORC Environmental Monitoring Unit and (iii) establishment of formal feedback mechanisms and information dissemination networks and materials, to reach OKACOM, national and District authorities.

Outcome 2: Biodiversity management objectives integrated into the water sector

81 Ecological and biodiversity parameters integrated into hydrological modelling: DANIDA (through the ODMP) will fund a hydrological model, intended to facilitate water apportionment decisions. HOORC will provide funds to link a GIS-based spatial hydrological model with flood-frequency maps generated from a time-series of high-resolution satellite imagery; vegetation mapping will provide a quantitative link between ecology and flood frequency. This will allow modelling of vegetation responses (species composition, community structure) to the hydrological effects of human development scenarios (such as de-forestation, construction of dams) and climate change in the river catchment. This will also allow the identification of potential effects of change on upward trophic links (dependency of specialist grazers, water-dependent species etc). GEF will finance the purchase of Remote Sensing (Landsat/SPOT imagery) data, which will be analyzed annually to monitor change in proportions of floodplain classes. This activity will be carried out in collaboration with the Environmental Monitoring Unit at HOORC.

82 Strengthened Institutional capacities to apply biodiversity objectives in regulating water resources harvesting: GEF resources will be provided to increase the capacity of both DWA and the DEA to assess

proposals and third party environmental impact assessments through training to ensure familiarity with EIA techniques and biodiversity conservation principles. This will be done using intensive short courses. Course design and materials will be developed around the theme of wetland biodiversity. Networks will be built between participants and also with biodiversity resource centres, such as NCSA, HOORC, and the University of Botswana, to ensure that maximum technical knowledge is brought to bear in evaluating developments.

83 Wetland monitoring and risk analysis system in place: A series of demonstration and training activities will be carried out to achieve this output: (i) GEF will fund the development of adaptive management systems for riparian woodlands. This will be informed by a baseline inventory followed by participatory development of an M&E system in collaboration with commercial tourism operators in three pilot sites. Operator personnel and HOORC technical staff will be trained in data collection and processing; (ii) The distribution of aquatic alien invasive species in the Delta will be mapped to provide baseline data and facilitate monitoring. This will be carried out through GOB funding, as part of the ODMP vegetation sector activities; (iii) Macro-invertebrate water quality indices will be developed. This activity will be jointly financed by HOORC in collaboration with the University College of London through the Darwin Initiative. The activities include extensive training in sampling and analysis. This will be used to build a comprehensive monitoring system for water quality. These three activities will feed information into the risk analysis system developed on the basis of the spatial modeling in Outcome 1.

Outcome 3: The tourism sector is directly contributing to biodiversity conservation in the Delta

84 Quality/certification system established: GEF funds will be used to upgrade the current BOBS/DOT system to integrate biodiversity objectives in the environmental management programmes of existing tourism establishments in the Delta. Participatory workshops involving key stakeholders, DOT, BOBS, TLB, HATAB, DWNP, BOWMA and other non-affiliated tourism operators will be facilitated by the Project for the identification of biodiversity related parameters to be adressed. The TLB will integrate the new grading system of tourism establishments into the tender assessment and lease renewal processes. These funds will also provide for the establishment of an award system to recognise good practices within the industry.

85 Waste management systems improved: GEF resources will be used to fund the design of a biological sewage effluent polishing system and the construction of two such systems in community-based tourism ventures situated in ecologically sensitive areas. The GOB (through the ODMP) and the tourism private sector will fund the construction of two demonstration models, one in Maun (NWDC-EHD) and one in the Delta proper (private sector). Training in operation and monitoring for all users will be done during the construction phase. GEF and the tourism private sector will jointly provide resources for the collection of effluent samples and their analysis by DWA and HOORC for nutrients and common pathogens. Further, GEF and the tourism private sector will fund stakeholder workshops to facilitate the establishment of biodiversity friendly norms and standards to be applied in the transportation and storage of fuel and oil. These will be incorporated into lease documentation (renewal and new tenders). This funding will include the development of a contingency plan to deal with fuel spillages in a timely way.

86 Joint management systems for veldt products and tourism developed: The GEF will fund the design of, test, and adapt co-management arrangements for veldt product resource use in tourism concession areas where veldt products harvesting is currently causing conflict. This will involve the establishment of joint management committees, strengthening of planning through facilitated participatory plan development, the definition of sustainable off-takes, implementation of monitoring and adaptive management, and establishment of safeguards. The joint resource management committees will share monitoring data with HOORC and TLB. JMCs will be required to compile and submit annual reports to TLB. An arbitrator will be identified to deal with conflict issues that cannot be solved locally.

87 Private sector re-invest in wetland biodiversity: The GOB (through the ODMP) will provide funds to develop a responsible District Tourism Strategy that encompasses tourism guidelines, and Limits to Acceptable Change (LAC) criteria. GEF, tourism private sector and GOB resources will be provided to strengthen capacity of the tour operators to incorporate biodiversity considerations in systematic monitoring

of impacts and adapt practices at the CHA level. This will include identification of biodiversity indices and training of tour operator personnel in monitoring. GEF will fund the establishment of a tourism interpretation facility on biodiversity at the Maun International Airport, the aim being to inform tourists on biodiversity related issues before reaching various destinations in the Delta. This will be done in collaboration with the DOT. A survey and an economic analysis will be initiated to determine the tourist consumer surplus, which may be available to pay for conservation activities. The Project will work with major tour companies to establish permanent revolving funding schemes for local conservation activities that may be part sponsored by visitors to the tourism facilities.

Outcome 4: Biodiversity friendly management methods are inducted into fisheries production systems

88 Biodiversity friendly management practices demonstrated for fisheries sector: GEF funds will be used to complement the GOB Fisheries Conflict Resolution Programme by funding participatory planning and management fora aimed at developing resource user rights and agreed management plans over recognized fishing grounds in two pilot sites. Plans will include the identification of rotational fishing grounds set-asides, to protect fish recruitment areas, fish-biodiversity monitoring indices and clear adaptive management procedures. Working collaboratively with fisher communities, the Project will establish desired target levels for fish abundance and biodiversity (codified in indices) and construct a monitoring system that will gauge progress towards the set levels. The Project will further build capacity within the user groups at the pilot sites to manage fish resources based on informed target-setting, stock monitoring and adaptive management. It will be designed to address issues of equity in benefit distribution. The Project will also provide training in monitoring and adaptive management to selected members of the Okavango Fishermens Association. This will include the use of data from the pilot sites, to reinforce the assimilation of good practice, and the replication of the demonstration model elsewhere.

89 Biodiversity safeguards are incorporated into national aquaculture programs: The Project will make recommendations for change and addition to the national EIA regulations to ensure that regulatory instruments are put in place to guide aquaculture developments, e.g. fish species permitted for farming, aquatic plants, fish food and disease control measures. Under this output, the GEF proposed Project will ensure that EIA requirements adequately cover aquaculture developments, and train Fishery staff in the assessment of aquaculture proposals to ensure that design and operation will not pose a risk to Delta ecosystems.

Project Indicators, Risks, and Assumptions

90 The risks confronting the Project have been carefully evaluated during Project preparation, and risk mitigation measures have been internalised into the design of the Project. A careful analysis of threats to biodiversity associated with water abstraction, tourism and fisheries has been conducted. While at this juncture the order and magnitude of threats are not considered serious, human induced pressures from these activities are expected to increase in the long term. Project interventions have been designed to anticipate changes in the threat profile. Eight key risks have been identified, and are summarised below. Other assumptions behind the design are elaborated in the Logical Framework matrix (Part 2, Section II).

Table 7. Risks to the GEF Project, their rating, and mitigation measures.

Risk	Risk Rating*	Risk Mitigation Measure
1. Upstream Risks: The three riparian countries of the Okavango River basin fail to reach a mutual consensus on water sharing arrangements.	M	Associated Activities: Strengthen transboundary river basin governance. Establishment of the Okavango River Commission and associated Secretariat to coordinate water resource management decisions and activities in the ORB.
2. The increase in the morbidity and mortality from the HIV AIDS pandemic outpaces the response capacity of healthcare services.	M	Associated Activities: The Government of Botswana has instituted a proactive primary health care response programme to combat the pandemic. Project: Development of a succession-planning

		framework for environmental management, as part of the ODMP.
3. Downturn in tourism industry owing to factors external to the Project adversely affects the relative price of conservation in the Delta.	M	Botswana is considered a politically and socially stable and safe tourism destination. The demand for tourism in Botswana has proven over time to be relatively inelastic. The maintenance of diverse tourism products (fly in safaris/ drive in safaris, hunting concessions) will serve to mitigate this risk.
4. Risk of introduction of non native fish into the Okavango distributary system from Aquaculture (within Botswana and upstream)	L	Project: Definition of safe minimum standards for aquaculture in Botswana. Risks to be codified and incorporated into joint management activities of OKACOM.
5. Breakdown in social relations between different stakeholder groups	L	Project: Establishment of collaborate decision-making fora and mechanisms for attenuating conflicts between stakeholders.
6. The two tiers of Government (national/ local council) and different Government agencies do not act in concert in discharging land use management functions.	L	Project: Institution of collaborative management structure for decision making; strengthening policy making, planning, monitoring and enforcement functions of local government organs, to enable the Ngamiland Council to fulfill its statutory responsibilities for environmental management.
7. Delays in the approval of the ODMP by Parliament, and entry into force of new land use regulations.	L	The ODMP is a top policy priority for the Government of Botswana. The Government has committed sizable budgetary resources to the initiative. There is strong ownership of the ODMP by Ngamiland District Administration. However DEA cannot enact the Bill itself, and is reliant on other organs of Government. UNDP will include the ODMP in its routine policy dialogue with Government, overseeing progress in implementation and providing trouble shooting services.
8. Significant increase in external development pressures, beyond pro0jected baselines.	L	Project: Activities have been designed based on a thorough analysis of threats. Development of adaptive management strategy and framework, gearing responses to threats. Strengthened M&E system will provide early warning of threats, allowing mitigation measures to be proactively instituted.
Overall Rating	**L**	

*Risk rating – H (High Risk), S (Substantial Risk), M (Modest Risk), and L (Low Risk). Risks refer to the possibility that assumptions, defined in the logical framework in Part 3, may not hold.

Alternative Strategies Considered

91 A number of alternative strategies were evaluated during Project design. These alternatives and the rationale for adopting the selected approaches are summarized in Table 8 below:

Table 8. Alternative strategies and rationale for the adopted approach.

Alternative	Rationale for Approach Selected
Develop a national Project to protect Botswana wetlands rather than focus explicitly on the Okavango Delta	The Project focuses on the Okavango Delta for a number of reasons: this wetland is the highest national management priority given its tourism potential and relative size. The Government has established an environmental planning and management programme for the area, which is designed as a pilot, to build capacities and establish the know-how for wetland management. The management models trialled in the Okavango Delta will be systematically replicated in other wetlands across Botswana as part of the National Wetlands Strategy. GEF intervention in the Okavango Delta will thus be highly catalytic, and is cost-effective. Land use in the Delta is diverse accounting for most sectors: tourism (community based and private sector), subsistence, fisheries

Alternative	Rationale for Approach Selected
	and water harvesting, and therefore lessons learnt for mainstreaming biodiversity into the productive landscapes will be directly applicable to other wetland ecosystems throughout the country. The replication element proposed will ensure that biodiversity *per se* becomes an important management consideration in other wetland ecosystems. Finally, the Okavango Delta is the highest global conservation priority in Botswana.
Protect the biodiversity of the Okavango Delta by expanding and strengthening management of PAs	The threats facing the Okavango Delta are operative at a landscape level, and are not easily resolved through the creation of protected areas. This is particularly true for the three sectors targeted under the Project. Water abstraction in particular occurs upstream, within and downstream of the Delta. The ecological dynamics of the wetland also act in favour of a bio-regional approach to conservation. The 4,888km^2 Moremi Game Reserve has already been established within the wetland and adjacent mopani woodlands. However, the prospects for further expanding this park or establishing additional areas are limited, owing to property rights considerations (most of the Delta is communal land), and socio-economic factors that demand the pursuit of conservation dispensations that are compatible with productive uses of ecosystems.
Include additional sectors in the scope	The Project focuses on sectors that provide either the greatest threat and/or opportunity for biodiversity conservation. Subsistence agriculture occurs around the peripheries of the wetland system. The dominant arable system is flood recession cultivation of cereal crops. This is a low-input low-output farming system which is not considered to pose a major threat to biodiversity. Livestock rearing is practiced around the peripheries of the Okavango Delta, outside the Buffalo fence and in the Panhandle. Livestock husbandry is considered to have a limited direct impact on the ecology of the wetland, and the potential for expansion of livestock ranching in the Delta is constrained by fences.

Expected global, national and local benefits

92 This Project will generate a number of global benefits. As one of the world's largest inland deltas, the Okavango is a unique ecosystem and a significant reservoir of biological diversity and productivity within the surrounding arid region. The Delta is internationally known and appreciated, and improving the conservation status of the Delta's fauna and flora will maintain and enhance its global value. Ensuring the conservation of the Delta's biodiversity will also contribute towards the fulfilment of Botswana's obligations under the CBD. The Project's focus on mainstreaming biodiversity into resource management efforts by strengthening existing institutional capacities and developing knowledge management systems (KMS) will create an environment that facilitates the increased awareness of biodiversity in multi-national basin management. The KMS will ensure that the information and lessons drawn from this Project will be disseminated to wetland conservation and biodiversity management initiatives (e.g. RAMSAR) throughout the world, and will raise global awareness of the Delta's biodiversity in general.

93 Additional global benefit of this Project will be realized through its contribution to the GEF's international water focus. Specifically, the Project will develop mechanisms (e.g. hydro-ecological and riparian woodland models and monitoring systems) that determine the biodiversity impacts of trans-national water resource use and management and global climate change, which will enhance regional capacity for sustainably managing the Okavango's waters in the context of a shifting global environment.

94 At the national level, the government role players involved in the ODMP will benefit from the increased technical capacity to manage biodiversity engendered by this Project. Improved cross-sectoral institutional cooperation and stakeholder participation in resource management will lead to reductions in conflict and effort duplication. Sectoral users will correspondingly benefit from the enhanced management and resource security. Institutional improvements will lead to improved policy and regulatory frameworks, which will encourage private sector investment. Awareness of the value and status of Delta biodiversity will be raised throughout Botswana. At a local level, the Project will yield significant benefits to the communities

resident within and on the periphery of the wetland. In particular, the Project will help ensure the sustainability of consumptive uses of wetland products for household subsistence. Such use makes a significant contribution to human welfare, and a vital safety net during periods of drought or livestock diseases (in the past communities in the area have turned to fishing for income and protein when livestock has had to be culled, owing to the outbreak of livestock diseases). By helping to ensure that the ecological reserve of water needed to sustain biodiversity is maintained, the Project will make a major contribution to sustaining wetland functions, and the provision of services and goods. Furthermore, the Project will help to improve the ecological sustainability of tourism, fisheries and veldt harvests in multi-purpose CHAs—and establish mechanisms for cooperative management and conflict resolution between different sets of users. This will better assure the sustainability of livelihoods.

Country Eligibility and Drivenness

GEF Eligibility

95 As a recipient of UNDP assistance, Botswana meets the eligibility criteria for GEF funding outlined in paragraph 9 (b) of the GEF instrument. The Project is consistent with the GEF Operational Strategy and Operational Programme 2: Coastal, Marine and Freshwater Ecosystems. The Project meets all key eligibility criteria under the Programme including; *threat removal,* through reducing the impact of resource uses such as tourism and fishing; *sectoral integration,* by ensuring biodiversity conservation is nested within land planning and management mechanisms; and *institutional strengthening*, by improving the capacities of the Tribal Land Board to enforce regulations pertaining to conservation, and monitor the impacts of land use on the Delta wetland.

96 The Project satisfies the Second Strategic Priority of the Biodiversity Focal Area: Mainstreaming Biodiversity in Production Landscapes and Sectors. The Project adopts the guidance provided in the information paper submitted by STAP to the GEF Council in November 2004 entitled: Mainstreaming Biodiversity in Production Landscapes and Sectors (Interim) Report (GEF/C.24/Inf.11). In particular, the following tenets of the Strategic Priority are addressed: (i) addressing barriers to the uptake of conservation measures in key production sectors; (ii) strengthening sectoral policies and policy making capacities to take due stock of biodiversity (water, tourism, aquaculture); (iii) integrating biodiversity conservation objectives into sectoral and spatial planning, through the ODMP and regional water management institutions for the Okavango River Basin (OKACOM); (iv) building broad based awareness in the production sectors of the relationship between biodiversity and sector performance (tourism/fisheries); (v) establishing schemes (i.e. certification programme) to recognize good practices at the enterprise level in the tourism sector; and (vi) demonstrating good production practices at the site level (tourism and fisheries) and establishing partnerships with enterprises and local communities for their replication.

Eligibility under the CBD

97 Botswana ratified the CBD in October 1995. The proposed Project will fulfil a number of provisions of the Convention, including Article 6, General Measures for Conservation and Sustainable Use, by nesting biodiversity conservation objectives into land management decision making systems in the Ngamiland District (Okavango Delta); Article 7, Identification and Monitoring, through data collection, impact monitoring, adaptive management and documenting lessons learnt; Article 8, *In Situ* Conservation; Article 10, Sustainable Use Management, by removing barriers to biodiversity conservation through conservation-enforcing management approaches; Article 12, Capacity Building.

98 The Project addresses a number of elements of the Revised Programme of Work on Inland Water Biological Diversity, adopted at CBD-COP 7 Decision VII/4. These elements are listed in the Table 9 below.

Table 9. Elements of the Programme of Work on Inland Water Biological Diversity addressed by the Project.

Programme Element	Goal
Programme Element 1:	Goal 1.1 Integrate the conservation and sustainable use of biodiversity into all

Programme Element	Goal
Conservation Sustainable use and Benefit Sharing	relevant sectors of water-resource and river-basin management, through the ecosystem approach Goal 1.4: To prevent the introduction of invasive alien species, including exotic stocks that potentially threaten the biological diversity of inland water ecosystems
Programme Element 2: Institutional And Socio-Economic Enabling Environment	Goal 2.1: Integrate the conservation of the biodiversity of inland water ecosystems into relevant sectoral and cross-sectoral plans, programmes, policies and legislation Goal 2.5: Promote the effective participation of indigenous and local communities and relevant stakeholders in the conservation of biodiversity of inland water ecosystems in accordance with national laws and applicable international obligations
Programme Element 3: Knowledge, Assessment And Monitoring	Goal 3.1: Improve understanding of the biodiversity in inland water ecosystems, how the systems function, their ecosystem goods and services and the values they can provide Goal 3.3. Ensure actions with the potential to impact negatively on the biodiversity of inland water ecosystems are subjected to rigorous impact assessments Goal 3.4. Introduce and maintain appropriate monitoring arrangements to detect changes in the status and trends of inland water biodiversity

Country Drivenness

99 The Project is fully consistent with the national vision, and national policies and strategies to protect biodiversity and wetland ecosystems, and is strongly supported by the authorities. Botswana places great importance on meeting its international obligations as a signatory of a number of environmental conventions. There has been substantial government support for the Okavango Delta Management Plan, and the government is highly supportive of this initiative recognising the importance of biodiversity in maintaining ecosystem services, and thus sustaining livelihoods, and meeting its commitments to the Convention on Biological Diversity. At a national level, Botswana's commitments to protecting wetland biodiversity are elaborated in the Wetland Strategy. Botswana has shown high and consistent national commitment to protecting the Okavango Delta, demonstrated amongst other things by the leadership it has demonstrated in establishing transboundary river basin management institutions, to coordinate water management activities with Namibia and Angola upstream of the Delta, suspending water dredging activities in the lower distributary channels, for environmental reasons, and establishing dedicated institutions, such as the HOORC, to provide management advice. The development of the ODMP is testament to the Government's commitment to ensuring that development in the Delta is compatible with environmental management objectives. The Government's decision to restrict mass tourism in the Delta is a further testimony to its commitment to ensuring that the integrity of the area is preserved.

Linkages with UNDP Country Programme

100 The Project is directly in line with the UNDP-Botswana Country Programme on environment, the objectives of which are to "Strengthen institutional capacity to manage and monitor the environment, strengthening national capacity to implement global conventions, supporting CBNRM and NGO/CBO driven activities, and improving natural resources management and environmental education and awareness". The proposed Project is relevant to the Strategic Results Framework as follows - Sub Goal 1: "Sustainable environmental management to improve the livelihoods and security of the poor", Strategic area of support 3: "strengthening capacity to monitor and assess environmental sustainability in order to expand access to environmental information and improve decision making". Furthermore, UNDAF highlighted the environment as one of its three focus areas for the UN system. It identified governance, institutional capacity building and human resource development, as cross cutting issues relevant to this proposal that warrant attention. UNDP and the Government of Botswana are presently working collaboratively under the Botswana Environment Programme 2003-07. The objectives are to: strengthen the capacity of MEWT and other organizations so they are better able to satisfy their mandates for environmental management; strengthen the systems for conservation and sustainable use of natural resources; and establish a national environmental

information management system, which can be applied to national development planning, within and outside Government. The programme is expected to improve the capacity for replicating good practices piloted under the Project at a national level. In addition, the program is strengthening the protocols and mechanisms for conducting environmental impact assessments of physical developments, establishing an environmental meta-database and improving state of the environment reporting to Parliament and other high level decision makers. UNDP has also provided financial assistance for the preparation of the National Wetlands Policy and Strategy.

Linkages with GEF Financed Projects

101 The Project is highly complementary with the regional international waters Project, supported by UNDP-GEF, 'Environmental Protection and Sustainable Management of the Okavango River Basin'. This Project addresses transboundary issues through a joint management approach reinforced through the development and implementation of a Strategic Action Program (SAP). The Project provides for a process of formal endorsement of the SAP by the participating governments, support for the translation of SAP provisions into national policy and legislation, and the mobilisation of institutional and investment resources for its implementation. The transboundary Project provides an effective enabling environment for this proposed biodiversity Project by addressing water management issues affecting the whole river basin that are beyond the scope of the biodiversity Project, but which cannot be treated in isolation from these wider issues. The proposed Project will be implemented in close co-operation with this Project.

102 A medium sized Project is being developed through UNDP under the International Waters Programme to assist Botswana to prepare an Integrated Water Resource Management Plan. This will provide a framework for balancing competing water demands from different economic sectors. The IWRM Plan will be revised periodically, allowing for information on the ecological reserve of water needed to protect wetland biodiversity in the Delta to be codified in the plan. The GEF has approved a concept through UNDP to manage the transboundary catchment of the Orange Senqu River basin, which includes South Western Botswana. A transboundary diagnostic study has been commissioned, to trace the transboundary determinants of threats facing the water body. The planned strategies for mainstreaming biodiversity in the water sector have application in the Orange River. Accordingly, close technical linkages will be established between the respective projects.

103 A number of UNEP-GEF initiatives are strengthening capacities at a global level to address the threats posed by Invasive Alien Species. These include the Global Invasive Species Programme and regional Project: Removing Barriers to Invasive Plant Management in Africa, which includes Zambia as a pilot country. While none of these initiatives focus explicitly on Botswana, the guidelines and best practices developed by them may have bearing on efforts to improve controls on IAS as part of the tourism sector interventions. The UNDP-GEF Project: SADC Southern Africa Biodiversity Support programme is developing a SADC protocol for IAS.

Linkages with Regional Projects

104 The Okavango Integrated River Basin Management Project (IRBM) is part of a USAID funded regional environment program which aims at improving management of shared river basins. The project is assisting OKACOM by strengthening its capacity and that of other key institutions and organizations working within the Okavango River basin. The initiative will provide support to set up a Permanent OKACOM Secretariat in Maun, Botswana to oversee the implementation of OKACOM activities. This will serve to improve the level of coordination of management initiatives, in the river basin, and facilitate the integration of ecological data into water management activities at a basin level. The Project is also supporting the development of a regional information management system. The regional system will be closely linked to the proposed biodiversity knowledge management system for the Delta in Ngamiland, created under this project.

105 The Every River Has Its People Project (ERP) is a regional initiative financed by SIDA aimed at strengthening the capacity of local communities (and other civil society stakeholders) to participate in regional decision-making fora concerning water resources management. This involves building a network of

community-level informed cadres, regional and local authorities, and NGOs to participate in the development and implementation of management activities at a basin-wide level scale. While the project is operating at the regional level, it is strengthening the capacities of civil society groups in Ngamiland to engage in environmental management and in particular policy review and reform, and activity planning and monitoring.

106 The Kavango-Zambezi TFCA (KAZA TFCA) is a proposed initiative between Angola, Botswana, Namibia, Zambia and Zimbabwe to establish a major transfrontier conservation and development area in the Kavango and Upper Zambezi River basins. The KAZA TFCA will cover an area of approximately 300,000km^2 across the five countries and includes more than 14 formally proclaimed national parks, game reserves, forest reserves and game/wildlife management areas. The area is very rich in biodiversity and its long term use and sustainable development is dependent on the wise use of its diverse natural resources base. Hence the host countries realise that there is a need to harmonise policies, strategies and practices in order to conserve and manage the transboundary natural resources shared by the five countries. This initiative will probably enhance tourism development in the zone. A Joint Technical Management Committee (politically guided by a Ministerial Committee) will be responsible for program management and coordination. Local initiatives such as this Project within the participating countries set the foundation for the realisation of the over-arching goal of the KAZA TFCA. The KAZA TFCA will provide a suitable environment for the replication of best practises demonstrated and tested under this Project more broadly in the region.

Sustainability

107 Provision has been made in Project design to assure the financial, institutional and social sustainability of conservation outcomes. A number of factors combine to ensure that the prospects for achieving a high level of sustainability are good. The policy framework in the various economic sectors and conservation arena is relatively well elaborated, and the country has an effective governance framework, anchored in strong political will. The investment climate needed to cultivate private sector confidence in the economy is supportive, and the country boasts a thriving private sector. The Project focuses on sectors dependent upon the sustainable use of biodiversity, where the investment risk associated with the erosion of ecological integrity within the wetland is accordingly high. Interventions are focused on realising conservation gains without compromising sectoral activities and profitability. A synthesis study of the economic values of wetland resources undertaken during project preparation showed that the direct and indirect use values associated with the wetland are high. The total estimated natural resource based output is US$5.6 million per annum, including Molapo (flood recession) cropping, fishing and the harvest of veldt products but excluding products more indirectly associated with wetland functions, such as livestock husbandry. The total annual turnover of the tourism industry is estimated at US$200 million per year. This is a significant contribution to the national economy and to local livelihoods. Given that for structural reasons prospects for economic diversification are limited, there is a strong impetus at the national and local level to ensure the economic sustainability of resource use systems in the area. This is a driver for ensuring broader sustainability.

108 Outcome 1 Enabling Environment Strengthened at both Systemic and Institutional Levels. It is Government's intention to establish a permanent DEA Office in Maun to oversee implementation of the ODMP. A total budget of US$ 20 million per annum is being allocated for the operations of local institutions, including HOORC, the Land Board, The District Council and the DWA. This is considered sufficient to ensure the institutional sustainability of actions. The increased capacity built through the Project within these institutions will ensure that they are able to carry the increased workload resulting from Project activities. In particular, the project will ensure that staff are better trained, and have access to decision-making tools. Further, the capacities of institutions to work collaboratively in addressing management challenges will be enhanced, allowing capacities to be utilized more effectively. Collectively, these actions are expected to improve work efficiencies. A detailed Participation Plan will guide Project operations. The engagement of land users in the design, development and implementation of the management models will provide local-level ownership of the initiative, so building the basis for ensuring social sustainability. The Plan makes provision for conflict resolution and social impact monitoring as needed to assess positive and adverse social impacts,

and allow corrective actions to be taken as needed. This will further contribute to the establishment of trust between user groups and regulatory bodies, which will be critical in sustaining new conservation activities.

109 Outcome 2: Biodiversity Management Objectives integrated into the Water Sector. The establishment of the Environmental Monitoring Unit at HOORC is a fundamental first step in ensuring sustainability of the Modelling and Wetland Monitoring and Risk Analysis activities. This unit is comprised of HOORC permanent staff, and costs are being underwritten by the University of Botswana. Strengthening of the technical capacities of DWA (AVCU) and DEA staff to incorporate BD in EIA evaluations will be sustained through the use of course materials etc developed during the Project. After the end of Project, short courses based on these materials will be run by the University for the DWA at a nominal fee. Outreach will be sustained through the ODMP institutional framework, and through the HOORC Outreach service function.

110 Outcome 3: The Tourism Sector is directly contributing to Biodiversity Conservation in the Delta. The DOT is carrying out an LAC approach to development of the industry in the Delta through the ODMP. Project pilot activities related to monitoring of tourism impacts will provide information for the LAC system. This will in turn be used to regulate the industry, with the onus placed on operators to meet norms and standards. The increasing trend in tourism companies to establish environmental units is an indication that the industry is finding environmental management to be increasingly important to their operations. The project strategy of mainstreaming biodiversity conservation fundamentals into these programs is aimed at ensuring their long-term continuance, as part and parcel of standard business practices in the sector. Once capacity has been developed, the costs of ongoing management processes will be relatively low. Incentives for the private sector will be developed in the Project and an award system will provide significant publicity value if marketed effectively. The proposed green certification system will provide a very strong marketing tool and will ensure long-term sustainability in the commitment of the private sector to biodiversity friendly practises.

111 Outcome 4 Biodiversity friendly management methods are inducted into fisheries production systems. Project activities here will achieve two main results: demonstration adaptive management systems, and an improved regulatory framework. By working through, and training personnel in, existing institutions, the Project will ensure the effective assimilation of biodiversity objectives in fishery management and industry regulation. The regulatory framework is implemented by the DWA and Fisheries Division staff, and here institutional and financial sustainability are ensured through Government's commitment to the ODMP. In the case of the Adaptive Management models, there is a heavy reliance on well-run community-based systems for monitoring, and here there is a risk that the Fishermans' Association, which is self-financed and relies on the energy of its members, may not be sustained in the long-term. The Project provides specific support to strengthen the Association and community based cooperatives responsible for administering fishery management areas. The net benefits measured by way of productivity from improved stock recruitment (measured in catch per unit effort) in areas where fishing intensity is increasing is expected to provide a powerful incentive for ensuring the continuance of the management systems at the local level.

Replicability

112 The Project has been designed based on a detailed analysis of barriers to conservation in the production landscapes of the Okavango Delta wetland. The Okavango Delta provides an excellent laboratory for integrating biodiversity management objectives into production sectors. The intention is to pilot novel conservation approaches, through partnerships between Government agencies, private enterprises and civil society which may be adapted for replication in other wetlands in Botswana, in particular the Makgadikgadi Pan in north-central Botswana, Linyanti-Chobe system in northern Botswana, and Limpopo, in eastern Botswana. These approaches are also anticipated to have application elsewhere in Southern Africa, such as in the Orange Senqu River Basin. The replication strategy (detailed in Section IV, Part 7) aims at ensuring that lessons learnt and best practices are distilled and actively disseminated to inform conservation initiatives elsewhere in the country and Southern Africa. Replication will occur at two levels: first: within the Okavango Delta, and second, nationally and regionally. Discrete interventions have been developed at each level.

113 Within the Okavango Delta itself, the Project will work at two levels: first to put in place an enabling

environment and attendant institutional capacities for successfully mainstreaming biodiversity management objectives into production sectors (water, tourism and fisheries), and second to test new conservation approaches at a field level. The first set of activities will have a bearing on the entire landscape of the seasonal and permanent wetland, with an estimated area of 10,000 – 16,000 km^2. The second set of activities will be targeted at discrete tourism and fishing concessions, which will serve as demonstration sites. The total area of these demonstration sites is estimated at 2,200km^2. The replication strategy includes measures to apply the good practices tried and adapted in the demonstration sites across the Delta.

114 The total area of wetlands in Botswana excluding the Okavango Delta is estimated at 8,000 km^2. This land constitutes the primary focus for replication activities under the Project outside of the Okavango. However, the models developed for mainstreaming biodiversity into the tourism sector are pertinent to tourism throughout Botswana. The main vehicle for disseminating lessons and good practices will be through knowledge management (production of user friendly guidance material and tool kits).

Lessons learned

115 Project design is based on a careful evaluation of lessons learned in the broad arena of mainstreaming biodiversity management objectives into the workings of production sectors[15]. The key lessons that have informed the design of Project interventions are summarised in Table 10 below:

Table 10: Lessons Learned

Lesson	Notes	Design Feature	Output
Enabling Environment	*All Sectors*		
Mainstreaming cannot succeed without a strong enabling environment. Key determinants of success include: 1. existence of supportive policies; 2. strong political will and good governance. 3. effective enforcement of rules; 4. institutional capacities to discharge statutory responsibilities concerning planning and enforcement.	The policy framework in the various economic sectors and conservation arena is relatively well elaborated. However, cross sectoral integration remains weak. The country has an effective governance framework. However, institutional capacities to implement policies and regulations remain weak and uneven. This has a debilitating effect on political will.	The Project will develop foundational capacities at the systemic and institutional levels to catalyse mainstreaming. - Strengthen the policy framework (tourism/ fisheries/ water) through engagement of sector departments - Strengthen institutional capacities for land use planning, monitoring and adaptive management - Focus on national level reforms where needed to facilitate local level action. - Ensure even application of the law - Monitor application and adapt intervention to optimise performance. - Strengthen EIA legislation and procedures	Output 1.1 Output 1.2 Output 1.3 Output 4.2
A supportive and stable investment climate is needed to cultivate private sector confidence in the economy. Business confidence is a critical determinant of success and failure in mainstreaming conservation objectives into the operations of production sectors. Biodiversity gains should exceed losses without compromising sectoral activities.	Botswana has a thriving private sector, underpinned by a supportive investment climate and good governance. The Project focuses on sectors dependant upon the sustainable use of biodiversity (tourism and fisheries), where win-win solutions for marrying conservation and economic objectives may be found. The water sector is dependent on the persistence and integrity of wetland resources to assure the quantity flow and quality of water.	Activities are designed to assure the co-generation of economic benefits and conservation gains. The strategy includes a blend of incentives (i.e. eco labelling) and voluntary measures to be taken by industry to improve performance standards. Regulatory tools will be designed with industry input, and to ensure transparency in decision-making. Capacity will be built in decision-making bodies, to ensure greater timeliness and certainty in decision-making. Activities have been defined following intensive discussions with the concerned sectors (sector ministries, private enterprises and communities).	Output 1.1 Output 1.2

[15] This includes reference materials prepared for the 2004, STAP workshop on Mainstreaming Biodiversity held in Cape Town South Africa as well as for the GEF UNEP/ UNDP: Biodiversity Planning Support Programme.

Lesson	Notes	Design Feature	Output
Information Exchange	**All Sectors**		
Clarity and convergence of purpose is needed amongst all partner institutions, at all levels. There is a need to build awareness within sectors of the relevance of biodiversity conservation.	Information systems need to be designed that provide for the exchange of information between all actors participating in management decisions. Messages need to be simple. Targeted communications strategies are needed to reach far flung local communities. The strength of traditional leadership varies throughout Ngamiland. The conveyance of information through traditional leaders has had mixed results in the past.	Facilitate a two-way flow of information between conservation agencies, business and communities. Ensure that data from monitoring exercises is widely shared. Develop useful information tools, including guidance kits, and financial information. Multiple communications channels will be used: mass media using radio, Kgotla tribal forum (traditional leaders); ward administration system, and purpose-designed outreach programmes.	Output 1.2 Output 1.4 Output 2.1 Output 3.3 Output 4.1
Balancing Competing Needs	**All Sectors**		
A nexus between conservation and development objectives needs to be found, and demands that a balance be secured between economic fundamentals and conservation needs. Tradeoffs are necessary.	Sector specific needs must be understood. This includes an understanding of the changing motivations and opportunities of each sector. However, sector interactions need to be addressed, including tradeoffs.	Sector specific outcomes have been formulated, allowing activities to be customised to the needs of different sectors. Acceptable margins for tradeoffs will be set. These will be measured under the M&E programme.	Output 1.1 Output 1.2 Output 1.4
Systems for resolving conflicts between and within institutions and communities need to be instituted.	An open access situation prevails for wild resources on communal lands. This can lead to over exploitation and social tensions. Conflicts over resource access rights exist between tourism concessions and veldt product harvesters. If not addressed, this may have detrimental impacts on biodiversity (e.g., through deliberate and uncontrolled burning of the veldt by disaffected members of communities).	Test new management schemes involving localised definition of property rights for fisheries under designated Community Trusts set up under the Wildlife Management Area Regulations. Measures to address perceived conflicts between traditional, commercial and sports fisheries are being generated through the ODMP fisheries sector. Integrated tourism planning and veldt harvest plans between tourism operations and communities, allowing for equitable access and benefit sharing.	Output 3.3 Output 3.4 Output 4.1
Financial Sustainability	**All Sectors**		
There is a need to account for financial sustainability at the outset, with a clear strategy for ensuring that recurrent costs (including depreciation on capital assets and manpower increases) can be absorbed.	A 'first-order' economic analysis was undertaken during Project preparation, showing that prospective economic benefits justify conservation intervention.	Development of novel financial mechanisms to capture the consumer surplus of tourism. Improve cost effectiveness through: (1) Measures to integrate BD conservation into the sector business model; (2) Integration of BD measures into land use planning and management system (3) Use of enforcement economics tools to define the optimum intensity of enforcement	Output 1.3 Output 2.1 Output 3.1 Output 3.2 Output 3.4
Tourism Sector			
Ensure effective institutional integration between biodiversity and tourism sectors	In Botswana, tourism development and Biodiversity Conservation mandates are handled by the same Ministry: Ministry of Environment, Wildlife and Tourism: The Government has taken steps to improve cross sectoral coordination by restructuring DEA to the new Department of Environmental	Improve communications between biodiversity planners and tourism sector planners. Enhance capacities to monitor the impacts on biodiversity of tourism activities. Strengthen capacities of Tawana Land Board to regulate tourism concessions	Output 1.4 Output 2.3 Output 3.1 Output 3.2 Output 3.3 Output 3.4

Lesson	Notes	Design Feature	Output
	Affairs.	to reduce impacts of tourism on BD.	
Need to uncover and make public the environmental impacts of tourism, as a driver for change	Most tourists to the Okavango Delta pay a premium to visit the area, under Botswana's high income low volume tourism development strategy. However, there is currently no means of ascertaining the environmental credentials of operators. Nor are ecological risks (oil spills, waste disposal) well defined.	Sensitise visitors to the environmental impacts of tourism and risks (interpretation materials/campaigns). Development of good practice guidelines for industry (information on appropriate technologies, safe minimum norms and standards, measures for reducing waste). Recognise good performance through an industry endorsed certification scheme, with clearly stated objectives.	Output 3.1 Output 3.2
Fisheries Sector			
Sustainable use requires close monitoring of the resources under exploitation. The design of spatial and temporal management methods should allow for adaptation, in response to changing conditions.	The fisheries resource is very dynamic, depending strongly on recent past flood regime (1-5 years). Current conflicts appear to stem partly from lack of appreciation of this by resource users, and opportunities for gearing up/down for coming season lost for similar reasons.	Establishment and capacitation of fishery co-management systems to monitor and adapt fishery activities. Supply information on past and prospective flooding and implications to resource users.	Output 4.1
Establish strategies to take account of changes in the relative prices of fish to other resources, which have bearing on the intensity of exploitation.	An economic study undertaken during Project preparation shows that fisheries provide an important component of household income in the Panhandle. Income is supplemented by remittances, minor wetland product harvests, livestock and seasonal molapo agriculture.	Monitoring of economic parameters.	Output 3.2 Output 4.1

PART 3: PROJECT IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

Implementation Arrangements

116 The Project will be implemented over a five-year period, and will be executed through the Project Steering Committee (PSC) chaired by the Department of Environmental Affairs (DEA) of the Ministry of Environment, Wildlife and Tourism (MEWT), with the support of the Project Assurance Group (PAG). The implementation and management structure of the Project is illustrated in the organogram (see Figure 1), and details on functions of the structures are provided below.

Project Steering Committee (PSC)

117 The PSC represents the customer and owner of the Project. It is the single implementation entity with overall responsibility for ensuring that the project meets its objectives and delivers the projected benefits. The PSC is responsible for making executive decisions for the project and provide guidance as required by the Project Manager. This includes approval of project revisions. The Project will be directed by the PSC, which contains three roles: i) the Executive (DEA, UNDP, KCS, IUCN), who are the primary initiators of the project ; ii) the Senior Supplier (UB-HOORC), a role that provides knowledge and experience of the main disciplines involved in the production of the project's deliverables, and represents the supplier's interests within the project and provides supplier resources; and Senior User (P/S-HATAB, DOT, DWNP-Fisheries, TLB, ODMP/OWMC), a role accountable for ensuring that User needs are specified correctly and that the solution meets those needs. The PSC is chaired by the DEA, and its main task is to set the policy and provide guidance (institutional, political and operational) for the Project to ensure that it remains within the agreed framework. The PSC also provides an oversight for all the components of the Project and facilitates communication to the Project from throughout the public and private sector and the donor community to the Project and vice-versa. It achieves its aims through the National Project Coordinator (NPC) of the Project Management Unit (PMU), who will attend PSC meetings on an ex-officio. Membership of the PSC will be on

an honorary basis and no fees will be paid. However, any actual and reasonable expenses incurred by members of the private and non-government sector in conducting affairs directly related to PSC activities need to be reimbursed. Membership is as indicated above and in Figure 1. Observers, advisors and other participants will attend at the discretion of the PSC. PSC business is conducted on a consensus basis. The PSC will meet at least every six months or more frequently if required.

Project Assurance Group (PAG)

118 Project Assurance role assures the PSC that the project is being conducted correctly. The Project Assurance role conducts objective and independent project oversight and monitoring functions. PAG ensures appropriate project management milestones are managed and completed within the agreed resource limits (i.e. time and finances). The Energy and Environment Unit of UNDP will play this role during the implementation of this project.

Project Management Unit

119 The Project Management Unit (PMU) will oversee and support the implementation of all daily Project activities. The PMU will be composed of a National Project Coordinator (NPC), Chief Technical Advisor (CTA) and support staff (Biodiversity Coordinator, Fisheries Coordinator, Financial Manager and Project Assistant), who will be based at HOORC, which is providing the Project Support role. The PMU will be responsible for coordinating baseline biodiversity research and the design of monitoring programmes at the Project demonstration sites, as well as the creation of a related Knowledge Management System (KMS). The PMU's duties will include among others the following:

i) Coordinate the activities of implementation partners (IUCN, UVA, KCS etc);
ii) Contract and oversee consultants;
iii) Provide project information and management recommendations to the PSC;
iv) Implement decisions and recommendations of the PSC;
v) Prepare progress and financial reports for UNDP/GEF;
vi) Administer project funds.

Project Support

120 The University of Botswana (HOORC) is the implementing partner/agency, responsible for day-to-day management and support of the Project. Project support role provides project administration support to the Project Manager/Project Management Unit as required by the needs of the project or Project Manager.

Technical Advisory Group

121 The Technical Advisory Groups (TAGS) ensures the quality control for the products which are to arise from the Project and it serves as a source of objective technical advice to all those involved at the policy, planning, management and implementation levels. The TAGS will be comprised of three advisory groups representing the fisheries, water, and tourism sectors. The PSC will, based on the required technical expertise, appoint members of the TAGS. Membership is therefore purely on individual credentials, and TAGs will operate as working groups basing their decisions on technical merit and not majority representation (quorum). The leader (Facilitator) will consolidate inputs on particular technical query for submission to the PSC and/or PMU. The TAGS will be accountable to the PSC but also accessible to the PMU.

122 In the interest of effectiveness, the maximum number of core members should be no more than 4 per sector and it is preferable if they are local experts. However, the prime objective is to get the best, most reliable and most objective advice. The core members may be augmented from time to time through temporary appointments to reflect current issues in hand. The TAGS will conduct most of its business electronically, but will meet at least every six months, to formulate advice prior to scheduled PSC meetings. The Facilitator of the TAGS will be appointed by the PSC and in addition to the duties of all members of the TAGS, he/she will also be required to provide an independent assessment of progress on Project implementation to PSC meetings, with a particular emphasis on the technical and scientific quality of the products.

The Stakeholder Consultative Fora (SCF)

123 The Stakeholder Consultative Fora (SCF) ensures that stakeholders are constantly aware of the Project and its progress and provide input into the processes as appropriate. The SCF is an ultimate meeting of stakeholders and validation of inputs acquired through a multi-tier consultation targeting levels of resource-user, village, sector, sub-district and the district. The SCF will therefore be held every six months just before the Project Steering Commtee thus ensuring the PSC is kept abreast of the views and inputs from the wider society. The Okavango Wetland Management Committee (OWMC), Main Board of the Tawana Land Board, Ngamiland District Community Based Natural Resources Management Forum (CBNRM Forum), and the North West District Council full meeting (NWDC full meeting) have representation with a wide spectrum of Delta stakeholders. All these fora have a central role in Ngamiland District planning processes. Therefore the foregoing will be adopted as the SCF for the Project, and additional representation or participation of local communities (youth, women, indigenous people, traditional leader etc) through resource-use interest groups and CBOs will be fostered. Other sectors such as agriculture and HIV/AIDS will be specifically sourced to provide inputs on these specific areas. The NPC/CTA with support from the representatives of the TAG will attend and present to the SCF on progress made and implications of the Project.

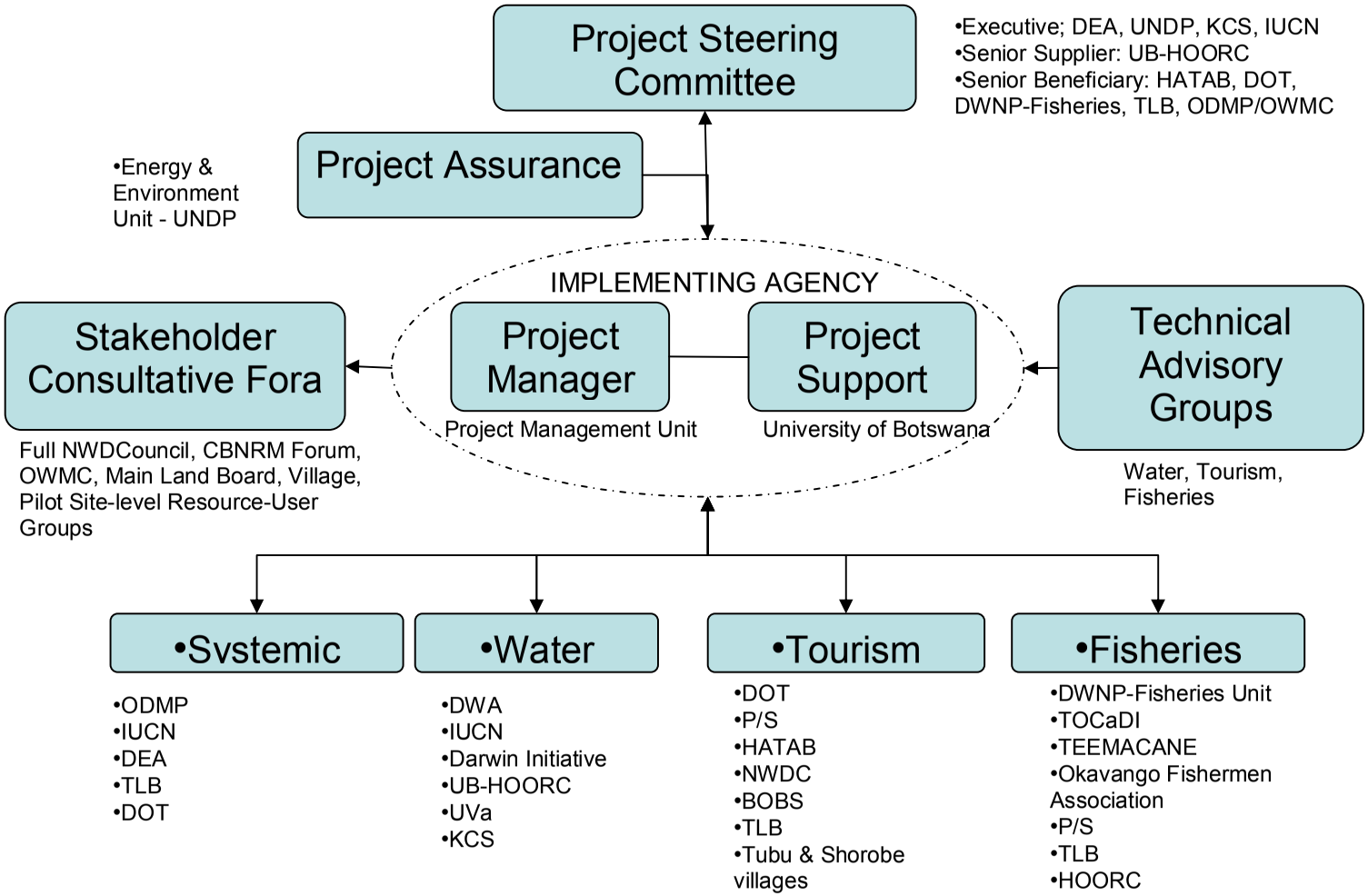

Figure 1: Project Implementation and Management Structure.

PART 4: MONITORING AND EVALUATION PLAN AND BUDGET

124 Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures, and will be provided by the Project Management Group (PMG) and the UNDP Country Office (UNDP Botswana-CO) with support from UNDP/GEF. The logical framework matrix in Section II, Part 2 of the Project Document provides *impact* indicators for Project implementation, along with their corresponding *means of verification*. These will form the base upon which the Project's Monitoring and Evaluation system will be built.

125 Following the UNDP and GEF procedures, quarterly progress and financial reports will be prepared by the PMG and presented to the Project Steering Committee (PSC) at its quarterly meetings. A joint Annual Project Review (APR) will be undertaken annually by the PMG and UNDP-CO, and will be followed by the annual Tripartite Review (TPR). In addition, independent mid-term and end-of-Project evaluations will be made to identify and reinforce strengths and correct weaknesses. The main mechanism for Project steering is the PSC. Responsibilities for monitoring the specific indicators in the logical framework will be divided between the PMG and the PSC. The full M&E plan is presented in Section IV, Part 6.

Budget and Cost Effectiveness

126 Total project financing amounts to US$16,143,125 excluding preparatory costs (Table 11). Of this, the GEF will finance US$4,000,000. Total co-financing amounts to US$12,143,125 broken down as indicated in Table 12.

Table 11. Outcome Budget (5 years)

Outcome	GEF	GOB	UB	NWDC	KCS	IUCN	SIDA	DANIDA	DED	UVA	PS	Total
1. Enabling Framework	1,493,940	2,759,000	1,000,000	0	0	1000,000	720,000	789,000	190,000	0	0	7,951,940
2. Water Sector	727,222	500,000	517,525	0	300,000	70,000	0	720,000	0	102,000	0	2,951,601
3. Tourism Sector	1,191,464	143,000	0.00	100,000	0	0	0	0	0	0	3,112,600	4,547,064
4. Fisheries Sector	587,374	120,000	0.00	0	0	0	0	0	0	0	0	707,374
Total	4,000,000	3,522,000	1,517,525	100,000	300,000	1,084,854	720,000	1,509,000	190,000	102,000	3,112,600	16,143,125

Table 12. Detailed description of estimated co-financing sources (6 years)

Co-financing Sources				
Name of Co-financier (source)	**Classification**	**Type**	**Amount (US$)**	**Status**
GOB	Government	Government funds	3,522,000	Confirmed
UB	Implementing Agency	Government funds	1,517,525	Confirmed
North West District Council	Local Authority	Government funds	100,000	Confirmed
IUCN	International NGO	Grant	1,070,000	Confirmed
SIDA	Bilateral donor	Grant	720,000	Confirmed
DANIDA	Bilateral donor	NGO funds	1,509,000	Confirmed
DED	Bilateral donor	NGO funds	190,000	Confirmed

Co-financing Sources				
Name of Co-financier (source)	**Classification**	**Type**	**Amount (US$)**	**Status**
Private Sector	Private Sector	Private sector funds	3,112,600	Confirmed
KCS	NGO	NGO funds	300,000	Confirmed
UVA	International Organization	Grant	102,000	Confirmed
Sub-Total Co-Financing			12,143,125	

127 The project strategy aims at sharing conservation management costs between different stakeholding groups: Government, private sector and local communities, as much as possible accommodating costs within the regular costs of doing business. This will be achieved through improving operational efficiency for service delivery, reducing duplication in effort, and catalysing win-win management arrangements that benefit biodiversity and business. Economic evaluations to be undertaken during the implementation phase will amongst other things: define the optimum intensity of enforcement needed to assure conservation gains, and assess the cost-benefit calculus for management activities for different user groups with a view to assuring cost effectiveness and equity. The cost effectiveness of interventions will be enhanced through systematic integration of biodiversity management objectives into policies, plans and sector development strategies, and the development of voluntary compliance measures and incentives for the private sector. Furthermore, once the high one time learning costs associated with "mainstreaming" biodiversity have been overcome, the relative costs of replicating good practices in other wetlands within the country should be low.

PART 5: LEGAL CONTEXT

This Project Document shall be the instrument referred to as "Project Documents or other instruments" in Article 1 of the Standard Basic Assistance Agreement between the Government of Botswana and the United Nations Development Programme, signed by the Parties on 14th May 1975. The Government counterpart shall, for the purpose of the Standard Basic assistance Agreement, refer to the Government cooperating agency described in that Agreement.

UNDP acts in this project as Implementing Agency of the Global Environment Facility (GEF), and all rights and privileges pertaining to the UNDP as per the terms of SBAA shall be executed '***mutatis mutandis'*** to GEF.

The UNDP Resident Representative in Botswana is authorised to effect in writing the following types of revisions to this project document, provided s/he has verified the agreement thereto by the UNDP GEF unit and is assured that the other signatories of the project documents have no objections to the proposed changes.

1. Revisions in, or addition of, any of the annexes to the project document;
2. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of inputs already agreed to or by cost increases due to inflation;
3. Mandatory annual revisions, which rephase the delivery of agreed project inputs or reflect increased expert or other costs due to inflation, or take into account cooperating agency expenditure flexibility and
4. Inclusion of additional annexes and attachments relevant to the Project Document.

SECTION II: STRATEGIC RESULTS FRAMEWORK AND GEF INCREMENT

PART 1: INCREMENTAL COST ANALYSIS

National Development Objectives

128 Botswana's long-term development goals are articulated in Vision 2016: Towards Prosperity For All. The Vision underscores the need to improve the quality of life of all Batswana, while sustaining economic growth. Some 30% of the populace is classed as poor, and have not benefited from the rapid economic growth witnessed in the era following independence. The Government has recognized as key to achieving Vision 2016 the need to ensure economic diversification to create jobs, as well as to buttress existing rural livelihoods. The latter are largely dependent on ecological capital, and stand threatened by environmental degradation. Ecological capital also underpins the development of the tourism sector, currently the second largest contributor to GDP after mining, and fastest growing industry. Accordingly, Vision 2016 identifies environment degradation as one of the challenges that needs to be tackled in order for Botswana to achieve sustainable development. Botswana has ratified a number of international environmental conventions to address this issue and the MEWT is implementing these by undertaking a number of projects, which are reflected in the 5-year National Development Plans (NDP).

129 The current plan, NDP 9 (running from 2003/4-2008/9), singles out the draft National Wetlands Strategy and Policy as a central policy tenet. This provides the contextual and institutional framework for developing Integrated Wetland Management Plans to address domestic water management issues. Water remains one of the principal constraints to development, circumscribing land use options country-wide. While serving as reservoirs of water, the country's wetlands are also the major repositories of biodiversity, and there is a need to balance competing uses of water between production interests and conservation needs. The country has formulated a National Biodiversity Strategy Action Plan (NBSAP), which places stress on the need to buffer wetlands from threats. The NBSAP calls for the development of integrated wetland management approaches to ensure the long-term maintenance of ecosystem functions and the integration of biodiversity management considerations into national and district level land-use planning. Although the policy framework to achieve this is largely in place, the capacity to operationalise it needs strengthening, particularly at the institutional and individual levels. In particular, there is an unmet need to integrate biodiversity management objectives into those of production sectors dependent on wetlands, to ensure that their respective objectives and derivative activities are mutually compatible.

Global Environmental Objectives

130 The project will serve to protect ecological values associated with wetlands, which might otherwise be forfeited. As one of the world's largest inland Deltas, the Okavango is a unique and globally important ecosystem. Situated within a large arid region and comprised of constantly shifting channels that reach peak inundation during the dry season, the Delta is an important nucleus of biological productivity and diversity. These same factors make the Delta a crucial source of human livelihoods. The Delta provides water, fish, livestock forage, and a host of other natural resources to a growing human population living within and around the Delta. It is also the prime generator of tourism revenue in Botswana. The basin's water resources are also prized by neighbouring Angola and Namibia, through which the river system flows. Increasing and often competing human needs threaten the Delta's ecological integrity and biodiversity. The Global Environmental Objective of the project, inscribed in the Project Objective is to mainstream biodiversity management considerations into three production sectors: water, tourism and fisheries. The project will contribute to the higher order goal of maintaining the natural integrity and ecological services of Botswana's

wetlands, covering an area of approximately 25,000 sq kms. While the physical landscape and ecological dynamics of the country's 4 major wetland environments are different, there is a common need to mainstream biodiversity management into production sector activities that impact the wetlands.

System Boundary

131 The Project System Boundary consists of the institutional and management framework for natural resource management within the Okavango Delta, including central and local government agencies, the HOORC, NGOs involved, the private sector tourism companies involved, and those CBOs involved. The planning frame covers an area of 18,120 km^2, or 22% of Ngamiland. Incremental and baseline costs are estimated for each of the anticipated project outcomes within this boundary, over 6-years (the assessments cover the preparatory phase for the project).

Baseline

132 The principal threats facing biodiversity per major production sector (tourism, water and fisheries) in the Okavango Delta are presented in the threats matrix in Annex 3. Under the baseline scenario, defined as business as usual, a number of significant interventions will be financed to improve management of water and other natural resources used by the main production sectors. While insufficient to ensure that the Delta's globally significant biodiversity and ecology are conserved, these activities provide an important foundation in which this project is nested. A brief description of the baseline follows.

133 Enabling Environment for Resource Management: The total baseline investment under this component is estimated at US$ 19,782,500. This includes an investment by the TLB of US$ 5,812,500 in discharging land management functions under the Tribal Land Act as per the approved zoning plan developed under the Town and Country Planning Act. The Ngamiland District Administration (through the District Land Use Planning Unit) will allocate US$ 1,162,500 towards the discharge of land use planning functions. The Unit provides a mechanism for integrated planning across production sectors at District Level. The DWNP is responsible for the WNP Act, which governs the utilization of wildlife resources, and is committing US$9,320,000 for wildlife resources planning and management (e.g. quota setting, research and monitoring, anti-poaching and disease control, outreach activities) and regulating and monitoring community based natural resources management initiatives.

134 A number of activities undertaken at a national level will strengthen the enabling environment for wetlands management in the Okavango Delta. These include enactment of the National Wetland Policy and Strategy, strengthening norms and standards for Environmental Impact Assessment, and establishing a State of the Environment Reporting Mechanism. The cost is estimated at US$2,000,000. As this funding is not directly tied to activities in Ngamiland, and thus lies outside the Systems Boundary, it is counted as Associated Finance.

135 Water Sector: The total baseline cost for interventions is estimated at US$14,713,857. The major portion of this cost, US$14,393,857, is underwritten by the DWA, which is under the Ministry of Minerals, Energy and Water Affairs (MMEWA). DWA is responsible for water resources planning, development and management (e.g. reticulation, abstraction, borehole drilling, dredging etc), alien invasive species control through the AVCU and research and monitoring (e.g. water levels, flow rates, rainfall, water quality etc).

136 An additional US$ 7,000,000 is provided by USAID and SIDA to develop the institutional apparatus for trans-boundary coordination of water management between the three riparian states of the Okavango River Basin[16]. This investment is counted as associated finance, and not baseline funding for this project, as it transcends the Okavango Delta to encompass the headwaters in Angola and riparian areas of Namibia. Nevertheless, the investment is critical to managing water abstraction and other development activities in

[16] In addition the GEF will expend US$ 5.4 million through UNDP to develop a transboundary diagnostic assessment and strategic action programme for water resource management in the Okavango River Delta.

upstream areas, which will impact upon fluvial processes and sedimentation in the Delta and therefore on biodiversity. The investment includes funds for the establishment of a Permanent Secretariat for the Okavango River Commission, a tri-country alliance set up under the provisions of the SADC water protocol to coordinate water resource management in the river basin. However, the investment does not include a provision for defining the ecological reserve of water needed across the distributary fan of the Okavango to sustain biodiversity.

137 Tourism Sector: The total baseline interventions in the tourism sector are projected at US$7,577,890. The TLB will invest US$4,206,640 for letting and controlling tourism lease concessions, including for photographic safari and hunting concessions. The North West District Council through its Ecotourism Office will appropriate US$465,000 to facilitate development of community-based tourism ventures. The DOT operates an office at District level and is spending US$1,860,000 for tourism management in the Delta. This includes the development and implementation of tourism policy, regulations, guidelines and a grading system. The private sector is committing, through its industry body HATAB US$1,046,250 for the promotion and marketing of tourism in the Okavango Delta, and the coordination of tourism sector advocacy activities in Ngamiland.

138 Fisheries Sector: The GOB, through the Fisheries Unit of DWNP in Maun, will spend US$1,822,500 for capacity building to upgrade local fishing skills and fish handling/processing technology. This also includes scientific research and monitoring of fish stock by the Unit, development of a market infrastructure for fresh/frozen fish, training of the Unit's staff to improve capacity and performance of the extension service, promotion of fish acceptance and consumption through cooking demonstrations and the development of a sector specific policy for fisheries, with regulations and guidelines. Excluded from the analysis, is the sweat equity invested by local fishermen in administering the Okavango Fishermen's Association, and self policing activities.

GEF Alternative Strategy

139 The objective of the project is to mainstream BD management objectives into three key production sectors (water, tourism and fisheries) of the Okavango Delta. Project costs will be covered by funds assigned by GEF-UNDP, Government of Botswana, the Private Sector and various bilateral donors and NGOs. The additional activities proposed under the Alternative may be broken down into two categories: sustainable development interventions, needed to protect biodiversity, but with a broader environmental objective, and incremental costs, for activities needed for and justified to protect biodiversity. The former set of activities is financed from non-GEF sources, as they generate a mix of domestic and global benefits. The latter set of activities is funded mainly by the GEF, as they generate mainly global benefits, which are diffuse and accrue over the long-term. Such activities would not ordinarily be undertaken based on the domestic cost/benefit calculus. The GEF will finance the incremental costs of interventions to achieve four outcomes, designed to lift barriers to mainstreaming biodiversity management objectives and practices into the operations of production sectors.

140 Enabling environment strengthened at both systemic and institutional levels: Total funding for this component is US$7,951,940 of which 75% constitutes the SD baseline and 25% the incremental cost: Sustainable Development Baseline: The GOB through DEA is committing US$2,759,000 for the running costs of the ODMP secretariat, a comprehensive review of environmental policies and the economic valuation of the Delta. The IUCN is the collaborating partner with the DEA in the execution of the policy, planning and strategy component. IUCN's contribution is US$1,000,000 which includes technical support to the ODMP Secretariat. SIDA is making available US$720,000 for the ODMP communication strategy, aimed at strengthening the cross sectoral institutional cooperation mechanism at district level. DANIDA is committing US$789,000 for research, data storage, data management and training. UB is a collaborative partner in the research, data management and participatory planning component of the ODMP, and is investing US$500,000. Incremental Activities to Generate Global Benefits: GEF will provide US$ 1,493,940 to ensure mainstreaming of BD into the ODMP through cross-sectoral training, as well as the establishment and

maintenance of BD monitoring and knowledge management systems. UB-HOORC will provide an in-kind contribution amounting to US$500,000 for the incorporation of BD information into ODMP data management system.

141 BD management objectives integrated into the water sector: Total funding for this component is US$ 2,936,747 of which 63% is sustainable development baseline, while 27% is incremental costs. Sustainable Development Baseline: DANIDA is spending US$720,000 for funding the ODMP Water Resources and Hydrology Component. This involves the development of hydrological models for assessing water development scenarios. Additional funds of US$500,000 from the GOB (DWA) have been committed to a sustainable long-term aquatic weed control programme under the ODMP. The KCS (a conservation NGO), through its Every River Has Its People project, is spending US$300,000 in Botswana, for outreach activities in the Okavango River Delta aimed at increasing the involvement of rural communities in decision making processes concerning water resources management. Incremental Activities to Generate Global Benefits. The GEF would provide funding of US$727,217.61 on building capacity within the DWA for effective integration of biodiversity management objectives into the regulation of water resources harvesting. UB (HOORC) will invest US$ 517,525 in the development of hydro-ecological models to link Delta ecology to hydrology. The UVA is a collaborative partner with UB in adapting wetland management in order to maintain wetland ecosystem processes and functioning, particularly research and monitoring system for riparian woodlands, and is committing US$102,000. IUCN, with support from the EU, is committing US$84,854 in the Delta through a project aimed at the integration of freshwater biodiversity into development.

142 The tourism sector is directly contributing to BD conservation in the Delta: The total funding allocated for this component is estimated at US$4,547,064, of which 71% constitutes sustainable development baseline and 29% the incremental cost. Sustainable Development Baseline: The private sector through tourism establishments in the Okavango Delta, is committing US$3,112,600 for the development and management of environmental monitoring systems. This includes wildlife, vegetation and water quality monitoring. The GoB has also committed US$ 43,000 to the ODMP for the development of a conflict resolution strategy which will address issues related to joint management plans in areas of resource user conflicts (between tourism and veldt product harvests). Incremental Activities to Generate Global Benefits[17].The GEF will provide US$ 1,191,464 to establish a BD based certification system, build capacity of regulatory agencies to re-invest in conservation, design and test improved waste management systems[18] and develop and build capacity to execute joint resource use management plans for tourism concessionaires and adjacent local communities. Funding to the NWDC-EHD from the GoB is estimated at US$100,000. These funds will ensure the participation of the NWDC-EHD in the improvement of waste management systems in the Okavango Delta, part of which is already funding the Ngamiland waste management strategy.

143 BD friendly management methods are inducted into fisheries production systems The total funding required for the integration of BD friendly management practices into the fisheries production sector is US$ 707,374, 17% of which is sustainable development baseline and 83% incremental cost. Sustainable Development Baseline: The GoB has committed US$ 120,000 for fish stock assessment, management planning, socio-economic survey of the fisheries industry and associated training through the ODMP Fisheries Component.. Incremental Activities to Generate Global Benefits. The GEF will invest US$ 587,374 for the application of participatory approaches to establish fish resource user areas in pilot sites as well as the development and execution of integrated management plans for those areas. These funds will also cover review and assessment of existing regulations and legislation in the context of aquaculture and its potential impact on BD.

[17] The analysis excludes funds earned and allocated to conservation activities through the special revolving fund. Total appropriations from the fund are estimated at US$ 1.5million per annum, once fully operational.

[18] Tourist lodges are situated in remote areas of the Delta, generally far from human settlements. Accordingly it is assumed that there will be few health benefits associated with this intervention, and technology adaptation is justified solely for the purposes of biodiversity conservation. GEF funding would be used to set up a demonstration plant at 2 community lodges, while the private sector will absorb the costs of the demonstrations within private concessions.

Incremental Costs and Benefits

144 The incremental cost matrix provides a summary of both domestic and global benefits associated with the four project outcomes. The cost of the business-as-usual baseline, occurring irrespective of the GEF support and which is undertaken primarily to produce domestic benefits, amounts to US$43,576,747. The cost of the additional activities required to achieve the Project Outcomes is estimated at US$16,143,125 of which the GEF would finance US$4,000,000 and co-financiers US$12,143,125. PDF B Project preparation costs amount to US$551,438 of which the GEF financed US$275,255. The total cost of the Alternative Strategy, comprising of the total project costs and the business-as-usual baseline, is US$ 60,171,310.

Table 13. Incremental Cost Matrix.

Outcome	Cost	Cost (US $)		National Benefits	Global Benefits
Outcome 1. Enabling environment strengthened at both systemic and institutional levels.	*Baseline*	GOB (DOL)	1,162,500	-Improved environmental governance capacities, with stronger legislation and institutional capacity at the local level for implementation.	- Improved policy foundations for wetland management creates an enabling environment for integrating BD- friendly practices into production.
		GOB (DPP)	3,487,500		
		GOB (DWNP)	9,320,000		
		GOB (TLB)	5,812,500		
		Total	**19,782,500**		
	SD Baseline	G0B	2,759,000		
		IUCN	1,000,000		
		SIDA	720,000		
		DANIDA	789,000		
		DED	190,000		
		UB	500,000		
		Total	**5,958,000**		
	Increment	GEF	1,493,940		
		UB	500,000		
		Total	**1,993,940**		
	Alternative	**TOTAL**	**27,734,440**	-Improved cross-sectoral institutional cooperation minimizes conflicts over land use and resource management	- Strengthened institutional capacities for accommodating BD conservation objectives into the activities of production sectors improves the effectiveness of conservation management in wetlands
Outcome 2. BD management objectives integrated into the water sector.	*Baseline*	GOB (DWA)	14,393,857	- Improved water resource stewardship as a result of participation of local stakeholders in water resources management decisions.	- Conservation status of wetland BD enhanced by Biological Control of aquatic alien invasive plant species
		Total	**14,393,857**		
	SD Baseline	DANIDA	720,000		
		KCS	300,000		
		GOB	500,000		
		Total	**1,520,000**		
	Increment	GEF	727,222		
		IUCN	70,000		
		UB	517,525		
		UVA	102,000		
		Total	**1,416,747**		
	Alternative	**TOTAL**	**17,330,604**	- Improved DWA staff motivation due to training opportunities created by the integration of BD conservation objectives into water resources harvesting.	- Improved technical know-how (e.g. hydro-ecological models and riparian woodland monitoring) enables the assessment of potential impacts of developments (water abstraction, land cover change, land use change) on wetland BD, and incorporation of safeguards (permitting conditions and zoning).
Outcome 3.	*Baseline*	HATAB	1,046,250	- Significant economic benefits accruing	- High recreational use values for the Okavango Delta

Outcome	Cost	Cost (US $)		National Benefits	Global Benefits
The tourism sector is directly contributing to BD conservation in the Delta.		GOB (NWDC-TOURISM)	465,000	from tourism in the Delta, but the institutional and individual capacity to regulate the larger environmental and social impacts of tourism remains limited	provide incentive for maintaining wildlands and wildlife, as opposed to conversion to land uses incompatible with BD conservation objectives
		GOB (DOT)	1,860,000		
		GOB (TLB)	4,206,640		
		Total	**7,577,890**		
	SD Baseline	PS	3,112,600		
		GOB	43,000		
		Total	**3,155,600**		
	Increment	GEF	1,191,464		
		GOB	100,000		
		Total	**1,291,464**		
	Alternative	**TOTAL**	**12,024,954**	- Joint management systems allow improved local and system-wide resource management by reducing conflict over resource user rights, increasing user security, and improving information flow.	- Globally important wetland BD conservation supported by an internally generated funding mechanism. - Biodiversity conservation objectives addressed cost effectively within the regular business model for tourism.
Outcome 4. BD friendly management methods are inducted into fisheries production systems in the Okavango Panhandle.	*Baseline*	GOB (DWNP)	1,822,500	- Framework for definition of fishing areas enabled by the zoning proposed in the Panhandle Management Plan. - Fishing is an important supplement to livelihoods of riparian communities.	- Fishing provides conservation compatible resource use, and potential incentive against the conversion of wetland habitat to contra-conservation uses.
		Total	**1,822,500**		
	SD Baseline	ODMP/GoB	120,000		
		Total	**120,000**		
	Increment	GEF	587,374		
		Total	**587,374**		
	Alternative	**TOTAL**	**2,529,874**	- Improved knowledge of fish stocks allows informed decision making on utilization. -Improved catch per unit effort of fish as a result of management systems incorporating set-asides.	-Improved conservation status of aquatic BD (particularly fish and piscivores) within the core areas of the Okavango Delta. - Improved protection of indigenous fish BD from invasion by alien species and pathogens.
TOTAL	*Baseline*		**43,576,747**		
	SD Baseline		**10,753,600**		
	Increment	**GEF**	**4,000,000**		
		Non GEF	**1,289,525**		
	Preparation	**PDF B**	**551,438**		
	Alternative		**60,171,310**		

PART 2: LOGICAL FRAMEWORK ANALYSIS

Project Strategy	**Objectively verifiable indicators**					
Goal: The natural integrity and ecological services provided by Botswana's wetlands are sustained.						
	Indicator	**Baseline**	**Mid-term Target**	**End of Project Target**	**Sources of verification**	**Risks and Assumptions**
Objective of the project Biodiversity management objectives are mainstreamed into the main production sectors of the Okavango Delta.	1. Area of wetland, where user groups are actively taking measures to protect biodiversity as part of production practice Total Area of wetland: 18,210 sq kms 2. Populations of wetland indicator species sustained Wattled Crane Red Lechwe	nil 1,400[19] 16,000[20]	=30% of Project Area No more than 20% drop in numbers	= 60% of Project Area No more than 20% drop in numbers	• Site based monitoring • Land Board Records	• Stable political and socio-economic environment continues in the Okavango River Basin • No delays in the approval of the ODMP by Parliament and entry into force of new land use regulations • External pressure on wetlands remains within projected threat profile
Outcome 1 Enabling environment strengthened at both systemic and institutional levels	Wetland conservation plans and actions are integrated into production sector strategies in the rolling Botswana National Development Plans. ODMP approved as the over-arching District planning tool by Parliament EoP Budget allocation made for implementation of ODMP % of BD management actions recommended by OWMC [21]	NDP9 No 0	NDP9 midterm review ODMP passed in 2007 Yes 25%	NDP10 50%	• NDP9 and NDP10 documents • Final ODMP plan • District Development Plan • OWMC	• The increase in the morbidity and mortality from the HIV/AIDS pandemic does not outpace the response capacity of healthcare services. • No material breakdown in social relations between different stakeholder groups • The two tiers of Government (National and local) and different Government agencies continue to act in concert in discharging land use and resource management

[19] Figures (absolute population) from Birdlife Botswana, based on censuses carried out in 2001, 2002 and 2003
[20] Figures (absolute populationbased on the survey carried out in 1995. Up to date figures are currently awaited from DWNP
[21] OWMC is the Okavango Wetlands Management Committee comprised of representatives from all major stakeholder groups in the District, and is intended to facilitate cross-sectoral collaboration. The OWMC makes recommendation to the DDC, which is the District implementing agency for the ODMP.

Project Strategy	Objectively verifiable indicators					
Goal: The natural integrity and ecological services provided by Botswana's wetlands are sustained.						
	Indicator	**Baseline**	**Mid-term Target**	**End of Project Target**	**Sources of verification**	**Risks and Assumptions**
	implemented by District regulatory authorities				records/minutes	functions.
	% of TLB lease agreements specifying BD management requirements.	0%	50%	100%	• Land Board lease documents	
	% of CHA joint management committee decisions implemented on resource use (as a proportion of all joint management committee decisions made)	0%	50%	80%	Minutes of joint management meetings	
Outcome 2 BD management objectives integrated into the water sector	% of development proposals assessed using Hydro-ecological scenarios	0%	50%	100%	• EIA Reports	• The three riparian countries of the Okavango River Basin reach a mutual consensus on water sharing arrangements (through OKACOM)
	% Change in relative proportions (1:1.6) of permanent and seasonal flooded areas	Within 20%	Within 20%	Within 20%	• Remote sensing data assessed by HOORC Monitoring Unit	
	% Change in crown cover of riverine woodlands responsible for regulation of ground water table (<1% of total vegetation cover; actual figures to be determined in year 1 of project)	Not >20%	Not>20%	Not>20%	• Monitoring reports assessing data from tour operators in pilot sites	
Outcome 3 **The tourism sector is directly contributing to BD conservation objectives in the**	Increase in total investment by tour operators in wetland management.	US$360,000.00 pa	15%	30%	• Company financial records • Socio-economic survey reports • Records of joint management	• Downturn in tourism industry owing to factors external to the project adversely affects the relative price of conservation in the Okavango Delta.

[22] Current DoT/ BOBS grading system is based on quality of facilities. This project will add BD friendly practices to the grading system.
[23] Development of certification programme not complete until after mid-term

Project Strategy	**Objectively verifiable indicators**					
Goal: The natural integrity and ecological services provided by Botswana's wetlands are sustained.						
	Indicator	**Baseline**	**Mid-term Target**	**End of Project Target**	**Sources of verification**	**Risks and Assumptions**
Okavango Delta	Pilot sewage effluent polishing systems in place in tourism establishments % of tourist establishments meet minimum BD friendly certification requirements[22]	0 0%	2 0%[23]	4 50%	committees • Financial Statements of Revolving Fund • Inspections of installations • BOBs/DoT inspection records/certificates	• Existing conflicts between resource users over user rights not resolved, thereby encouraging unsustainable utilisation
<u>Outcome 4</u> BD friendly management methods are inducted into fisheries production systems	% Area of fish production wetland under improved fisheries management systems % change in catch per unit effort (CPUE)[24] Aquaculture BD guidelines and regulations produced	0% mean minimum catch rate of 3kg/set for all species in the Okavango Delta gill net fishery. Set = standardised fishing time of 12 hours[25]	10% 5% by 2007	20% 15%	• Fisheries management plans • Monitoring records of CBOs • Guidelines and regulations documents • Socio-economic survey reports on fishers	• No accidental introduction of non-native fish and pathogens into the Okavango distributary system from Aquaculture (within Botswana and upstream) • No significant conflicts between user groups over access to fishing grounds.

[24] CPUE is an index for fishing for human consumption, based on weight of fish caught for a given unit of expenditure of effort (usually time).
[25] Baseline for specific sites to be established during year 1 of the project.

SECTION III: TOTAL BUDGET AND WORK PLAN

Award ID:	***00043119***
Award Title:	**PIMS # 2028 BD FSP: Botswana Wetlands**
Project ID	***00050134***
Project Title:	**PIMS # 2028 BD FSP** Building Local Capacity for the Conservation and Sustainable Use of Biodiversity in the Okavango Delta
Executing Agency:	Ministry of Environment, Wildlife and Tourism (Department of Environmental Affairs)

GEF Outcome	Implementing agency	Source of funds	Budget Description		Amount (US$)					
					2006(Y1)	2007(Y2)	2008(Y3)	2009(Y4)	2010(Y5)	Total
Outcome 1. Enabling environment strengthened at both systemic and institutional levels.	DEA	GEF	71200	International Consultants	30,000	20,000	10,000	-	-	60,000
			71300	Local Consultants	70,594	57,063	17,531	13,531	8,531	167,250
			71400	Contractual Services - Individ	561,970	550,174	458,508	458,508	189,437	2,218,596
			71600	Travel (Accomm)	39,787	39,787	34,787	24,787	24,787	163,934
			72100	Contractual Services-Companies	55,250	5,750	49,500	4,750	22,000	137,250
			72200	Equipment and Furniture	120,906	-	-	-	-	120,906
			72400	Communic & Audio Visual Equip	34,167	12,694	11,694	11,694	11,694	81,944
			72500	Supplies	8,000	8,000	8,000	8,000	8,000	40,000
			72800	Information Technology Equipmt	46,000	-	-	-	-	46,000
			73300	Rental & Maint of Info Tech Eq	2,000	2,000	2,000	2,000	2,000	10,000
			73400	Rental & Maint of Other Equip	4,910	6,410	4,810	4,810	3,810	24,751
			74100	Professional Services	10,000	10,000	10,000	10,000	10,000	50,000
			74200	Audio Visual&Print Prod Costs	9,850	9,850	9,850	9,850	9,850	49,250
				Sub-total	**993,434**	**721,728**	**616,680**	**547,930**	**290,109**	**3,169,881**
Outcome 2: BD management objectives integrated into the water sector.	DEA	GEF	71200	Local Consultants	87,906	51,938	15,969	9,969	9,969	175,750
			71300	Travel (Accomm)	16,559	16,559	6,559	4,559	4,559	48,793
			71600	Contractual Services-Companies	8,250	4,750	8,500	2,750	11,000	35,250
			72100	Materials & Goods	4,000	4,000	4,000	4,000	4,000	20,000
			73400	Rental & Maint of Other Equip	1,810	2,610	1,810	1,810	810	8,851
				Sub-total	**118,525**	**79,857**	**36,838**	**23,088**	**30,338**	**288,646**
Outcome 3: The tourism sector is directly contributing to BD conservation in the delta.	DEA	GEF	71200	International Consultants	36,000	30,000	6,000	-	-	72,000
			71300	Local Consultants	76,625	57,750	23,875	8,875	8,875	176,000
			71600	Travel (Accomm)	17,774	17,774	12,774	2,774	2,774	53,871
			72100	Contractual Services-Companies	13,250	5,750	7,500	4,750	19,000	50,250
			73400	Rental & Maint of Other Equip	3,810	4,610	4,810	2,810	2,810	18,851
				Sub-total	**147,459**	**115,884**	**54,959**	**19,209**	**33,459**	**370,970**
Outcome 4: BD friendly management methods are inducted into fisheries production systems in the Okavango Panhandle.	DEA	GEF	71200	International Consultants	10,000	2,000	-	-	-	12,000
			71300	Local Consultants	40,750	23,500	7,250	3,250	3,250	78,000
			71600	Travel (Accomm)	15,680	15,680	5,680	680	680	38,402
			72100	Contractual Services-Companies	3,250	2,750	8,500	1,750	7,000	23,250

			73400	Rental & Maint of Other Equip	3,810	4,610	4,810	2,810	2,810	18,851
				Sub-total	**73,490**	**48,540**	**26,240**	**8,490**	**13,740**	**170,500**
				TOTAL	**1,332,908**	**966,009**	**734,717**	**598,717**	**367,646**	**4,000,000**

SECTION IV: ADDITIONAL INFORMATION

PART I: OTHER AGREEMENTS

Response to GEF Council Comments

Project: Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta
Project ID Number: PIMS 2028
Response to GEF Council Comments

	COMMENT	RESPONSE
General Comments		
Germany: Germany Supports the Proposal		
Switzerland: The proposal meets the key eligibility criteria for GEF funding (threat removal, sectoral integration, institutional strengthening, capacity development, stakeholder participation) and is consistent with the national vision, policies and strategies. It appears to enjoy strong political support. Botswana ratified the CBD in 1995. The proposed project meets GEF's Strategic Priority 2 (Mainstreaming Biodiversity in Production Landscapes and Seas) and qualifies under OP 2: Marine, Coastal and Freshwater Ecosystems. The very well written and very well presented proposal is scientifically and technically sound and provides a comprehensive synopsis of the local framework conditions. Against the background of current threats and their root causes related to the Okavango Delta, the proposed project appears timely and of high local and global priority. We recommend that the project should therefore be endorsed in principle.		
Specific Comments		
[redacted]	5-year time line too short. It is unlikely that the ambitious goals and objectives can be met within the proposed five year time line, in particular in the light of the critical cross sectoral/ multi-stakeholder involvement, which is crucial to meeting the project objectives.	The goals, objectives, activities and associated time budget and financing plan have been developed following a series of feasibility studies, including an institutional analysis, economic assessment and sector specific evaluations. The total budget for the project, including the preparatory phase, which coincided with the preparation of the Okavango Delta Management Plan (see below) and the planned Implementation phase amounts to 7 years. The implementation time budget of 5 years takes into account the existing institutional set up and status of management actions in the Okavango Delta. The objective of the project is to strengthen capacities in Government, the private sector and civil society to integrate biodiversity conservation objectives and strategies into the activities of the main production sectors. While the range of threats facing the Okavango Delta are quite varied, the ecological integrity of the wetland remains largely intact. The focus of project interventions is on prevention, using a precautionary approach, rather than mitigation. The intended strategy is to put in place the institutional structures and decision making tools and establish the know how to address future threats, allowing management to be executed through an organic process, responsive to the needs, opportunities and challenges at any particular point in time over the longer term. The proposed time frame is considered adequate, given the strategies and measures being instituted to ensure the sustainability of activities. The Project is designed to support the implementation of the Okavango Delta Management Plan (ODMP). The ODMP has set up structures and forums within the District, to facilitate the preparation and implementation processes. These structures take into account the multi-disciplinary nature of resource management in the Okavango Delta and cross-sectoral nature of institutions responsible for natural resources management in the Ngamiland District. The existence of these structures, and prior capacity building undertaken in the process of preparing the ODMP provides an important baseline for the project, and reduces the need for investment in foundational capacity building at the systemic level. This has the benefit of reducing the necessary time budget required, and associated costs of the GEF intervention.
[redacted]	Regional context and linkages insufficient	The Okavango has a total inflow into the Delta of 12.6 km^3, approximately three quarters of which is received

	COMMENT	RESPONSE
	Although the proposal provides background on linkages with other GEF sponsored, UNDP implemented projects in the target area, it insufficiently details the regional context, especially as it relates to Angola and Namibia, which control most of the water sources feeding the Okavango Delta. Furthermore, the proposal fails to show linkages to other regional international donor projects with a direct bearing on the Okavango Delta (i.e. multi-donor, five-corner Kaza-SADC project etc.). In light of growing scarcity of funds for environmental protection and the management of natural resources, it is prudent, however, to maximize synergies and synchronize on-going and planned activities to the fullest.	from catchment areas North of the Delta, particularly in Angola. The current rate of abstraction upstream of the Delta is estimated at only 0.022 km^3 for the river as a whole, or 0.23% of the inflow. The human population density of the catchment is extremely low, with the exception of some areas on the northern fringes, and along sections of the river in Namibia. Water demand is expected to grow, particularly in Namibia. However, Namibia has identified a number of more cost effective alternatives for meeting its water needs, including the injection of surface water collected on the central plateau into under ground aquifers to reduce evaporative losses. These investments will reduce the threats to the Okavango River from water harvesting. In the longer term, there is a need to institute a joint management scheme to ensure that water demands are balanced across sectors, and tke into account environmental factors. However, the need remains to establish an economic reserve of water needed to sustain wetland biodiversity in the Delta's distributary channels, taking into account the high temporal variability in stream flow. The above information is now presented in Para 16 of the Project Document. The proposed Project is part of a suite of interventions in support of sustainable resources management within the Okavango Delta and Okavango River Basin. The project, ODMP and associated initiatives within Botswana are designed to address the direct threats to biodiversity within Botswana territory, in which the Delta lies. However, the regional initiatives are key to addressing indirect threats arising outside Botswana, particularly from water extraction. The three riparian countries have established a regional water commission (OKACOM), to help coordinate their water management efforts, and reduce the risk inherent in unilateral management decisions, that fail to account for the environmental needs of the river basin. A description of the institutional arrangements of OKACOM is provided in Para 43. Close linkages will be maintained with the following regional projects, to optimise synergies between the interventions and to ensure cost effectiveness. Detailed summaries of these projects and the expected linkages has been added to the Pro DOC (Para 101, 104, 105 and 106 respectively) 1. **Environmental Protection and Sustainable Management of the Okavango River Basin –** Working through a Riverbasin Commission (OKACOM), the project is building the capacity of riparian states to prepare a transboundary diagnostic study and strategic action programme for the riverbasin. Linkages with the BD Project will be maintained through ODMP structures and through the Knowledge Management Component 2. **Integrated (Okavango) River Basin Management (IRBM) Project:** A basin-wide intervention aimed at integrating sustainable-use of river basin resources into local, national and regional practice/policy 3. **Every River has its People project (SIDA supported):** To build the capacity of the Okavango basin residents to effectively participate in the planning of river basin management initiatives and to manage their natural resources, and to share experiences and lessons learned with other river basin communities and authorities. 4. **KAZA TFCA/ SADC Project:** The project aims to transform the Kavango-Zambezi Transfrontier Conservation Area (covering portions of Angola, Botswana, Namibia, Zambia and Zimbabwe) into an

	COMMENT	RESPONSE
[redacted]		integrated regional conservation and tourism development initiative that optimizes the transboundary benefits and opportunities of the regions.
	Stakeholder consultation and participation The proposal states that a "wide-range stakeholder consultation" took place in preparation of the proposal,. But consultation does not necessarily imply stakeholder participation in the design of the project. It is laudable that the project aims at transferring key conservation responsibilities to land-users. However, lessons drawn from other projects prove that stakeholder ownership and buy-in may only be achieved through active stakeholder participation at a very early stage and throughout the project design and implementation process.	The project engaged the services of a participatory planner, who ensured that participatory approaches were applied in all stakeholder engagement activities at field sites. Moreover, the project builds on the participatory institutional structures, and stakeholder involvement activities of the ODMP. These have involved the full range of stakeholders, including local communities, private sector and Government. This has ensured broad stakeholder involvement in the definition of the conservation strategy, and facilitated the development of a conflict resolution strategy and communication strategy amongst others, to strengthen the basis for participation. Implementation plans for conservation activities at the pilot sites have been developed with the full involvement of communities. A public participation plan has been developed, defining the strategies to be employed to ensure that the active participation of all stakeholders is ensured through the implementation phase. Activities will be adapted to optimise participation.
	Sustainability of knowledge management system	Several measures are in place to ensure the sustainability of the project's knowledge management system. • HOORC (as a knowledge creation and management institution) has a long-term commitment to providing technical advisory services as part of its mandate. The project will facilitate the setting up of an Environmental Monitoring Unit at HOORC, which is a fundamental first step in ensuring sustainability of the knowledge management system. Its purposes will include collation and analysis/interpretation of environmental data and dissemination to resource users and regulators. The Unit will be manned by HOORC permanent staff, and the costs will be underwritten by the University of Botswana • The GoB is establishing an office in Maun, to oversee the implementation of the ODMP. Operations of local regulatory institutions who are playing a major role in the application of the knowledge management system are underwritten by GoB.
	Remuneration of Technical Advisory Group (TAG) members	TAG members will be appointed based on their specific capacities and experience, and to ensure broad based sector representation. Members will be reimbursed actual costs including travel on a monthly basis. Performance standards will be set and monitored jointly by the Project Coodinator and the Project Steering Committee.
	The risks table rates 'external pressures' as 'low'. In light of international pressure regarding tsetse control in the Okavango Delta and increasing demands for water from neighbouring countries, the risk related to outside pressures offering poor mitigation opportunities appears rather high. We would like the authors of the	The threats analysis and accompanying risk assessment provide an accurate snapshot of the situation prevailing in the Okavango Delta at the present time. The risks table rates as low: " a significant increase in external development pressures beyond projected baselines". This rates the capacity of management authorities to respond to external risks. The rating reflects the understanding that risks are not expected to accelerate beyond management response capacity. Tsetse Fly Control: Aerial spraying of insecticides within the Delta to prevent tsetse fly spreading to livestock areas has been ongoing for several decades. A cocktail of Endosulphan and Deltamethrin was used during the

	COMMENT	RESPONSE
[redacted]	project to address how this difference in interpretation can be reconciled	1980s in the first eradication (as opposed to control) attempt; this failed and the distribution of the fly slowly expanded until trypanosomiasis was recorded in livestock around the western buffalo fence in the late 1990s. In 2001 and 2002, the northern and southern halves of the Delta were sprayed, respectively, with the chemical Deltamethrin at 0.3 gm ha-1. Short-term monitoring was carried out to establish the impact of Deltamethrin on untargeted biota. Aquatic invertebrate families declined by 25-46 % immediately post-spraying, although recovery was recorded to be good in 2003, except for shrimps. Terrestrial invertebrates (e.g. beetles) declined by up to 60 %. These taxa appear to have made a generally good recovery by 2003. The spraying programme was designed to eradicate the fly (that is, a "one-off" event), and so far appears to have been successful. Eradication of the Kwando-Linyanti population to the North West of the Delta is planned next, and if successful, will reduce the potential for re-invasion of the Tsetse fly into the Delta. The risk rating reflects this. Water Harvesting: Under the current set up, protocols and institutions (e.g. OKACOM) are in place to strengthen transboundary river basin governance and coordination of water resource management decisions and activities in the Okavango River Basin. This is intended to manage the harvest of water from the system, inter alia, to address environmental needs. The designation of the Okavango delta as a Ramsar site further strengthens the management regime.
[redacted]	With respect to the Outcome Budget Table, it is not clear what the 1.5 million USD listed as UB funds refer to-Would UB be the implementing Agency for this project With respect to the Incremental Cost Matrix: The matrix lists the UB costs at 500,000USD. We suggest that this item be further specified	'UB' refers to the University of Botswana, the parent agency of HOORC, that Harry Oppenheimer Okavango Research Centre. The US$ 1.5 million figure refers to co-financing committed in the form of time-input by HOORC staff, research and data management and laboratory equipment and space. The various contributions by the UB are indicated per outcome in the Incremental Cost Matrix, and further details are provided in the accompanying narrative. The matrix lists the total funding from UB, amounting to US$ 1.5 m. The purpose of these contributions is elaborated in the Incremental Cost text
[redacted]	We also suggest that the project document should indicate the source of the 1.8 million USD listed as confirmed Private Sector Co-financing	As a result of further developments in co-financing, this figure has now changed from 1.8 million USD to 3.1 million USD. It represents co-financing pledged by the private sector, mainly tourism operators in the Okavango Delta, towards monitoring and evaluation impacts of tourism activities on BD as well as towards the establishment and testing of vegetation based sewage effluent polishing system. Co-financing letters are attached to support this figure.

Co-financing Letters

TELEPHONE: 3914955
TELEGRAMS: MEWT
TELEX:
TELEFAX: 3914861
REFERENCE: EWT 1/9/3 V ((20)

REPUBLIC OF BOTSWANA

MINISTRY OF ENVIRONMENT,
WILDLIFE AND TOURISM
PRIVATE BAG BO 199
GABORONE

ALL CORRESPONDENCE MUST BE ADDRESSED TO

THE PERMANENT SECRETARY

13 June 2005

The Resident Representative
United Nations Development Programme
P.O. Box 54
GABORONE

Dear Sir,

CONFIRMATION OF CO-FINANCING FOR THE BUILDING LOCAL CAPACITY FOR THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY IN THE OKAVANGO DELTA PROJECT

The Ministry of Environment, Wildlife and Tourism is aware of the project Building Local Capacity for the Conservation and Sustainable Use of Biodiversity in the Okavango Delta. We consider it an important input to the ongoing Okavango Delta Management Plan (ODMP) project. The proposed project will assist in lifting barriers to mainstreaming biodiversity conservation objectives into the water, tourism and fisheries production sectors.

The Government of Botswana hereby further affirms its commitment to finalizing and implementing the Okavango Delta Management Plan project which is a very important project in our current National Development Plan 9. Accordingly, the Government will ensure that the necessary financial provision is made for its implementation, taking into account the recommendation of the various planned studies and outcomes of the planning exercise. The Government hereby underscores the importance of this Project in strengthening national capacities to manage wetlands as well as to fulfil our commitments to the Ramsar Wetlands Convention for which the Okavango delta is our first Ramsar site.

The Okavango Delta management Plan project has a budget of US $ 6.941.000 with US $3.522.000.00 coming directly from the Botswana Government and the rest from cooperating partners. The budget is as detailed in the table below. This Ministry, through the Department of Environmental Affairs, is directly coordinating this project and we will coordinate the implementation of the resulting management plan.

Donor	Amount in Pula (Using exchange rate of US$=P4.5)	Amounts in US Dollars
Government of otswana	15 849 000	3.522.000
ANIDA – Denmark	6 790 500	1.509.000
IUCN (WANI)	4 500 000	1.000.000
SIDA – Sweden	3 240 000	720.000
DED – Germany	855 000	190.000
Total	**Pula 31 234 500**	**US $ 6.941.000**

We hereby reiterate our support for the Building Local Capacity for the Conservation and Sustainable Use of Biodiversity in the Okavango Delta project and do hereby recommend it for financing by UNDB and GEF.

Yours faithfully,

C. J. Matale

ACTING PERMANENT SECRETARY

CC: Director of Environmental Affairs

AFRICA
CONSERVATION CORPORATION AFRICA

15th June 2005

Conservation Corporation Botswana
Private Bag B034
Boseja
Maun

The Resident Representative
UNDP
P O Box 54
Gaborone

GEF Project Proposal-Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

Dear Mr. Bjoern Foerde,

This is to inform you and the GEF council that Conservation Corporation Botswana is fully supportive of the above named project proposal. An amount equivalent to US$93200. 00 is currently allocated by our company to cover environmental activities, over the planned life term of the project, which is complementary to the above mentioned project.

Conservation Corporation Botswana looks forward to cooperating with UNDP in the above mentioned project.

Yours truly,

Mark Swaffield
Operations Manager
CC Africa (Maun, Botswana)

Environmental Expenditure - CC Africa Botswana

Per Annum Costing				
Description		**Sandibe**	**Nxabega**	**Details**
		Pula	**Pula**	
Waste Management	Protection of Waste Areas	1500	1500	Fencing & Repairs
	Biodegradable Waste Pits	1500	1500	Cages and Animal Proofing
	Waste burn areas	300	300	Drum incinerators
	Fat Traps	300	300	Construction and maintenance
	Sewarage Management	5500	2000	Sewarage pumps, honeysucking, soak aways
	Fuel & Oil Management	1000	1000	Bund walls, slabs, oil removal
	Transport Non biodegradable	12000	18000	Part of monthly trucks, planes and collection
Energy/Enviro Friendly Devices	Electric Boat	3000		Annual maint. & batteries
Property Management	Road Rehabilitation	1000	1000	Fuel and time
	Cleaning up after community (fishermen & reedcutters)	500	500	
Research & Training	Community Kids Enviro Trips	5000		5 trips per year for 10 kids @ P100 per kid
	Monitoring for Projects	1000	1000	Fuel and time
	Birdlife Bots Sponsorship	300	300	
Group Environmental Services	Annaul Environmental Audit	1000	1000	Internal environmental assesment
	Eco Journal Publication	4500	4500	Based on guides research and observations
	Salaries	8000	8000	Pro rata % based on whole group
TOTAL		**46400**	**40900**	
Projected 5 year expenditure with 8% annual inflation		***272210***	***239944***	

TOTAL FOR CC AFRICA BOTSWANA (Sandibe & Nxabega)	**512154**

Desert & Delta Safaris (Pty) Ltd
P O Box 32, Kasane
Pvt Bag 310, Maun
BOTSWANA
Tel: + 267 6560 340 / 6861 243
Fax: + 267 6560 280 / 6861 087

14th June 2005

The Resident Representative
UNDP
P.O. Box 54
GABORONE

Dear Mr. Bjoern Foerde,

GEF Project Proposal – Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta.

This serves to inform you that this Company, which operates three high cost Tourist Lodges within the Okavango Delta, is fully supportive of the above project proposal.

The Company has currently budgeted an amount of US$ 500,000.00 to cover expenses for environmental conservation and monitoring activities over the life term of the project. These activities are complementary to the above project.

We look forward to co-operating with the UNDP and other stakeholders in this important initiative.

Yours Faithfully,

B.D. Flatt
MANAGING DIRECTOR

Species Survival Programme

219c Huntingdon Rd
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UK

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IUCN
The World Conservation Union

SPECIES SURVIVAL COMMISSION

The Resident Representative
UNDP
P O Box 54
Gaborone

GEF Project Proposal-Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

Dear Mr. Bjoern Foerde,

This is to inform you and the GEF council that the IUCN Pan Africa Freshwater Biodiversity Assessment (PAFBA) is fully supportive of the above named project proposal. An amount equivalent to EURO 70,000 is currently allocated by the PAFBA to fund assessment and training activities in aquatic biodiversity in the Okavango Delta of Botswana. These activities are in all ways complementary to the above mentioned project.

The IUCN looks forward to cooperating with UNDP in this endeavour to mainstream wetland biodiversity.

Yours truly,

William Darwall

William Darwall

(Head -- IUCN Freshwater Biodiversity Assessment Programme)

World Headquarters, Rue Mauverney 28, CH-1196 Gland, Switzerland
Tel: 41 22 999.0001; Fax: 41 22 999.0002 ■ Please reply to above address

BOTSWANA KALAHARI CONSERVATION SOCIETY

26th May 2005

The UNDP Country Representative
P.O. Box 54
Gaborone

Dear Sir,

RE: GEF Project proposal - **Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta**

Please be informed that the Kalahari Conservation Society is providing co-financing to the Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta. This will take place as part of ongoing 'Every River Has Its People' project in the Okavango river basin. An amount equivalent to USD 300 000 is allocated to the activities that will compliment this project.

We would be willing to provide any necessary information on this matter if needed.

Thank You.

Yours Sincerely,

Felix Monggae
Chief Executive Officer

Hon President: The Honourable Dr G K T Chiepe MBE LLD MP
Plot 112 Independence Avenue • PO Box 859 • Gaborone • Botswana • Tel: +(267) 397 4557 • Fax: +(267) 391 4259

KER & DOWNEY
BOTSWANA

14th June 2005

The Resident Representative
UNDP
P.O. Box 54
Gaborone

GEF Project Proposal – Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

Dear Mr. Bjoern Foerde,

This letter serves to inform you that Ker & Downey Botswana, is fully supportive of the above named project proposal. As a company, an amount equivalent to $1,000,000.00 will be allocated over a period of five years to environmentally related activities.

We also wish to state that the company will make our resources and sites available wherever possible in order to provide data and to assist in the collection of data within the Okavango Delta, for the use of the Harry Oppenheimer Okavango Research Centre.

Ker & Downey Botswana looks forward to cooperating with the UNDP in the above mentioned project.

Yours sincerely,

Mrs. D. Wright
Managing Director
Ker & Downey Botswana (Pty) Ltd.

ease Reply to: Maun: P.O. Box 27 • Maun • Botswana • Telephone: (267) 6860375 • Fax (267) 6861282 • e-mail: safari@kerdowney.bw
Directors: Diane Wright • Doug Wright

NORTH WEST DISTRICT COUNCIL

Private Bag 01
Maun Botswana

Phone (+267) 6860241/2/3/4
Faxes (+267) 6860029
(+267) 6863112 Supplies

14th June 2005

The Resident Representative
UNDP
P. O. 54
Gaborone

Dear Mr Bjoern Foerde

RE: GEF Project Proposal - Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

This is to inform you and the GEF Council that the North West District Council is fully supportive of the above named project proposal. An amount equivalent to US 100 00.00 is currently allocated by NWDC to cover environmental activities, over the planned life term of the project, which is complementary to the above mentioned project.

NWDC looks forward to cooperating with GEF and UNDP in the above mentioned project.

Yours faithfully

P. N. Nkoni
COUNCIL SECRETARY

BOTSWANA

Orient Express-Safaris
P O Box 100
Maun
13 June 2005

The Resident Representative
UNDP
P O Box 54
Gaborone

GEF Project Proposal-Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

Dear Mr. Bjoern Foerde,

This is to inform you and the GEF council that Orient Express-Safaris is fully supportive of the above named project proposal. An amount equivalent to US$ 719 400.00 is currently allocated by our company to cover environmental activities associated to and within Orient Express Safaris itself over the planned life term of the project. These activities being complementary to the above mentioned project.

Orient Express-Safaris looks forward to cooperating with UNDP in the above mentioned project.

Yours truly,

Ian Johnson
Assistant Operations Manager
Orient – Express Safaris Botswana

ORIENT-EXPRESS HOTELS TRAINS & CRUISES

EAGLE ISLAND CAMP SAVUTE ELEPHANT CAMP KHWAI RIVER LODGE

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www.orient-express-safaris.com E-mail: reservations@orient-express-safaris.co.za

BOTSWANA

WILDERNESS
SAFARIS
Our Journeys Change People's Lives

8th June, 2005.

The Resident Representative
UNDP
P.O. Box 54
Gaborone

GEF Project Proposal-Building Local Capacity for Conservation and Sustainable use of Biodiversity in the Okavango Delta

Dear Mr. Bjoern Foerde,

This is to inform you that Okavango Wilderness Safaris is fully supportive of the above named project proposal. An amount equivalent to US$ 800,000 over the planned five years of the project, is projected to be allocated by our company to cover environmental activities which are complimentary to the above mentioned project.

Okavango Wilderness Safaris looks forward to cooperating with UNDP on this project.

Yours Truly,

M.A.P. Ives
Environmental Manager
Okavango Wilderness Safaris

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Directors: C. Bell • C. MacIntyre • M. McCulloch • A. Payne • P. Sekgwa • K. Vincent • www.wilderness-safaris.com
BOTSWANA MALAWI NAMIBIA SEYCHELLES SOUTH AFRICA ZAMBIA ZIMBABWE

University of Botswana
Research and Development

Private Bag UB 00708
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E-mail: Research@mopipi.ub.bw

31st May 2005

The UNDP Resident Representative
P. O. Box 54
Gaborone

Dear Sir

RE: GEF Project Proposal – Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

This is to inform you and the GEF Council that the University of Botswana is in support of the above-named project proposal, and is committing US$1,517,525.00, in kind for the incorporation of Biodiversity information into the ODMP data management and the development of hydro-ecological models to link Delta ecology to hydrology. This support will be provided by the University of Botswana through its Research Centre, HOORC, in Maun

The University of Botswana looks forward to cooperating with UNDP and GEF in implementing this proposed Project.

Thank You.

Yours Sincerely,

I N Mazonde
Director, Office of Research and Development

UNIVERSITY of VIRGINIA
DEPARTMENT of ENVIRONMENTAL SCIENCES

June 6, 2005

Bjoern Foerde
The Resident Representative
UNDP
P O Box 54
Gaborone

GEF Project Proposal-Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta

Dear Mr. Bjoern Foerde,

This is to inform you and the GEF council that the University of Virginia's Center for Regional Environmental Studies is fully supportive of the above named project proposal. An amount equivalent to US$102,000 is currently allocated by this department towards supporting 2 graduate students to be involved in riparian woodland monitoring, which is complementary to the above mentioned project.

UVa looks forward to cooperating with UNDP in the above mentioned project.

Yours truly,

H.H. Shugart
W.W. Corcoran Professor of
Environmental Sciences

H.H. Shugart, W.W. Corcoran Professor of Environmental Sciences
Center for Regional Environmental Studies
Clark Hall • 291 McCormick Road • Charlottesville, VA 22904-4123
434-924-7642 • Fax: 434-924-4761 • hhs@virginia.edu

PART 2: TERMS OF REFERENCE FOR KEY PROJECT STAFF AND CONSULTANTS

1. National Project Coordinator (NPC)

Objective:
To ensure the overall coordination and smooth implementation of the UNDP-GEF project: '**Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta'. Additionally he/she** will be responsible for the day-to-day management and implementation of outcome (i) of the project: '**Enabling environment strengthened at both systemic and institutional levels'**. The NPC will work in close collaboration with the CTA-Tourism, but the overall responsibility of the day-to-day management and monitoring of the project as well as its integration in the national planning and development processes (both at District and National levels) rests with the NPC.

Technical, managerial and financial tasks:

a) Ensure full stakeholder consensus on the implementation of Project outcomes through structured workshops and meetings
b) Work closely with relevant Government agencies and partner NGOs to ensure that Project implementation contributes synergistically to the ODMP activities and other relevant projects in the District
c) Prepare annual work plans and budgets for the Project
d) Prepare quarterly, annual, mid-term and terminal project progress reports including technical, financial and policy matters, for the consideration of the national PSC, UNDP-GEF, UNDP CO
e) Evaluate the performance of the project staff
f) Represent the Project in meetings and conferences to which the Project is invited to attend
g) Ensure proper management of the properties of the project
h) Provide overall professional guidance in collaboration with the CTA-Tourism to partner institutions
i) Ensure and maintain linkages between the district authorities and partner institutions through regular OWMC and other district meetings
j) Ensure and maintain linkages between the implementation management structures
k) Supervise the activities or inputs of short/long-term consultants and ensure proper delivery of all outputs under implementation
l) Provides technical advice and facilitation of the identification and implementation of project training needs assessment and the development of a training programme.
m) Together with the CTA, develops and maintains a district BD information flow mechanism between resource users and regulators
n) Secure provision of guidance to the project's M&E procedure and making recommendations to national authorities and donors.
o) Work closely with the BD Officer to coordinate the review processes of the Tribal Land and WNP Acts as well as tender guidelines and tourism lease agreements.
p) Ensure that District authorities (eg. TLB) embrace the integration of BD management objectives into local planning processes and development.

Leadership Skills:
The NPC will be a leader who will bring to the position status and credibility that is recognised by partner institutions/implementers. S(He) will have the ability to think strategically and laterally and maintain a broad perspective. The NPC will have the ability to work effectively under pressure and manage work and resources within tight deadlines.

The NPC will possess excellent communication skills including the ability to write lucidly and succinctly. S(He) will have the ability to work with and command respect of an international staff.

Qualifications and Experience:

a) A minimum of 10 years of technical and managerial experience dealing with applied natural resources management issues in southern Africa
b) Must have at minimum a PhD degree in Environmental or Biological Sciences (e.g. wildlife management; rangeland ecology and management, natural resources management, conservation ecology) or any other related disciplines

c) Post-doctoral experience in a research and/or training environment
d) Demonstrable experience in project coordination in the environment field including prior experience of coordinating GEF projects, with particular experience in developing and implementing UNDP-GEF or World Bank projects.
e) Demonstrable conservation experience in rural Botswana will be an added advantage;
f) Proven ability to lead and motivate a multi-disciplinary team to produce the required outputs in a timely manner.
g) Familiarity with institutional, planning and regulatory structures, and rural livelihoods in Botswana would be an added advantage.
h) Good command of English and Setswana
i) Knowledgeable about GEF, UNDP procedures

2. Chief Technical Advisor (CTA-tourism)

Objective:
The CTA works closely with the NPC but leads in providing technical direction to the implementation of the 4 outcomes of the project namely **i)** enabling environment strengthened at both systemic and institutional levels; **ii)** biodiversity management objectives integrated into the water sector; **iii)** the tourism sector is directly contributing to the BD conservation in the Okavango Delta; and **iv)** biodiversity friendly management methods are inducted into fisheries production systems. In addition, the CTA is responsible for the day to day implementation and management of outcome **(iii)** above. This involves forging links and working relationships with the private sector, communities, regulators and other government agencies.

Technical and managerial tasks to the Project:
a) Together with the NPC, the CTA participates in the preparation of annual work plans and budgets.
b) Represents the project in meetings and conferences in which the project is invited.
c) Provides technical advice and facilitation of the implementation of project outcomes and securing of consultancy services for project activities.
d) Prepares quarterly, annual and mid-term project implementation reports
e) Provides technical advice and facilitation of the identification and implementation of project training needs assessment and the development of a training programme.
f) Provides technical advice to project implementers in the implementation of the project outcomes.
g) Directs and participates in baseline inventory studies at pilot sites
h) Participates in the development, testing and modification of BD monitoring indices at pilot sites
i) Coordinates the actual monitoring of BD indices from all the outcomes
j) Together with the NPC, develops and maintains a district BD information flow mechanism between resource users and regulators
k) Secure provision of guidance to the project's M&E procedure and making recommendations to national authorities and donors.

Technical and managerial tasks specific to Outcome 3 of the Project:
a) Guides and participates in field work contributing to outcome 3 activities
b) Day to day technical input and management of activities under outcome 3.
c) Coordinates the setting up and running of joint management committees in two pilot concession areas.
d) Leads the development and use of indices for monitoring impacts of tourism on BD
e) Develop a tourism interpretation centre (BD information dissemination desk) at the Maun airport
f) Leads the review of tourism certification system to incorporate BD conservation objectives.
g) Provides technical backstopping to the design and implementation of sewage effluent polishing system.
h) Provide technical input towards review of tourism lease agreement and tender documents to incorporate BD objectives
i) Integrate BD management objectives into carrying capacity/LAC modeling of the ODMP

Leadership Skills:
The CTA will be an expert in Eco-tourism/Outdoor recreation or any other related field, and will bring to the position status and credibility that is recognised by partner institutions/implementers. S(He) will have the ability to think strategically and laterally and maintain a broad perspective, but yet provide the technical expertise required for specific components of the Project. The CTA will have the ability to work effectively under pressure and manage work and resources within tight deadlines.

The CTA will possess excellent communication skills including the ability to write lucidly and succinctly. S(He) will have the ability to work with and command respect of an international staff.

Qualifications and Experience:

a) Candidates must hold a PhD in Eco-tourism/Outdoor recreation or any other related field (e.g. conservation) with at least 10 years of technical and managerial experience dealing with project management, research and development in developing countries
b) Post-doctoral experience in a research and/or training environment
c) Have a distinguished record of publication in relevant peer reviewed journals
d) Good knowledge of the African higher education environment and its challenges
e) Demonstrable experience in programme/project development and implementation
f) Have demonstrable experience and strength in project administration, project monitoring and project evaluation
g) Have high levels of comfort and openness towards technology and its potential applications in a knowledge-based setting
h) Prior work experience in multi-cultural and multi-disciplinary environments
i) Demonstrable experience in ecotourism management in southern Africa
j) Experience in community-based tourism will be an added advantage

3. Fisheries Coordinator (FC)

Objective:

The FC will be responsible for the day-to-day management and implementation of the fisheries outcome: **Biodiversity friendly management methods are inducted into fisheries production systems**. He/She will be part of the PMU and closely work with the CCO to implement improved joint co-operative fisheries management in two pilot sites in the Okavango panhandle. The FC will, in collaboration with the CCO, further provide technical and logistical support for fishers in the panhandle with the view of strengthening their participation in fisheries-related biodiversity conservation and monitoring strategies adopted. The FC will work directly under the supervision of the NPC and with technical assistance provided by the CTA-tourism.

Technical and managerial tasks:

a) Mobilize (in collaboration with the CCO-fisheries) fisheries stakeholders (communities, Government departments and private entrepreneurs) operating in pilot sites, to buy-in the project
b) In close collaboration with the CCO-fisheries, engage communities and build consensus on improved co-operative fisheries management.
c) Ensure that relevant indigenous knowledge/practices (traditional management systems) in fisheries are gathered and where possible integrated into the improved co-operative fisheries management systems.
d) Identify fish BD monitoring champions within the pilot sites
e) Participate, together with identified BD champions and CCO, in baseline inventory studies
f) Work with BD champions to develop, test and update BD monitoring indices
g) Coordinate monitoring of accepted BD indices in pilot sites and day to day management of generated fisheries data and information
h) Prepare and submit to the PMU periodic reports on project implementation progress for Outcome 4 (fisheries pilot sites)
i) Assist the PMU in report writing and project evaluation exercises for submission to the PSC, UNDP and GEF.
j) Identification and prioritization of community training and capacity building needs in improved fisheries management.
k) Plan and execute training programmes in monitoring and adaptive management for the Fisheries stakeholders
l) Plan and implement outreach and awareness raising activities to neighbouring communities.
m) Work closely with the Fisheries Division of DWNP to develop aquaculture guidelines
n) Work collaboratively with DEA to ensure that EIA regulations cover aquaculture developments
o) Work in collaboration with the PMU to develop fisheries management strategies (at pilot sites) to achieve targeted BD levels

Qualification and experience:

a) At least a Masters degree in fisheries biology and management/ecology or related fields
b) At least 5 years of technical and managerial experience dealing with project management, research and development in fisheries management in developing countries.

c) At least 4 years work experience in wetlands conservation in rural areas, with a strong emphasis on training and or capacity building of local communities. Experience on working with local communities in the Okavango Delta, especially in aquatic biodiversity monitoring and or related fields will be an advantage.
d) Proven ability to work in a multi-disciplinary environment to produce the required outputs in a timely manner.
e) Extensive experience in working with international donor agencies, and specific knowledge or experience of GEF or UNDP funded projects
f) A working knowledge of the different government structures and agencies that are stakeholders in the Okavango Delta, and ability to liaise with all the relevant stakeholders to achieve desired outcomes
g) Research experience in aquatic biodiversity, including fisheries-related biodiversity conservation and monitoring in the Okavango Delta will be an added advantage
h) Good command of English and Setswana

4. Biodiversity Specialist (BDS)

Objective:
The BDS will provide expert input on BD conservation to the 4 project outcomes: **i)** enabling environment strengthened at both systemic and institutional levels; **ii)** biodiversity management objectives integrated into the water sector; **iii)** the tourism sector is directly contributing to the BD conservation in the Okavango Delta; and **iv)** biodiversity friendly management methods are inducted into fisheries production systems. His(er) input shall take into account the delta-wide BD analysis carried out during the PDF B phase. Data and literature on wetland BD monitoring (and indices) for the Okavango delta or from elsewhere will be reviewed with the aim of establishing simple but relevant monitoring indices that the local resource users could use for monitoring purposes in pilot sites. Field surveys shall be carried out to supplement secondary BD data at pilot sites. The BDS will work in close collaboration with the PMU, the BDO, other consultants and stakeholders to achieve BD related project outputs.

Technical tasks:
a) The BDS will review and collate existing data and literature on BD that is relevant to the pilot sites.
b) Participate in the review of the tourism lease agreements and tender guidelines to ensure incorporation of BD management objectives.
c) Ensure that training programmes developed for stakeholders incorporate BD conservation objectives
d) Ensure that BD management objectives are incorporated into the environmental sections of the NWMP, and guidelines for application in assessments of water-related developments are developed.
e) Work with the DEA to develop detailed BD guidelines to enhance standards for EIA for wetland ecological sensitive areas.
f) Coordinate all baseline survey studies and the setting of target levels at pilot sites
g) Coordinate the development, testing and modification of BD monitoring indices at pilot sites
h) Make recommendations for long-term BD monitoring in the Okavango Delta as well as replication to other wetlands
i) In close conjunction with other consultants, identify challenges and opportunities for mainstreaming biodiversity management objectives in different production sectors and production landscapes across the Okavango wetland ecosystem.
j) Develop strategic approach to Biodiversity Planning and management, which incorporates a redefined PA and WMA networks and other management areas into the broader land/seascape in line with the ecosystem approach and mainstreaming objectives (as defined by the CBD in its guidance on PAs and the ecosystem approach) so as to enable the initiation, testing and refinement of integrated ecosystem management regimes.
k) Incorporate a mechanism for the elaboration of a biodiversity policy.
l) Provide recommendations for the elaboration of an integrated Biodiversity Management Plan that provides for the integration of biodiversity objectives into production sector plans and strategies, and a spatial planning process that which integrates management of protected areas and adjacent lands within the context of broader integrate ecosystem management to enable sustainable use and provide a sound basis for sustainable development (this can build upon work undertaken such as existing management plans, strategies, etc…).

Qualifications and experience:
a) Post graduate degree in Biodiversity Conservation/Wetland Management/Watershed Management or any other related field
b) Minimum of five years biodiversity-related work experience in wetlands of a developing country

c) Experience in design of biodiversity-indices and database design for monitoring and adaptive management applications
d) A good knowledge of the Okavango wetland ecosystem

5. Economist/Environmental Economist

Objective:

The ODMP has appropriated funds to conduct an economic valuation of wetland ecosystem goods and services of the Delta within the RAMSOR site. The GEF Project Economist will collaborate with the ODMP and perform an economic analysis of the distribution of benefits attached to these services at pilot sites. Furthermore, the economist will design and promote the use of built in financial mechanisms to ensure financial sustainability of co-operative management interventions in fisheries and veldt products at pilot sites. The consultant will further design and present strategies for improving the enabling environment for BD conservation activities undertaken by the project, and ensure that key policy/decision-makers for different production sectors are aware of the value and importance of BD conservation.

Technical tasks:

General Analysis

a) Provide a quantitative and qualitative analysis, as practical of the total economic value of biodiversity conservation in the Okavango Wetland system, including direct and indirect use values building on the pilot studies and desk studies as appropriate.
b) Assess the contributions of ecological services to the production sectors of the Okavango wetland system
c) Provide a short economic overview of the main production sectors in the Okavango wetland system
d) Design and establish a viable sustainable financing mechanism for BD conservation for the Okavango wetland system
e) Assess the costs associated with preservation/maintenance or restoration of ecosystems and analyze the potential of reducing such costs through removal of adverse economic incentives (such as agriculture subsidies, encouraging unsustainable practices in agriculture, and fishing) or ecosystem by reducing public expenditures for such activities.
f) Establish a clear set of baselines from which to measure future trends so as to provide a better understanding of how policy, institutional and technological interventions can improve the capacity of ecosystems to meet human needs without degrading those ecosystems.
g) Organize a peer review workshop to discuss initial findings
h) Identify a set of measurable indicators that may be used to track project impact on resource use.
i) Identify sources of verification of indicators and determine appropriate analytical and sampling tools for impact monitoring (in close liaison with the PMU).

Pilot Sites specific

Broad

a) Assess the current forms of resource and land use and identify the economic value of natural resources and ecosystem services.
b) Assess the impact of likely changes in the natural environment and changes in production sectors such as tourism and fishing.
c) Review the existing and potential resource use conflicts and assess the different stakeholder groups related to natural resource use (e.g. fishermen, craftsmen)
d) Investigate the existing positive and negative incentive measures at play leading to the degradation / conservation of biodiversity
e) Development of a basic cost-benefit model for conservation management at the pilot sites

Specific

a) Determine levels of resource use (commercial and subsistence)
b) Assess contribution of natural resource use to livelihoods
c) Determine sustainability of current types and levels of use
d) Make an economic analysis of the distribution of benefits from goods and services
e) Design of improved benefit sharing strategies
f) To make an economic analysis of land uses

g) To establish comparable costs of production for the main economic activities
h) Analysis of subsistence and commercial wetland resource use and its contribution to household and District economics
i) Assessment of different stakeholder groups in the pilot sites from the perspective of their needs and current roles in natural resource use and biodiversity conservation
j) Assess/determine the sustainability of various forms of wetland resource use in the pilot sites.
k) Determine levels and extent of dependence on wetland resources by different users
l) Examine past and current natural resources management systems and make recommendations on how project activities can best be integrated into rural livelihoods

Qualifications and experience:

a) Post-graduate degree in natural resources/environmental/agricultural economics or any related field
b) Five years experience in the economics of natural resource use in southern Africa
c) Five years experience in working with rural people in southern Africa, in particular people living on land under communal tenure
d) Knowledge of rural household economics in Botswana is an advantage
e) Experience with the subsistence use of wetland resources, an advantage
f) excellent communication skills with a good command of English
g) An excellent understanding of sustainable financing mechanisms of conserved/protected areas is an advantage

6. Biodiversity Coordinator (BC)

Objective:

The BC will be based at the Tawana Land Board (TLB) and their main role is to ensure that BD conservation objectives are mainstreamed into the management of production landscapes (tourism, wildlife. fisheries, water etc) through district land use and development planning processes and procedures that are sensitive to BD. The BC (in collaboration with the ODMP) will forge links and build consensus for project implementation with relevant central and local government institutions in the district. On matters related to the progress of project implementation, the BC reports directly to the NPC, else they report to the TLB authorities.

Technical and managerial tasks:

General:

a) Review lessons and opportunities for strengthening public-private-community partnerships for integrated ecosystem management across different production landscapes
b) Identify workable integrated ecosystem management models that may complement "traditional" ecosystem management systems.
c) Develop a comprehensive strategic approach to address the mainstreaming of BD management objectives in district land use planning and development processes in line with CBD guidance
d) Develop a system for monitoring and evaluation of status of BD incorporation into district land use planning and development processes
e) Initiate and facilitate a mechanism for the elaboration of a biodiversity policy.
f) Provide recommendations for the elaboration of an integrated Biodiversity Management Plan that provides for the integration of biodiversity objectives into production sector plans and strategies, and a spatial planning process which integrates management of protected areas and wildlife management areas which sorounds them within the context of broader integrated ecosystem management, so as to enable sustainable use and provide a sound basis for sustainable development
g) Identify challenges and opportunities for mainstreaming BD management objectives in different production sectors and production landscapes across the Okavango wetland system

Specific:

a) Initiate and facilitate the establishment of a standing WMA steering committee whose purpose is to guide the TLB in its daily administration of WMAs
b) Ensure that inspections of tourism concession operations are carried out bi-annually as per TLB/concession agreement and incorporate BD management objectives.
c) Assist the TLB to develop an objective and standard environmental audit system for tourism concession areas.

d) Ensure that the accepted environmental audit system is integrated into the revised tender guidelines and tourism lease agreements
e) Coordinate the review of the tender guidelines and the tourism lease agreements to ensure incorporation of BD management objectives.
f) Ensure that environmentally sound concession management plans are produced and implemented accordingly.
g) Participate in the economic valuation of the delta goods and services (not clear)
h) Conduct on-job training for junior TLB staff in the improved inspection system for concession areas.
i) BD conservation requirements and ways of incorporating them into TLB land use planning and management.
j) Participate in the development of a District Tourism Strategy
k) Participate in the review of the tourism certification system and development of a new grading system for tourism establishments
l) Lead the integration of the new grading system for tourism establishment into the TLB tender assessment and lease renewal processes.
m) Work collaboratively with the DoT (Maun office) to set up a tourism interpretation centre to be based at the Maun Airport

Leadership Skills:
The BC will be a leader who will bring to the position status and credibility that is recognised by partner institutions/implementers. (He/she) will have the ability to think strategically and laterally and maintain a broad perspective. The BC will have the ability to work effectively under pressure and manage work and resources within tight deadlines.

The BC will possess excellent communication skills including the ability to write lucidly and succinctly. (He/she) will have the ability to work with and command respect of an multi-disciplinary team.

Qualifications and experience:
a) Candidates must hold at least a Masters degree in Biodiversity Conservation/ ecosystem management/ Conservation ecology and Planning or any other related field.
b) Good track record of experience working in aquatic systems
c) Minimum of 5 years biodiversity related work experience
d) Experience with working with rural communities will be an added advantage
e) Work experience with land use planning and natural resources in Ngamiland District is an added advantage.
f) Knowledge of Ngamiland local and central government structures is an advantage

7. Communication and Outreach Officer (COO)

Objective:
The main responsibility for the COO will be to assist the PMU with creating an environment that allows stakeholders to buy-into the project and with disseminating project information to all interested parties. He/she will work closely with the NPC and the CTO to ensure that the project management links are maintained and that knowledge management systems are in place.

Technical tasks:
a) In collaboration with the ODMP, produce a stakeholder consultative and involvement strategy for project implementation.
b) Develop and execute a project outreach program
c) Prepare reports on stakeholder participation and outreach program
d) Lead the initial stakeholder consultative and mobilization exercises.
e) Provides leadership on information exchange strategies among stakeholders, specifically on tourism certification system, effluent polishing system, veldt products joint management system, improved fisheries management and riparian woodland monitoring system.
f) Work closely with DoT to establish a tourism interpretation facility on BD at the Maun International Airport.
g) Document and disseminate lessons learned from the project locally and regionally
h) Establishment of formal feedback mechanisms and information dissemination networks and materials (posters, brochures, pamphlets, website, newsletter, video, films, publications, etc) and distribute them to stakeholders, at local, national and international levels.
i) Develop conflict resolution strategies for fisheries and veldt products management in project pilot sites.
j) Assist PMU in preparation of project progress reports

k) Ensure that District stakeholder fora (e.g.; OWMC, DLUPU, CBNRM etc) are kept informed about project implementation progress.
l) Facilitate the establishment of a mechanism for a two-way flow of BD information and communication at district level, between resource users and regulators.
m) Ensure BD information flow by acting as the main link among BD monitoring hub (HOORC), local resource users and District resource regulators/authorities
n) Facilitate the establishment of an EMU at HOORC to function as the nexus of the monitoring system
o) Ensure optimal use of the project's outreach assets (e.g.: mobile video/audio equipment)
p) Make recommendations towards project replication
q) Establish and maintain information exchange between the ODMP and the project to ensure integration of Okavango Delta management activities.
r) Help setup tourism industry managed schemes to tap funds from tourists to fund biodiversity related conservation activities at HOORC, in the Okavango Delta.

Qualifications and experience:

a) A Masters degree in Environmental Science, Communication and information science or rural sociology.
b) At least 2 years relevant post qualification experience
c) Vast experience working with rural communities in natural resources management issues.
d) Ability to work within a multidisciplinary setting.
e) Good command of both English and Setswana
f) Good communication and interpersonal skills
g) Knowledge of Ngamiland local and central government structures is an advantage.

8. Community Conservation Officers (CCO)

Objective:

The CCOs will be based in the field and their main role is to assist communities, tourism entrepreneurs and resource regulators in the project pilot sites to effectively implement improved joint management initiatives for fisheries and veldt products within the Okavango wetland system. They will provide a vital link between the Project Management Unit (PMU) and the local fisheries and veldt products resource users. The CCO (fisheries) and CCO (veldt products) will work closely with the PMU and report directly to the FO and CTA-tourism, respectively**.**

Technical/field tasks:

a) Mobilize pilot communities and private entrepreneurs to buy-in the project
b) Engage pilot communities and build consensus on project issues through participatory planning approaches
c) Identify relevant indigenous knowledge/practices (traditional management systems) to be integrated into project joint cooperative management strategies at pilot sites
d) Identify BD monitoring champions within the pilot sites
e) Participate, together with identified BD champions, in baseline inventory studies
f) Work with BD champions to test and modify BD monitoring indices
g) Coordinate monitoring of accepted BD indices
h) Prepare and submit to the PMU periodic reports on project implementation progress at pilot sites
i) Identification and prioritization of community training and capacity building needs
j) Coordination of community activities in relation to and in collaboration with other community initiatives, government and other donor funded projects as well as private sector involvement in the project areas.
k) Plan and implement outreach and awareness raising activities to neighbouring communities in preparation for future replication.
l) Assist the PMU in report writing and project evaluation exercises for submission to the PSC, UNDP and GEF.
m) Identify

Qualifications and experience:

a) At least a diploma certificate in natural resources management, fisheries biology/ecology, environmental sciences, sociology, development economics or any other related field
b) 5 years of practical experience with community development with a strong background in participatory techniques and community-based approaches to development.

9. Project Administrator (PA)

Objective:
The PA will assist the PMU by ensuring that project-related administrative support exists during the project implementation phase. Furthermore, the PA will be responsible for the effective procedural functioning of meetings and workshops, for consultation and other community liaison processes. The PA will actively participate in the implementation of outcome (ii) of the project: '**Biodiversity management objectives integrated into the water sector**'.

Administrative and technical tasks:

a) Organize (in conjunction with CCOs and PMU) stakeholder mobilization and consultative meetings and workshops
b) Support the NPC in creating an effective and efficient project administrative capacity and provides the project secretariat with support for project meetings, workshops and seminars
c) Assists the PMU in the preparation of meetings, workshops and project progress reports
d) Provide support to the PMU in the collection and compilation of data relevant to the project outcomes
e) Upkeep and sustaining of a project management framework
f) In collaboration with the Finance Officer, assist in the procurement procedures to ensure efficient execution of project activities
g) Perform any other duties assigned by the Project Coordinator
h) Work closely with the UVA and PMU to conduct baseline inventory studies in riparian woodland pilot sites
i) Participates in the identification of BD monitoring champions in riparian woodland pilot sites
j) Participates in the development, testing and modification of BD monitoring indices at riparian woodland pilot sites
k) Coordinates the monitoring of riparian woodland BD indices in pilot sites and manage the generated data and information.
l) Ensure integration of project outcome (ii) activities with other related BD monitoring and conservation projects at HOORC and within the District.
m) Checks all items received for quality and specification to ensure goods received are in accordance with user requirements
n) Inputs receipt data into computerized system and batches and reconciles transactions
o) Maintains accurate filing system of documentation
p) Issues all stock items to users in accordance with requisitions presented
q) Registers all requisitions, batches and files them after punching in the computer

Qualifications and experience:

a) A first degree in natural resources management/natural resources economics/ecology, environmental sciences, water resources management or any other related field.
b) At least 2 years experience as project assistant in a multi-disciplinary research or development project.
c) Knowledgeable about GEF, UNDP project management procedures
d) Knowledge in the UB clerical administration and financial procedures

PART 3: STAKEHOLDER INVOLVEMENT PLAN

145 The primary stakeholders in this Project are natural resources users (fishers and tour operators), resource regulators (District government departments), independent organizations (HOORC and NGOs), and local and visiting technical experts. The stakeholder participation plan per Project output is outlined below and key stakeholders, their roles and interest in this Project, potential sources of conflict and mitigation measures are detailed.

Outcome 1: Enabling environment strengthened at both systemic and institutional levels

146 Strengthened Environmental Policies, Regulations and Plans: The NCSA is in the process of reviewing current environmental regulations and policies. Stakeholder participation is being effected through personal interviews, specific resource user groups, and village-level fora. A legal expert will work in collaboration with TLB and the tourism reference group to draft biodiversity clauses in tourism leases. Photographic and Safari Tourism operators and Community-based tourism enterprises will be consulted as discrete user groups in this process. The review of WMA regulations will be sanctioned at Ministry level, after which local communities in CHAs will be consulted through their resource-use groups, trusts and traditional leadership. District Regulatory bodies will be apprised of local level issues (in DDC or DLUPU fora) to obtain consensus. Through the ODMP,

MEWT will be expected to create a platform for the Project to access, impact and influence the NWMP process, sanctioned by MMEWA such that DWA can incorporate biodiversity considerations into policy. DEA is to develop regulations and formulate guidelines for implementing EIA legislation. The ODMP sector groups will be assisted to submit recommendations on the incorporation of biodiversity principles into EIA regulations, and the sectoral guidelines.

147 The MFDP is the custodian of the National Development Plan. The PS MEWT will request the authority to fill the role of biodiversity auditor for NDP submissions to ensure that they incorporate biodiversity. This will require due appointment by MFDP. The role of biodiversity Auditor will be the subject of high-level discussion between the two Ministries, and may require the facilitation of the UNDP to bring neutrality and global lessons to an otherwise sensitive issue of inter-ministerial control. The Project will facilitate dialogue on economic growth and environmental sustainability as a way of leveraging the role of MEWT as a biodiversity Auditor for NDPs.

148 Cross-sectoral institutional cooperation framework in place: Cooperation amongst local stakeholders has already been secured through the ODMP Research, Data Management and Participatory Planning component, which has established a range of stakeholder networks. One such network is the OWMC, which represents a wide range of Delta stakeholders such as District government institutions, private sector, NGOs and local natural resource users. This District level committee meets quarterly and discusses a range of cross-sectoral issues, passing resulting recommendations and resolutions to the ODMP and DDC. At the national level, ministry heads, Project donors, NGOs, and the private sector comprise the steering committee for the ODMP. Participation of these various stakeholders will further be enhanced by the ongoing development of an ODMP communications strategy.

149 Strengthening capacity of regulatory agencies: TLB will be the recipient of a pilot initiative to demonstrate the importance of a biodiversity Technician within land allocation and fostering compliance. This initiative will operate in close collaboration with DWNP, NWDC, DOT and DWA. These agencies will be the recipients of an ongoing interactive learning programmme provided through the pilot initiative anchored within TLB. The pilot initiative will involve the private sector that are willing to make available their establishments as environmental audit test cases. The DEA will provide input at strategic level in synchrony with the development of EIA guidelines.

150 Knowledge management systems in place: Meetings will be held with community groups, private sector, government departments and private research groups doing monitoring in and around pilot sites to discuss protocols on data quality, frequency of deposition, property and access rights. The next level of dialogue will be at the District bringing together all agencies generating data. HOORC will commit to the protocols in terms of outputs of processed data. The recipients of processed data will be the TLB, DWA, DWNP, DOT, the private sector, community trusts and other community-based resource use groups. The different recipients of processed data, including those at the river-basin level, will meet once a year (in a seminar or conference) to discuss implications of the information at hand and agree on management actions. The OWMC is well placed to facilitate dialogue. Other wetland stakeholders locally, nationally and globally will be recipients of information and lessons learned via the media of annual seminar publications and regular online updates.

Outcome 2: BD management objectives integrated into the water sector

151 BD/ecological parameters integrated into hydrological modeling: The ODMP is in the process of developing a hydrological model, and has already presented some preliminary results at various stakeholder workshops. These workshops are attended by scientists, community representatives, NGOs and government departments (District and national). Stakeholder comments and feedback are being used to inform the model's development.A similar participatory approach will be employed by HOORC in extending the OMDP hydrological model into a hydro-ecological model of the Delta. DWA through the Botswana Commissioner to OKACOM, will play an important role of linking these models to the river-basin level model.

152 Strengthened Institutional capacities to apply biodiversity objectives in regulating water resources harvesting: HOORC will provide training to DEA, DWA and DWNP to integrate biodiversity data and information

into water resources development planning and related EIA work. HOORC will work with civil society, private sector and other affected parties to evaluate the effectiveness of planning systems and provide retraining as appropriate.

153 Monitoring and risk analysis system in place: Preliminary consultations with tourism establishments will be carried out to secure commitment for pilot sites and lodge staff participation. UVA will provide training to lodge staff and HOORC Environmental Monitoring Unit technical staff. Lodge staff in remote locations such as those envisaged for pilot sites go on prolonged leave of absence and move between camps frequently, and this will require that UVA train more staff than required at any one point in time. The Sedibana/Xaxaba community will have a meeting facilitated by HOORC to select people to be trained on monitoring. The emphasis will be on members of the community that interact with natural resources on regular basis – these being mainly the low-income households. A deliberate effort will be made by HOORC to ensure that members of poor households participate in the monitoring. Training to community members provided by UVA will be based on existing resource use and management regimes to ensure local relevance and long-term sustainability. DWA has an existing programme of controlling aquatic invasive species, and will through the ODMP become part of a monitoring framework.

Outcome 3: The tourism sector is directly contributing to biodiversity conservation in the Delta

154 Quality/certification system established: Dialogue between DOT, BOBS, HATAB, DWNP BOWMA and other non-affiliated tourism operators will be facilitated to identify biodiversity related parameters of the tourism business. Through a carefully negotiated process, these biodiversity parameters will be integrated into the existing grading system of the tourism establishments. The TLB will be included in the discussions so that the grading is integrated into the tender assessment and lease renewal process. BOBS will be the intermediary between advertising agencies and tourism operators, providing quality assurance to the consumer. DOT will continuously work with BOBS on global marketing initiatives (including travel and insurance agents) highlighting the role of BOBS quality assurance in advertising and marketing material.

155 Waste management systems improved**:** The ODMP is addressing the issue of general waste management in the Ramsar site through the Department of Environmental Health (DEH) of the NWDC. The planned development of a waste management strategy will be driven by the DEH, with the participation of Stakeholders including the ODMP/NWDC, the private sector, the local community trusts involved in community based tourism, TLB, DoT and HOORC. ODMP will be working through DEH to engage village-level stakeholders in formulation of a Waste Management Strategy. Other stakeholders in this process will be those with membership in the OWMC. The process will inform the strategy for designing and operating Sewage Effluent-Polishing Systems with the involvement of private sector and community-based Tour Operators. Parallel consultation processes will engage Tour Operators, Private bulk-fuel suppliers and transporters in development of standards for transport and storage of fuel, and contingency plans for dealing with spillage. BoBs will be invited to provide input on standards for fuel transport, storage and dispensation. The TLB will be engaged in later consultations for integration into lease conditions for tourism establishment. The participation process will need to be carefully crafted to ensure implications of increased costs (to cover insurance over risks to biodiversity) are discussed by all stakeholders openly.

156 Joint management systems for veldt products and tourism developed: Community resources-use Interest Groups in Shorobe and Tubu will be engaged individually to identify key conflict issues around natural resources harvesting in NG32 and NG25 respectively. Parallel dialogue will be facilitated with the lease-holders for the respective CHAs. A dialogue among resource-use groups will then be facilitated to jointly debate and acknowledge conflict issues pertinent to each user group. HOORC will also facilitate the formation of Resource Management Committees at each Project site, which in turn shall be responsible for engaging the participation of HATAB, TLB, DoT, HOORC and BWMA in the development and implementation of Joint Resources Management Plans. The other responsibility of the Resource Management Committees is to organize sustainable harvesting of resources within the concession areas in question. Consultations with relevant stakeholders to identify a local arbitrator will be coordinated by HOORC.

157 Private Sector re-invest in wetland BD: The development of the District Tourism Strategy by the ODMP will involve all stakeholders in the District through its extensive consultation process. This process will also include tourists visiting the Okavango Delta as well as local and international tour operators. An information centre placed at the Airport shall provide a mechanism for educating tourists and tour operators about conservation issues in the Project areas. The Project will facilitate participation from HATAB, DoT, tour operators and local communities in a study on tourism consumer surplus, and engage with tourism operators on a one-on-one basis for the establishment of a joint outlay scheme for conservation projects in the Delta. The functioning and management of the scheme shall be formulated in all encompassing forum. This initiative will be carried out in the context of the wider efforts to improve management capacity in the Delta.

Outcome 4: BD-friendly management methods are inducted into fisheries production systems

158 BD-friendly management practices demonstrated for fisheries sector: This sector is comprised of many stakeholders, but key players include DWNP, HOORC, fishers, TLB, DoT and spot-fishing companies. These bodies will be brought together in a number of participatory planning workshops facilitated by the Project. A series of site-specific workshops will be held to develop management plans for recognized fishing grounds. The varied composition of the fisheries industry (including women fishers, subsistence and commercial fishers as well as spot-fishing lodges) is highly recognized and as such, each group's needs and issues will be discussed individually to ensure group cohesion before meetings of representatives. Issues placing participation at stake are language and information barriers. These will be addressed through group workshops which will also address equitable sharing of management responsibilities and benefit-sharing of the fisheries resource. Through intensive engagement with fish harvesters (traditional and commercial) and sport fishing operators, agreement will be generated on the establishment of Community Fishing Concession Areas in pilot sites. Other stakeholders utilizing resources within the pilot sites will be the reed and grass harvesters, water transport users and livestock owners. These will be consulted following the formation of the fish concession body, with which they will directly enter into dialogue.

159 BD safeguards are incorporated into national aquaculture programs: The ODMP's participatory approach is being used by the DEA in undertaking a policy review under the frame of the ODMP. The same approach will be used in the process of incorporating biodiversity conservation objectives into aquaculture developments during the revision of the EIA policy and other District regulatory instruments. Staff of DWNP-Fisheries Unit will be the main recipient of training in undertaking assessments of aquaculture proposals.

Table 1. Stakeholder Involvement Matrix.

Key Stakeholder	Mandate and current role in BD conservation	Interest in Project
University of Botswana – Harry-Oppenheimer Okavango Research Centre (HOORC)	▪ Promoting multi-disciplinary applied research and training in wetland and watershed management for sustainable development locally, regionally and internationally.	▪ Lead implementing agent in Project ▪ Data management
Department of Environmental Affairs	▪ Development and implementation of the ODMP ▪ Development and revision of environmental policies ▪ Strategic Environmental Assessment ▪ Development of national natural resources conservation strategies ▪ Coordination of the implementation of environmental policies ▪ Secretariat for international environmental conventions to which Botswana is party	▪ Review of EIA to incorporate aquaculture issues ▪ Policy review to include BD conservation ▪ Integrative planning
Tawana Land Board (TLB)	▪ Management and administration of tribal land. The TLB is there to ensure the effective control of the utilization, distribution and maintenance of land in tribal land.	▪ Resolution of conflicts and allocation of user rights over land in communal areas (including wetland) ▪ Monitoring of BD conservation practices by concessionaires in allocated areas

Key Stakeholder	Mandate and current role in BD conservation	Interest in Project
Department of Wildlife and National Parks	▪ Wildlife management in WMA and in communal areas ▪ Wildlife conservation in protected areas (Moremi Game Reserve) ▪ Local community based natural resource conservation ▪ Natural resources monitoring and evaluation ▪ Wildlife off-take management	▪ Resource-user based BD monitoring and evaluation ▪ Conflict resolution between private sector and local communities using the same resources ▪ Fisheries policy and regulations include aquaculture ▪ Fish monitoring and evaluation ▪ MOMS
Private Sector – Tourism operator	▪ Marketing and development of the tourism industry ▪ Natural resources monitoring within areas of operation	▪ BD monitoring indices and techniques ▪ Standards, grading system and awards for operations ▪ BD friendly waste management options ▪ Adaptive management ▪ Joint management committees
Department of Water Affairs (DWA)	▪ Management and distribution of water resources in the District and the development of long-term District-wide water resources management plans	▪ Water quality indices ▪ Liquid waste management ▪ Hydro-ecological models ▪ Riparian woodland monitoring
Botswana Bureau of Standards (BOBS)	▪ Development and maintenance of production and service delivery quality standards.	▪ Tourism operation standards to include BD conservation practices ▪ Award system a san incentive for the maintenance of BD conservation practices by the private sector.
Hotel and Tourism Association of Botswana (HATAB) and Botswana Wildlife Management Association (BWMA)	▪ Maintenance of standards of operation, ethics and codes of conduct of tourism practices ▪ Marketing and development of the tourism industry. ▪ Lobbying for policy development and review for the promotion of security to investment in the tourism industry.	▪ Standards of operation ▪ Certification systems ▪ Monitoring of standards
North West District Council (NWDC) - Environmental Health Department (EHD)	▪ Waste management strategies ▪ Liquid and solid waste disposal	▪ Liquid waste polishing systems ▪ Riparian woodland monitoring ▪ Hydro-ecological models ▪ EIA requirements incorporating BD conservation for water developments projects.
Kalahari Conservation Society (KCS)	▪ Capacity building of local communities and other stakeholders to participate in decision making in water resources management. ▪ Water resources management	▪ Basin wide water resources management ▪ Water resources knowledge management
World Conservation Union (IUCN)	▪ Promote sustainable management of natural resources and conservation of biodiversity in Botswana based on equitable distribution of and access to natural resources ▪ Support participatory community based natural resource management	▪ Water resources knowledge management ▪ Sustainable management of natural resources

Key Stakeholder	Mandate and current role in BD conservation	Interest in Project
	and incorporation of indigenous knowledge systems in conservation; and ▪ Support and develop partnership activities with the government, environmental NGOs and the private sector of Botswana.	▪ Conservation of biodiversity ▪ Equitable distribution of and access to natural resources ▪ Participatory community based natural resource management ▪ Indigenous knowledge management systems in conservation ▪ Partnership activities with the government, environmental NGOs and the private sector
Community level resource users	▪ primary natural resource consumers for both subsistence and commercial livelihood purposes ▪ Village-based conservation committees (e.g. Fire Committee, Farmers Committee) ▪ Community-based natural resources utilization programmes	▪ BD Monitoring ▪ Development of conflict resolution strategies ▪ Adaptive management ▪ Joint management systems

Table 2. Roles and responsibilities of Project implementers.

Outputs	Responsible Party	Role
1.1 Enabling policy and regulatory framework in place (including NWMP and EIA)	NCSA TLB DWNP	➢ Establish links to NWMP process to integrate BD objectives ➢ Incorporate BD principles into sectoral EIA guidelines ➢ Passage and implementation of NWPS ➢ Review of Tribal Land Act (user rights) ➢ Review and redrafting of Concession lease agreements ➢ Review of WMA regulations to integrate BD
1.2 Cross-sectoral institutional cooperation framework in place	NCSA NCSA/ODMP	➢ Implementation of NWPS and run ODMP Project steering committee ➢ Facilitation of District level integrative planning, establish cross-cutting fora and develop communication strategy and land use/land management plan
1.3 BD conservation objectives integrated into ODMP	HOORC	➢ Training workshops on BD for ODMP sectors
1.4 Biodiversity monitoring system and knowledge management systems in place	HOORC DWNP	➢ Establishment of BD data communication, information dissemination and feedback networks ➢ Implementation of MOMS
2.1 BD/ecological parameters integrated into hydrological modelling	ODMP/DWA HOORC	➢ Development of hydrological model ➢ Development of hydro-ecological model
2.2 Strengthened Institutional capacities to apply BD objectives in regulating water resources harvesting	HOORC	➢ BD incorporation into the assessment of EIAs for water abstraction proposals for DWA and NCSA
2.3 Wetland management adapted to maintain wetland ecosystem processes	HOORC IUCN UVA KCS	➢ Assessment of resource management strategies, setting BD baseline and BD targets, setting BD indices, identifying BD champions and training of champions in BD monitoring. ➢ Development of management and monitoring systems for riparian woodlands ➢ Mapping of floodplain classes and aquatic alien invasive species ➢ Implementation of riparian woodland monitoring program ➢ Development of water quality monitoring indices ➢ Implementation of the fresh water biodiversity Project ➢ Development of management and monitoring systems for riparian woodland ➢ Dissemination of information to OKACOM for basin-wide decision making

Outputs	Responsible Party	Role
3.1 Quality/certification system established	HOORC/HATAB DoT/BOBS	➢ Facilitate the development of BD-based certification and award system ➢ Incorporation of certification and award system in the tourism operation licensing process ➢ Adoption and enforcement of certification and award system among its membership
3.2 Waste management systems improved (including oil	HOORC NWDC-Environmental Health Unit	➢ Facilitation of the development of alternative sewage effluent polishing systems and the establishment of fuel transportation standards and emergency plan ➢ Establishment of fuel transportation and storage standards and commitment to emergency plan
3.3 Joint management systems for veldt products and tourism developed.	HOORC TLB	➢ Conduct BD sensitization workshops for communities and tour operators and set up resource management committees in pilot areas. ➢ Facilitate the development and adoption of management plans ➢ Identification of impartial arbitrator to resolve conflicts ➢ Development and enforcement of joint management plans
3.4 Revolving fund mechanisms established for BD conservation.	HATAB	➢ Establish administration body, fund procedures and fundraising
4.1 BD friendly management practices demonstrated for fisheries sector.	HOORC/Fisheries Unit	➢ Assessment of resource management strategies, setting BD baseline and BD targets, setting BD indices, identifying BD champions and training of champions in BD monitoring. ➢ Fish stock assessment, establishment of user rights and development of management strategies
4.2 BD safeguards are incorporated into national aquaculture programs	Fisheries Unit NCSA	➢ Production of regulatory instruments to control use of aquaculture species. ➢ Incorporate BD friendly aquaculture practices into EIA requirements

*NCSA is now DEA

PART 4: THREATS AND ROOT CAUSES MATRIX

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
Sector: Water: Water inflow and its variability are the major determinants of ecological processes within the Okavango Delta system. Water abstraction for domestic and agricultural purposes currently is not considered an immediate problem. It is currently occurring on a limited scale in the Okavango main channel to supply villages in the west and eastern panhandle and along the west as far as Gumare. Water harvesting in the upstream areas (Namibia and Angola) occurs on a small scale presently, but it is expected to grow. The minimum ecological flow (or ecological reserve) needed to maintain major ecological processes to sustain wetland biodiversity has not been established for the Delta. There is a risk that water abstraction based solely on hydrological systems modeling and perceived hydrological needs may lead to harvest levels that are incompatible with biodiversity management needs.				
Hydrological interventions • Changes of hydrology of wetland ecosystems affecting species distribution[26] • Major changes in ecological processes resulting in habitat loss[27] • Increased soil salinization from rising ground water levels[28]	• Economic/development imperatives override biodiversity conservation and sustainability objectives[29] • Changes in water balance as a result of global climate change	Systemic/Insitutional Capacity • No formalised mechanisims[30] for sharing BD information within existing planning processes • Technical and management know how • Absence of links between hydrological modelling and ecology. • Okavango Delta is a	Systemic/Insitutional Capacity • Capacity built for Department of Water Affairs to effectively integrate BD into decision-making processes (including AVCU). • BD information is made available to decision makers Technical and management know how • Monitoring of riparian woodland biodiversity and	Sustainable Development Baseline • ODMP/Hydrology and water resources component • HOORC ecological-hydrological modeling research Baseline • OKACOM planning process • KCS-Every River Has Its People Project • NGO watchdogs (CI,

[26] Hydrological changes (increase/decrease in inflow, changes in hydroperiod or changes in rate of natural processes, e.g. channel blockages) resulting from water abstraction, land cover change in the catchment (deforestation) and upstream damming for hydropower or other purposes.

[27] Ecological processes related to anthropogenic nutrient (mainly intensive agriculture) and sediment inflow changes. These include ecosystem renewal (the process of aggradation of the main channel and its subsequent avulsion to flood another part of the Delta with a cyclicity of about 100 years) and potential increases in nutrient flow leading to changes in aquatic plant growth rate and subsequent changes in channel blockage rate or large-scale species composition changes.

[28] Ground water beneath the islands in the Delta is characterized by toxic levels of cations, particularly sodium (> 10 000 ppm). Low island soil salinity is maintained by ground water pumping driven by evapotranspiration of riparian woodland trees. Major changes in canopy cover in the riparian woodland will upset this balance, with the result that ground water levels will rise bringing salinity to the surface.

[29] Proximate causes of hydrological change maybe the need to develop domestic supply of water to rural villages, channel clearing for navigation purposes, clearing of riparian woodlands for cultivation. The underlying causes for these relate to ineffective regulation, under valuation of ecosystem benefits, and land tenure issues.

[30] Planning is fragmented and sector-based at present

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
		complex ecosystem which is as yet not fully understood.	ecology • Development of links between floodplain ecology and hydrology.	KCS • Environmental impact studies on developments upstream of the Delta. • Unblocking channels (DWA)
Sector: Tourism: The Okavango Delta ecosystem is a major storehouse of biodiversity and home to certain rare and endangered wildlife species such as sitatunga, wattled cranes, slaty egret, amongst many others. As a result of this and its near-pristine wilderness, it is a major ecotourism attraction globally (>50 000 foreign tourists per annum). However, several issues surrounding tourism development still remain unresolved and pose serious threats to biodiversity conservation. These include lack of knowledge on tourism carrying capacities, tourism-derived impacts on biodiversity and a significant lack of reinvestment in resource management. In addition to these there are a number of conflicts between tourism and subsistence resource use.				
Rapid tourism development • Increasing stress levels on wildlife and environment due to lodge development, viewing and transport activities • Pollution from uncontrolled solid and liquid waste and petroleum compounds spills in the vicinity of the river system. • Increasing conflict between commercial and subsistence resource users.	• Economic drive to increase tourism numbers and infrastructure for greater profit • BD not recognised as a monitoring priority in lease agreements. • Opaque regulatory framework[31] under which information about resource rights and responsibilities is not easily accessible to resource user groups. • .	Systemic/Institutional Capacity • Capacities of local authorities to assimilate and make mangement decisions based on BD information are low • Limited outreach from regulatory authorities to resource users regarding resource user rights • Limited coordination between regulatory bodies Technical/Management know how • Ecological tourism carrying capacity of system unknown (development based on notion that environmental monitoring feedback be used to adjust carrying capacities) Property rights	Systemic/Institutional Capacity • Capacity building of local authorities to assimilate and make management decisions based on BD • Build communication links between regulatory bodies, independent brokers and resource users. • Collection and processing of pilot baseline BD data and providing feedback to stakeholders. • Establish mechanisms for reinvestment of tourism revenues into BD resource base • Establish joint CHA management committees Technical/Management Know how • Demonstrate BD friendly liquid waste management	Sustainable Development Baseline • ODMP (Ecotourism developments in the Okavango Delta supported and promoted based on improved tourism planning, management and monitoring) • ODMP consultation and conflict resolution strategy • ODMP Limits of Acceptable Change and tourism management model • ODMP/Waste management component Baseline • Ngamiland District Settlement Strategy

[31] Open access to subsistence natural resource use is a right under the Tribal Land Act, while exclusive commercial tourism rights have been granted in CHAs which are on tribal land

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
		• Open access resource use framework Marketing/Standards • The potential marketing value of BD friendly eco-tourism practices not realised	practices Marketing/Standards • Establish certification and awards system for BD friendly eco-tourism practices	(2004 – 2027) • Okavango Panhandle Management Plan • CHA management plans
• Increase and spread of aquatic alien plant species	• Increase in tourism activities (boat, vehicle and people movement, nutrient changes) and other land use changes. Potential sources of invasion exist in all neighbouring countires, e.g. Eichhornia crassipes .	Systemic Capacity • Insufficient capacity in resource regulators to monitor movement and distribution, or to prevent accidental introduction Technical/Management Know how • Very large complex system which is often inaccessible and difficult to monitor or are implement control within.	Systemic Capacity • Build capacity for Department of Water Affairs to effectively integrate BD into decision-making and management processes (including AVCU).	Sustainable Development Baseline • ODMP/Hydrology and water resources component • Improve liaison between DWA, ARB, DAHP and Customs (stringent control measures on movement across veterinary fences and borders (ODMP) Baseline • DWA Aquatic Vegetation Control Unit (Biological control of Salvinia-weevils)
Sector: Fisheries: The Okavango Delta fishery is comprised of 71 known fish species, of which only a few (mainly cichlids) contribute to the commercial fishery. Fishers are made up of subsistence, commercial and sport, with the traditional subsistence fishers being the most numerous. In 1998, the Fisheries Division made an estimate of 3243 fishers of all categories for the Okavango Delta ecosystem. Estimates of total standing stock is between 8000-10000 tonnes; estimated annual harvest is in the order of 500-800 tonnes. The current open access situation has lead to conflicts between user groups. In addition large variation in estimates of fish stocks make it difficult for management decisions to be made, with possible adverse impact on biodiversity.				
• Over harvesting of fish stock (with accompanying inter-specific	• Economic imperatives to maximise returns from resource and increased demand for fish	Systemic/Institutional Capacity • Absence of reliable data on fish resources and BD impacts of harvests.	Systemic/Institutional Capacity • Build institutional capacity for fishers in fish resources management using spatial	Sustainable Development Baseline • ODMP conflict

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
impacts on biodiversity up the trophic chain[32]) • Accidental introduction of exotic species (including pathogens) from aquaculture	1. open access resource issues leads to localised over-exploitation of standing fish stock 2. preference for farming of recognised exotic aquaculture species over less known indigenous species.	• Limited implementation of fisheries regulatory instruments • Lack of regulations concerning aquaculture • Institutional screening processes to detect potential introduction of exotics not well developed Property rights • Open access to fish resources (Conflicts among commercial (including recreational)and between commercial and subsistence fishers)	management tools that protect wetland biodiversity (CBO) • Development of mechanisms to allow biodiversity information flow between resource users and managers/regulators. • Incorporation of BD friendly aquaculture principles into fisheries policy and regulations Property rights • Facilitate designation of spatially defined user rights and guidelines for exercise of those rights Technical and management know how • Sustainable management systems for designated fish management areas (e.g. rotational set asides)	resolution strategy and action plan • A framework for co-management of shared fish stocks between Namibia and Botswana established (standardized survey methodologies/ data base of fish resource information • A system for long term ecological monitoring of fish stocks established; Baseline • Fisheries regulations (submitted to Parliament in 1997) • Fish stock assessment Project by Fisheries Unit. • Okavango Fishermen Association

[32] Fishing intensity is not currently considered to be unsustainable over the Delta as a whole, but localized pressures are evident. However, it is expected that fishing intensity will increase over time, leading to threats of over harvests.

PART 5: SITE DESCRIPTIONS AND MAPS

160 Project themes identified include fisheries resources management, riparian woodland monitoring, management of natural resource use in concession areas and piloting effluent polishing mechanisms. 11 sites have been selected for piloting these themes; the selection was based on outputs from the Threats analysis and the following criteria:

1. Hotspot analysis: areas where concentration of various resource users exists, especially those with existing and potential resource use conflicts. These include concession areas where issues of conflict arise from concessionaires assuming that exclusive tourism rights include rights of access to resources in the area, while local communities exercise traditional rights over resources in the same area without due consideration for the wilderness expectations of tourists. Other conflicts occur in fisheries, where subsistence, commercial and recreational or tourist operation fishers fail to agree on common fishing principles and ending up blaming each other for depletion of the fish stocks.
2. Accessibility: Accessibility by road was a criterion for selecting pilot sites
3. Ongoing management and monitoring projects: areas with ongoing resource management and or monitoring programme, especially those involving local communities, were prioritised on the grounds that resource users here would be more receptive, because of their familiarity to management and monitoring projects. The potential for partnerships between user groups in these areas was also taken into consideration, following consultations with the beneficiary groups.

DESCRIPTION OF SELECTED SITES

161 Fisheries: Two sites were selected for piloting fisheries issues: Ngarange and Samochima areas (see Annex 1, Map 4). The DWNP-FU has been involved in fish monitoring projects involving data collection through the Okavango Fishermen's Association in these areas. Each of the villages has an active OFA village committee. Both areas are foci of high fishing intensity, but in Samochima there are also current fisheries conflict issues while at Ngarange so far conflicts are not an issue.

- Samochima site: Situated about 10 km from Shakawe, this area has 3 tourism companies operating in it as well as commercial and subsistence fishermen mainly from the Samochima village. The area consists of a stretch of about 15km along the west bank of the main Okavango River including Drotsky's, Shakawe Fishing Camp and Tsaro Lodge, extending into the Panhandle for a width of approximately 7km.
- Ngarange site: On the east bank of the panhandle about 20 km from the Botswana/Namibia border. Fishing is a key contributor to the household economy of the Ngarange community both commercially and on a subsistence basis. There appear to be no current major conflicts over the fish resource.

Waste Management

162 Four sites will be used in the demonstration of biological effluent polishing system. These include one community-managed, and three private sector tourism establishments in the Delta proper (Annex 1, Map 4). The Okavango Polers Trust Mberoba Camp has been selected as a community-managed establishment, while the selection of private sector establishments will be based on expressed interest and be guided by the set selection criteria.

- Mberoba Camp: The camp, near Seronga at the apex of the Delta fan, is managed by the Okavango Polers Trust made up of about 100 *mokoro* (dugout canoe) polers. It is a backpacker's destination and can take up to 50 campers a day. During the peak tourism season the camp can have average daily occupancy rates of about 20. Bathroom facilities exist in the form of flush toilets and showers and are catered for by a normal septic tank and soak away system..

Joint Resource Management in Tourism Concession areas

163 Controlled Hunting Areas NG 25 and NG 32 with their adjacent villages of Tubu and Shorobe respectively have been selected for the demonstration of strategies to harmonise conflicts between resource user groups.

164 NG 25 is a multi purpose use CHA in which both hunting and photographic tourism can be undertaken. It is located northwest of the Moremi Game Reserve (Annex 1, Map 4). Tawana Land Board has entered into a commercial lease agreement with a private sector operator. The Tubu community to the west of the CHA consider the area to be part of their traditional subsistence provenance.

165 Tubu village is on the now dry Thaoge River, on the western margin of the Delta. Livelihood activities for villagers are still largely dependent on natural resources. Traditional areas of natural resource collection extend across the western Buffalo Fence into concession areas NG 24, 25 and 26. The progressive drying of the Thaoge distributary has resulted in an increased intensity of use of the Karongana system to the east, partly within the WMA. Villagers have been denied access to these resources on occasion and this has caused tension between locals and concessionaires.

166 This concession area is community run under the leadership of the Okavango Kopano Mokoro Community Trust (OKMCT). The OKMCT is made up of community of Ditshiping, Daunara, Xaxaba, Boro and Xaraxau villages. The community has a 15 year head lease agreement with the Tawana Land Board. Parts of this area are sub-leased to private companies to run photographic and safari hunting ventures.

167 Shorobe village is situated to the east of NG32, outside of the Buffalo fence. Although this village is traditionally part of the socio-economic network of and has kinship ties to the villages making up the OKMCT, it was excluded from benefiting from the CBNRM arrangements provided for by the commercial utilisation of wildlife resources in area NG 32. This village has been trying to attach itself to the CBNRM programme in NG32 as well as trying to set up some arrangements around the area outside the Buffalo fence.

Riparian Woodlands Monitoring

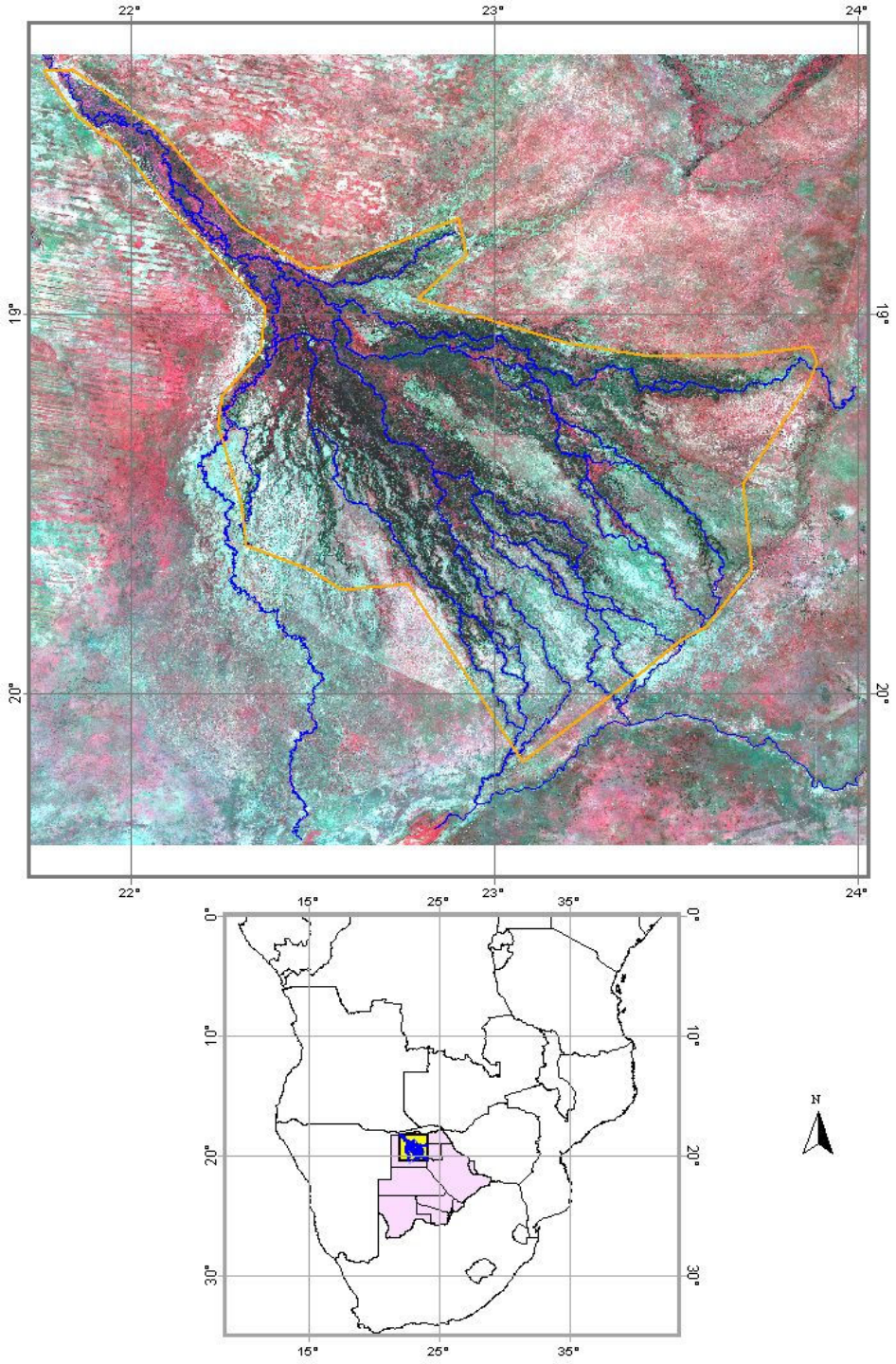
168 Three specific sites have been selected for monitoring the health of riparian woodland.

- Chitabe Camp is located in the south eastern part of the Delta in CHA NG 31 (Annex 1, Map 4). This area has been chosen due to its proximity to the Moremi Game Reserve. Prior to the ban on elephant hunting in the 1980s and early 1990s higher densities occurred on the eastern side of Chief's Island, with the MGR acting as a refuge. Woodland in this area will be representative of these higher concentrations.

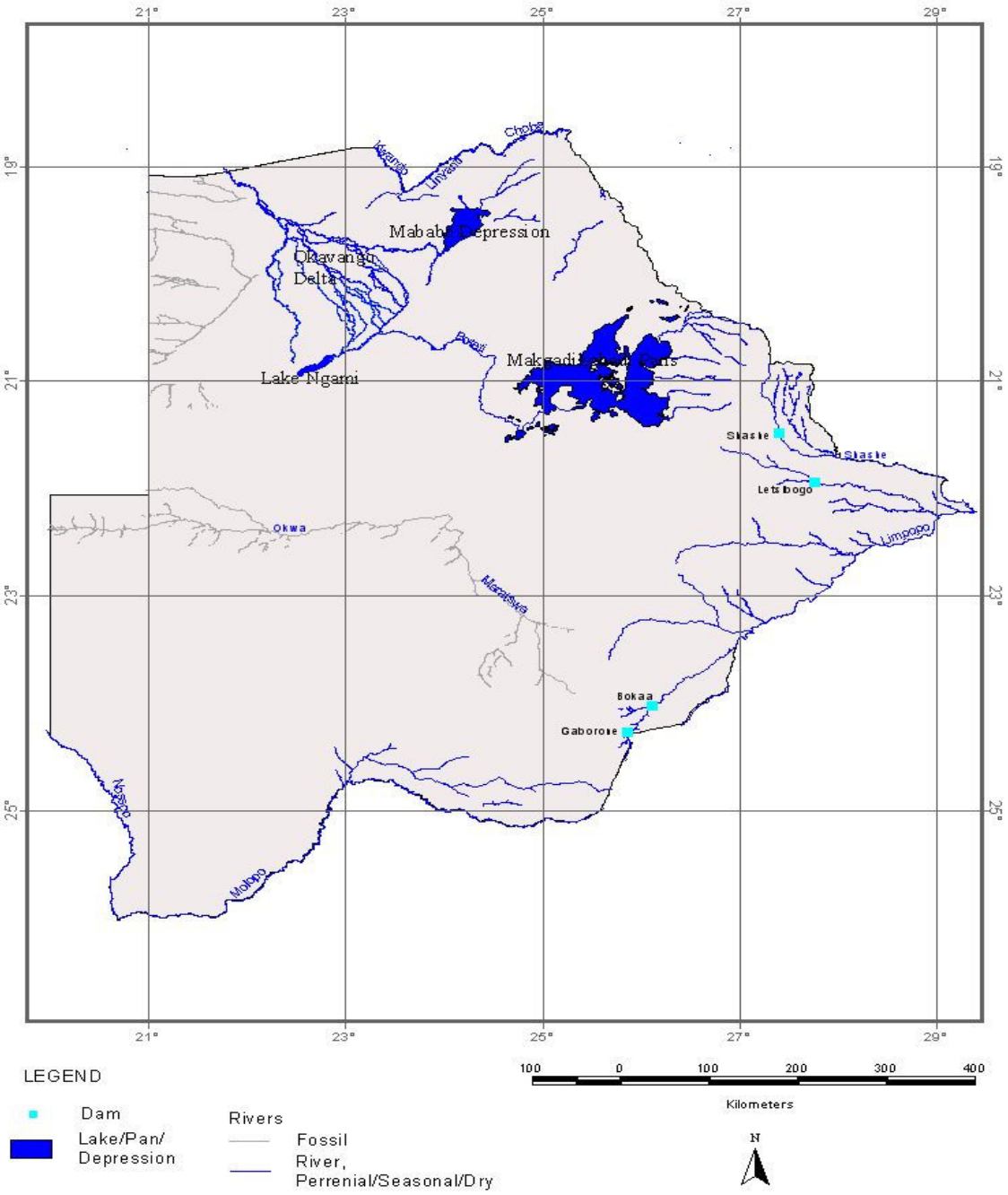
- Nxaraga Research Camp is the UB-HOORC research station in the Delta. This camp already has facilities including radio communication. The area is in the Moremi Game Reserve as well as alongside a string of tourism establishments including Gunns Camp, Delta Camp and Oddballs. There has been a fair amount of tourism activities experienced in this area over time with the first tourism camp established in the late seventies.

- Sedibana/Nxioga village: People have been settled around the Sedibana/Nxioga area from the early 1900s. Two further settlements have been established in the area to satisfy labour and personnel demands of 2 nearby tourism camps. Xaxaba is located 4 km to the north of Sedibana, while Thabazimbi is located about 7km to its southeast. Both were setup in the early 1980s in response to the demand for *mokoro* polers. Woodlands in this area will be representative of a long period of human use and increased demand for trees for dugout canoes.

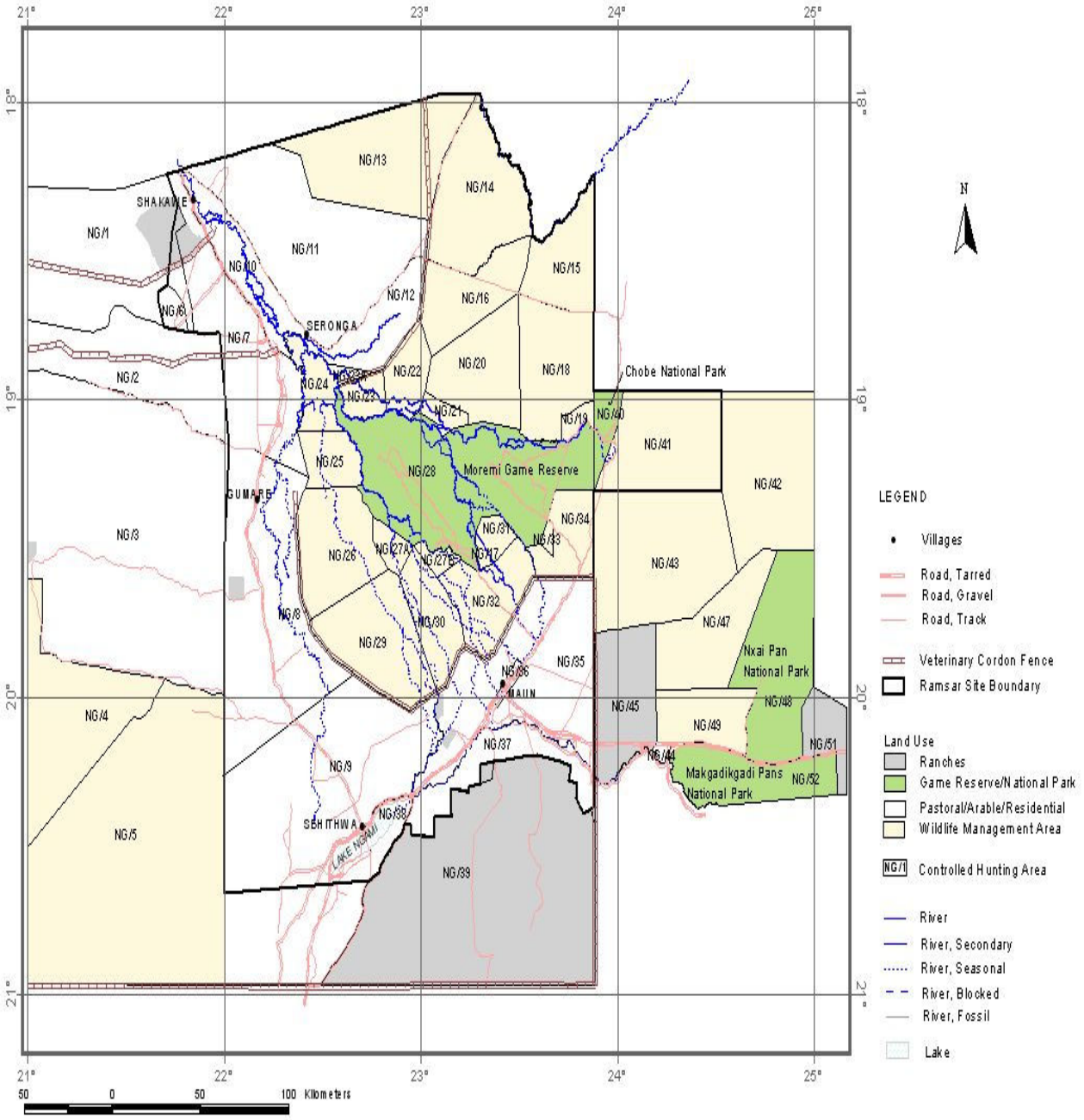
Map 1. Location map of the Okavango Delta showing Project area



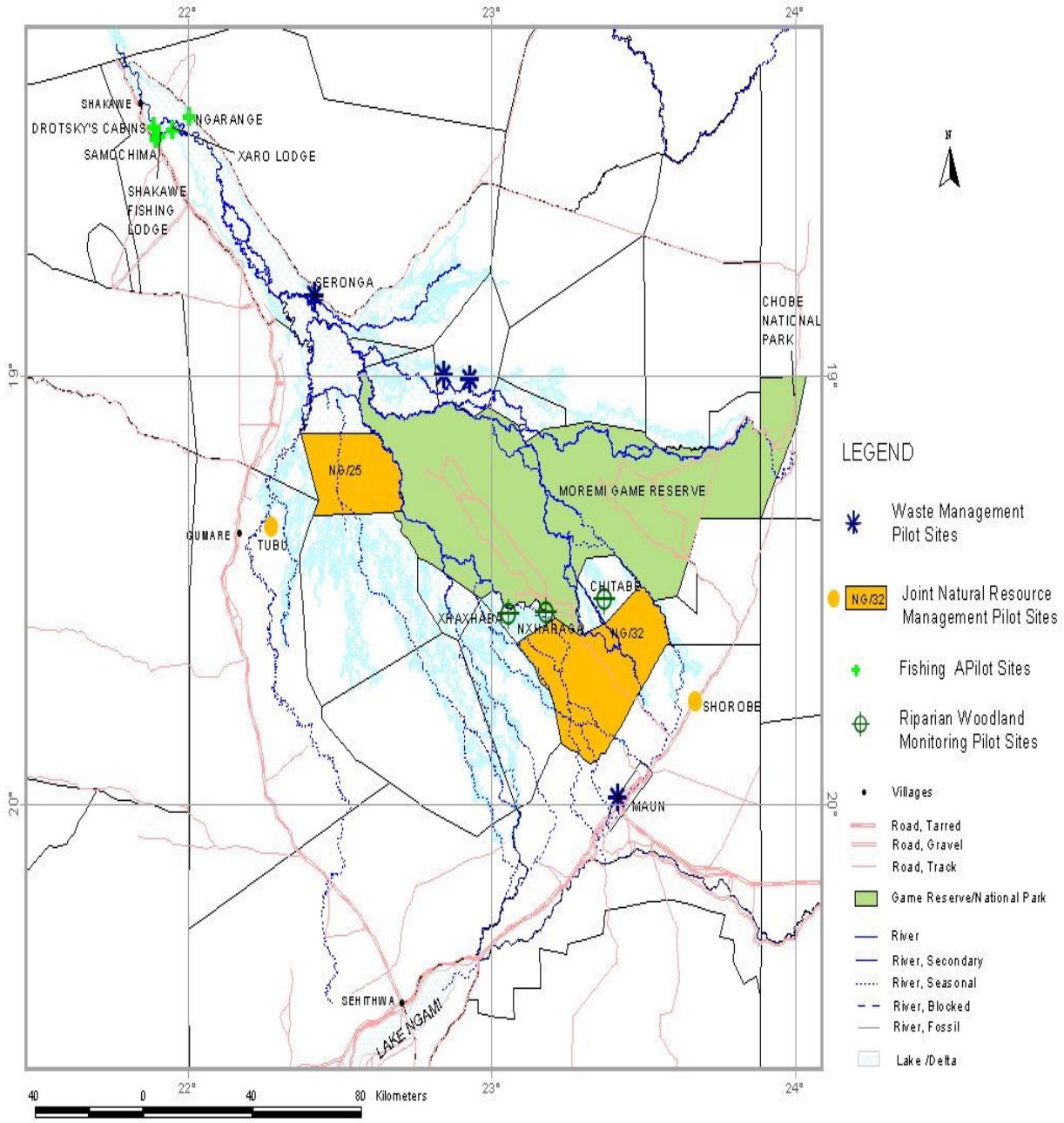
Map 2. Major wetlands in Botswana



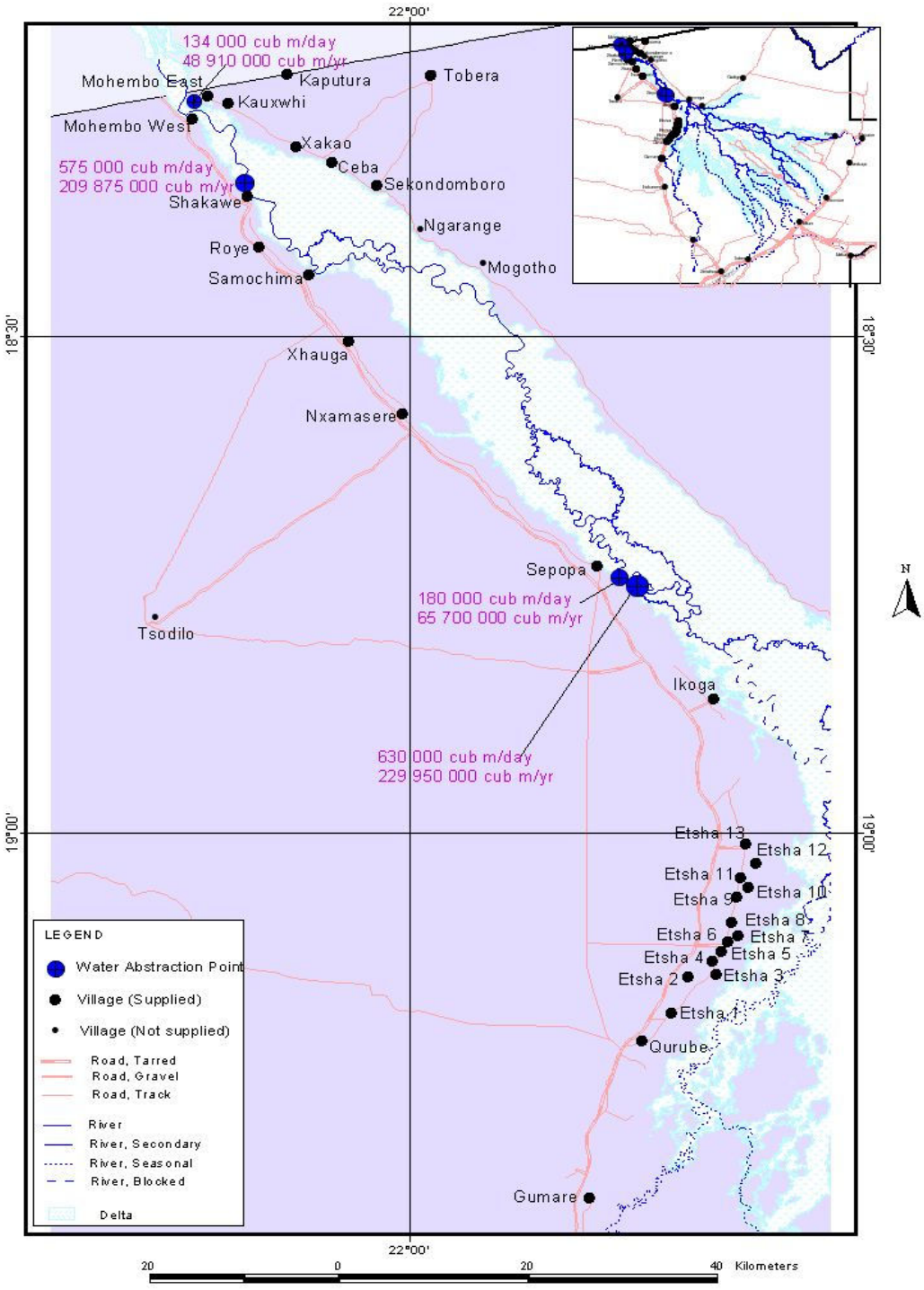
Map 3. Land use in the Ngamiland District (NG = Controlled Hunting Areas (CHAs)



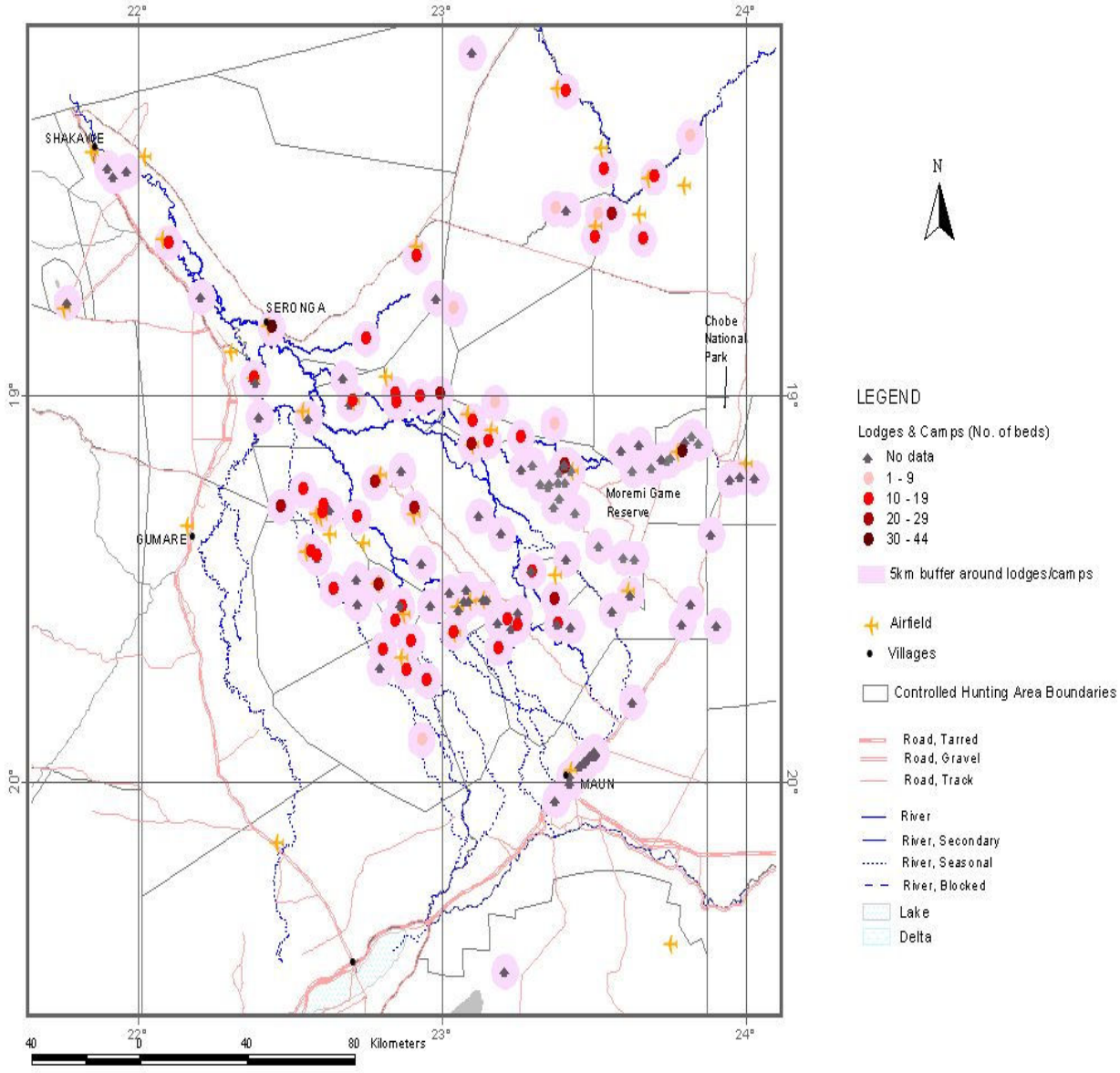
Map 4. Project pilot sites for fisheries, waste management, joint natural resources management and riparian woodlands



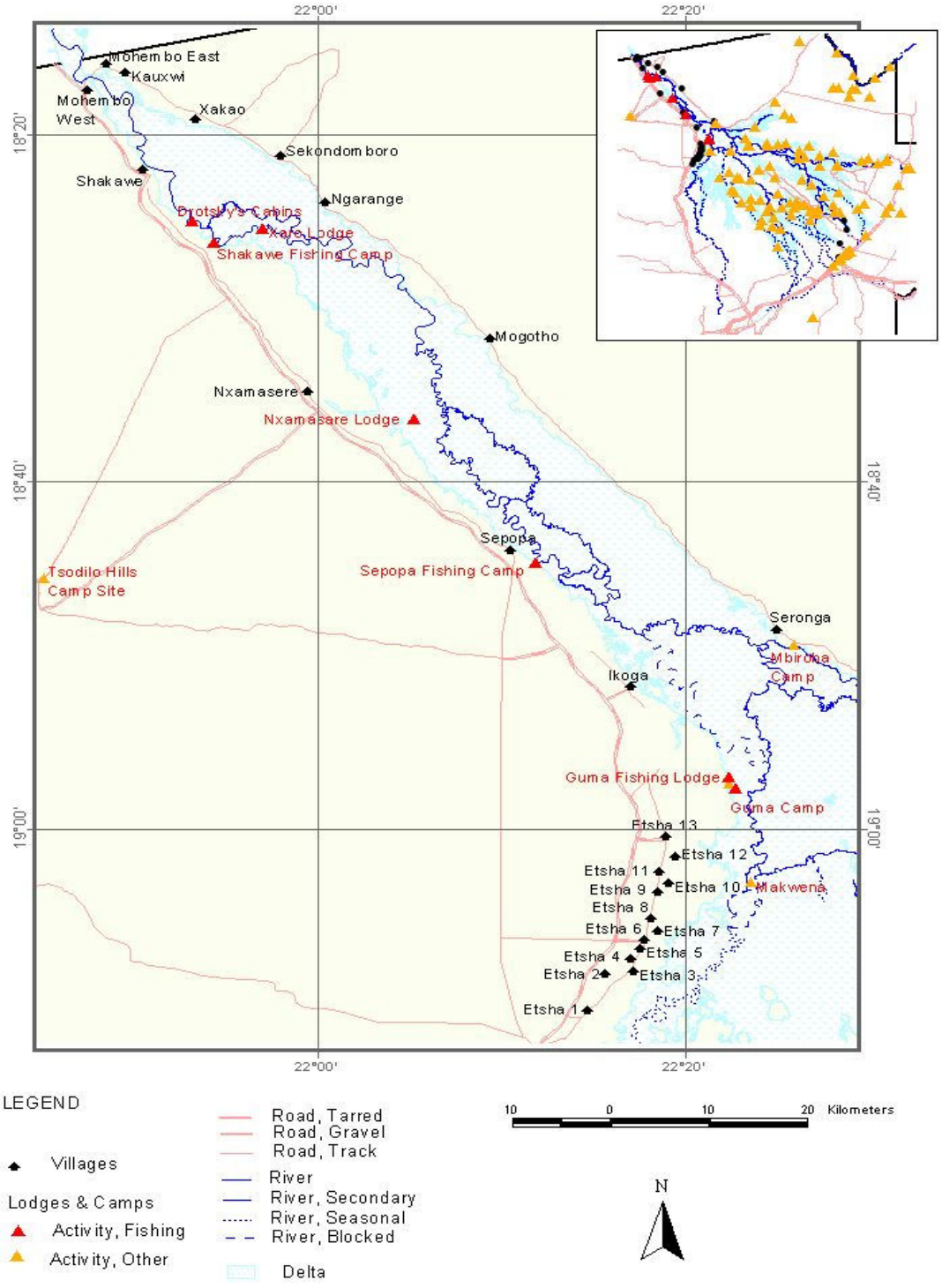
Map 5. Water abstraction hotspots in the Okavango Panhandle



Map 6. Tourism hotspots in the Delta



Map 7. Fishing hotspots in the Delta



PART 6: MONITORING AND EVALUATION PLAN

169 Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures. The Logical Framework Matrix in Section II of the Project Document provides impact indicators for Project implementation along with their corresponding means of verification. These will form the basis on which the Project's Monitoring and Evaluation system will be built. This Annex includes: (i) a detailed explanation of the monitoring and reporting system for the Project; (ii) a presentation of the evaluation system; (iii) a matrix presenting the workplan and the budget for M&E section; and (iv) the Result Measurement Table.

I. MONITORING AND REPORTING

A. Project Inception Phase

170 The Project Steering Committee will conduct an inception workshop with the key stakeholders responsible for Project management and implementation at the commencement of the Project with the aim to assist the Project team to understand and take ownership of the Project's goals and objectives, as well as finalize preparation of the Project's first annual work plan on the basis of the Project's logframe matrix.

171 The key objectives of the Inception Workshop are to:

(i) review the logframe (indicators, means of verification, assumptions), imparting additional detail as needed;
(ii) finalize the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the Project;
(iii) develop specific targets for the first year implementation progress indicators;
(iv) introduce Project staff with the representatives of the UNDP Country Office and the Regional Coordinating Unit (RCU);
(v) detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis à vis the Project team;
(vi) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Review Meetings, as well as mid-term and final evaluations;
(vii) inform the Project team on UNDP Project related budgetary planning, budget reviews, and mandatory budget rephasings;
(viii) present the ToR for Project staff and decision-making structures in order to clarify each party's roles, functions, and responsibilities, including reporting and communication lines, and conflict resolution mechanisms;

B. Monitoring responsibilities and events

172 The Project Steering Committee in consultation with relevant stakeholders will develop a detailed schedule of Project reviews meetings, which will be incorporated in the Project Inception Report. The schedule will include: (i) tentative time frames for Tripartite Reviews, Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) Project related Monitoring and Evaluation activities.

173 Day to day monitoring of implementation progress will be the responsibility of the Project Coordinator, based on the Project's Annual Work Plan and its indicators. The Project Steering Committee will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. Measurement of impact indicators related to global benefits will occur according to the schedules defined in the

Inception Workshop and tentatively outlined in the indicative Impact Measurement Template at the end of this Annex. The measurement, of these will be undertaken through subcontracts with relevant institutions or through specific studies that are to form part of the projects activities.

174 *Periodic monitoring of implementation progress* will be undertaken by the UNDP-CO through quarterly meetings with the Project Steering Committee, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the Project in a timely fashion to ensure smooth implementation of Project activities. UNDP Country Offices and UNDP-GEF RCUs as appropriate will conduct yearly visits to the Okavango Delta to assess first hand Project progress. Any other member of the Project Steering Committee can also accompany, as decided by the SC. A Field Visit Report will be prepared by the CO and circulated no less than one month after the visit to the Project team, all SC members, and UNDP-GEF.

175 Annual Monitoring will occur through the Tripartite Review (TPR). This is the highest policy-level meeting of the parties directly involved in the implementation of a Project. The Project will be subject to Tripartite Review (TPR) at least once every year. The first such meeting will be held within the first twelve months of the start of full implementation. The Project Steering Committee will prepare an Annual Project Report (APR) and submit it to UNDP-CO and the UNDP-GEF regional office at least two weeks prior to the TPR for review and comments. The APR will be used as one of the basic documents for discussions in the TPR meeting. The Project Steering Committee will present the APR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants and will inform the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each Project component may also be conducted if necessary. The TPR has the authority to suspend disbursement if Project performance benchmarks (developed at the inception workshop) are not met.

176 Terminal Tripartite Review (TTR) is held in the last month of Project operations. The Project Steering Committee is responsible for preparing the Terminal Report and submitting it to UNDP-CO and LAC-GEF's Regional Coordinating Unit. It shall be prepared in draft at least two months in advance of the TTR in order to allow review, and will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the Project as a whole, paying particular attention to whether the Project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of Project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.

C. Project Monitoring Reporting

177 The Project Coordinator in conjunction with the UNDP-GEF will be responsible for the preparation and submission of the following reports that form part of the monitoring process:

178 Inception Report (IR) - will be prepared immediately following the Inception Workshop. It will include a detailed Firs Year/ Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the Project. This Work Plan would include the dates of specific field visits, support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as time-frames for meetings of the Project's decision making structures. The Report will also include the detailed Project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure Project performance during the targeted 12 months time-frame. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of Project related partners. In addition, a section will be included on progress to date on Project establishment and start-up activities and an update of any changed external conditions that may effect Project implementation. The finalized report will be distributed to the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit and after that to the Project

counterparts who will be given a period of one calendar month in which to respond with comments or queries.

179 Annual Project Report (APR) - is a UNDP requirement and part of UNDP's Country Office central oversight, monitoring and Project management. It is a self -assessment report by Project management to the CO and provides input to the country office reporting process and the ROAR, as well as forming a key input to the Tripartite Project Review. An APR will be prepared on an annual basis prior to the Tripartite Project Review, to reflect progress achieved in meeting the Project's Annual Work Plan and assess performance of the Project in contributing to intended outcomes through outputs and partnership work. The format of the APR is flexible but should include:

- An analysis of Project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome;
- The constraints experienced in the progress towards results and the reasons for these;
- The three (at most) major constraints to achievement of results;
- Expenditure reports;
- Lessons learned;
- Clear recommendations for future orientation in addressing key problems in lack of progress.

180 Project Implementation Review - is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for Project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the Project has been under implementation for a year, a Project Implementation Report must be completed by the CO together with the Project. The PIR can be prepared any time during the year and ideally prior to the TPR. The PIR should then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the Project, the executing agency, UNDP CO and the concerned RC. The individual PIRs are collected, reviewed and analyzed by the RCs prior to sending them to the focal area clusters at the UNDP/GEF headquarters. The focal area clusters supported by the UNDP/GEF M&E Unit analyze the PIRs by focal area, theme and region for common issues/results and lessons. The TAs and PTAs play a key role in this consolidating analysis. The focal area PIRs are then discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings

181 Quarterly Progress Reports - Short reports outlining main updates in Project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the Project Steering Committee. The format will be provided.

182 Periodic Thematic Reports - As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the Project Steering Committee will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the Project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the Project team;

183 Project Terminal Report - During the last three months of the Project the Project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met, or not achieved structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

184 Technical Reports -Technical Reports are detailed documents covering specific areas of analysis

or scientific specializations within the overall Project. As part of the Inception Report, the Project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the Project and its sites. These technical reports will represent, as appropriate, the Project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

185 Project Publications-Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The Project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the Project's budget.

II. INDEPENDENT EVALUATION

186 The Project will be subjected to at least two independent external evaluations as follows:

187 Mid-term Evaluation - will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of Project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about Project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the Project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the Project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

188 Final Evaluation - will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

Audit Clause

189 The University of Botswana (UB) will provide the UNDP Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the UB, or by a commercial auditor engaged by the UB/Project.

III. MONITORING AND EVALUATION WORKPLAN AND CORRESPONDING BUDGET

190 Table 1 presents the M&E workplan and corresponding budget.

Table 1. Indicative Monitoring and Evaluation Work plan and corresponding budget.

Type of M&E activity	Responsible Parties	Budget US$ Excluding Project team Staff time	Time frame
Inception Workshop	▪ Project Coordinator ▪ UNDP CO ▪ UNDP GEF	7,000.00	Within first two months of Project start up
Inception Report	▪ Project Team ▪ UNDP CO	500.00	Immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	▪ Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	11,000.00	Start, mid and end of Project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis) + workshop for dissemination	▪ Oversight by Project GEF Technical Advisor and Project Coordinator ▪ Measurements by regional field officers and local IAs	20,000.00	Annually prior to APR/PIR and to the definition of annual work plans
APR and PIR	▪ Project Team ▪ UNDP-CO ▪ UNDP-GEF	None	Annually
TPR and TPR report	▪ Government Counterparts ▪ UNDP CO ▪ Project team ▪ UNDP-GEF Regional Coordinating Unit	None	Every year, upon receipt of APR
Steering Committee Meetings	▪ Project Coordinator ▪ UNDP CO	0	Following Project IW and subsequently at least once a year
Periodic status reports	▪ Project team	6,000.00	To be determined by Project team and UNDP CO
Technical reports	▪ Project team ▪ Hired consultants as needed	50,000.00	To be determined by Project Team and UNDP-CO
Mid-term External Evaluation	▪ Project team ▪ UNDP- CO ▪ UNDP-GEF Regional Coordinating Unit ▪ External Consultants (i.e. evaluation team)	60,000.00	At the mid-point of Project implementation.
Final External Evaluation	▪ Project team, ▪ UNDP-CO ▪ UNDP-GEF Regional Coordinating Unit ▪ External Consultants (i.e. evaluation team)	60,000.00	At the end of Project implementation
Terminal Report	▪ Project team ▪ UNDP-CO ▪ External Consultant	None	At least one month before the end of the Project
Lessons learned	▪ Project team ▪ UNDP-GEF Regional Coordinating Unit	50,000.00	Yearly
Audit	▪ UNDP-CO ▪ Project team	40,000.00	Yearly
TOTAL COST *Excluding Project team staff time and UNDP staff and travel expenses*		323,500.00	

IV. RESULT MEASUREMENT TABLE

191 Table 2 below lists the main impact indicators used, along with the justification for their choice and institutional responsibility for monitoring the indicators.

Table 2. Main indicators, rationale and responsibility for monitoring.

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
Goal: The natural integrity and ecological services provided by Botswana's wetlands are sustained.				
Project objective: Biodiversity management objectives are mainstreamed into the main production sectors of the Okavango Delta.	Total production landscape under improved conservation management increased from 0ha at start of the Project to 10900ha at the end of the Project	BD objectives are currently lacking in District planning processes, thereby putting at risk the global significant BD of the Okavango Delta./Improved conservation of BD can be measured by using area under conservation as proxy	1. Ecotourism operators-BD monitoring, BD friendly activities and reinvestment into conservation. 2. Local communities-joint management systems (private/community) established, BD monitoring and information exchange 2. Fishers-catch per unit effort increased, BD set asides and management plans in place, user rights agreed upon 3. Fisheries Unit-fishing regulatory instruments in place and implemented TLB/DOT-BD monitoring/conservation set as pre-requisite for licensing, BD monitoring enforcement through lease agreements	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) TTR (PMG / PSC / UNDP CO / UNDP/GEF-RCU)
<u>Outcome 1</u> Enabling environment strengthened at both systemic and institutional levels	Wetland conservation plans and actions are integrated into production sector strategies during mid-term review of NDP 9 and during the development of NDP 10	NWPS, which is meant to guide the development of wetland development and conservation plans is in its draft format, and should be passed by Parliament before NDP 9 mid-term review or NDP 10 NDP process is the process by which development is processed in Botswana, therefore incorporation of wetland into the NDP process will ensure its enaction	NCSA -is overseeing the development and lobbying for passing of the NWPS -NCSA responsible for general coordination of natural resources conservation (at policy level)	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU)

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
	ODMP approved as the over-arching District planning tool by Parliament	Sectoral planning is not a good approach in a multiple natural resource use environment like the Okavango Delta, therefore the ODMP is to ensure integrative planning as guided by the ecosystem approach Approval of ODMP at Parliament indicates high level of commitment to sustainable development of the Delta	NCSA-is in the process of developing the ODMP and lobbying for its approval by Parliament	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU)
	50% of BD management actions recommended by OWMC implemented by District regulatory authorities by end of the Project	Currently recommendations that directly affect BD are either very few or sector specific, hence the OWMC is well positioned for cross sectoral integration of BD into planning BD mgt recommendations are made in response to current existing and perceived threats, their implementation is a measure of the degree of commitment to BD conservation by the local authority-mainstreamed into the ODMP process	ODMP/OWMC-Make BD management recommendations and pass them to the DDC GEF Project-ensures that BD management recommendations related to the three main production sectors will reach the DDC through the OWMC	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
	BD mgt requirements are specified in 100% (in all) of TLB lease agreements by the end of the Project	General environmental conservation and economic objectives are the focus of current land leases, but not BD conservation Lease documents legal binding, so a valid measure of conservation friendly practices	TLB-BD objectives integrated into lease agreements and enforced through lease reviews and capacity building in BD conservation	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)
Outcome 2 BD management objectives integrated into the water sector	100% of large scale development proposals assessed using Hydro-ecological scenarios by the end of the Project	Current developments are purely based on hydrological models, which tend to overlook ecological processes/BD conservation Proposals for development in the basin are likely to affect BD in the Delta. Use of hydro-ecological models will allow objective assessment of these effects	UB-HOORC-will fund a PhD based research which focuses on hydro-ecological models. DWA-is developing a hydrological model through the ODMP	Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)
	No more than 20% change in relative proportions (1:1) of permanent and seasonal flooded areas	The proportion is a direct result of flood regime in both annual and long-term variations	HOORC-mapping through satellite image analysis	Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
	No more than 20% change in crown cover of riverine woodlands responsible for regulation of ground water table	Riparian woodlands play a major role in regulating water salinity in the Delta, therefore % change in crown cover of these woodlands is a key indicator for the health of the Delta's ecosystem.	UVA-baseline research aimed at setting up a range of monitoring indices Eco-tourism operators- responsible for the monitoring of agreed indices	Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)
Outcome 3 The tourism sector is directly contributing to BD conservation objectives in the Okavango Delta	30% increase in total investment by tour operators in wetland management by the end of the Project.	Investment levels into wetland management reflects the amount of commitment to conservation by tour operators, hence a good foundation for BD friendly practices.	Private Sector-funding and management of BD monitoring and local adaptive management at concession area level	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
	Sewage effluent polishing systems in place in 4 tourism establishments by the end of the Project	The proposed polishing system, which is environmentally friendly, is an improved version of the current sewage system used by tour operators in the Delta. Therefore an increase in the number of tourism establishments using this new system shows levels of commitment to BD friendly practices in the Delta.	Private Sector-adoption of model and establishment of sewage polishing system within establishments HOORC/NWDC-lobbying for use of the model	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)
	50% of tourist establishments meet minimum BD friendly certification requirements[33] by the end of the Project	The higher the number of establishments meeting minimum set BD friendly certification requirements, the greater the BD conservation efforts in the Delta.	HATAB/BOBS/DOT/BMWA-set up a BD friendly certification system and implementation of the system	Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)

[33] Current DoT/ BOBS grading system is based on quality of facilities. This Project will add BD friendly practices to the grading system.

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
Outcome 4 BD friendly management methods are inducted into fisheries production systems	800ha (20% of total open access fish production area (panhandle)) of fish production wetland under improved fisheries management systems at end of the Project	The area under improved fisheries management systems shall have management plans developed, with defined BD strategies, hence the size of the area under this system relative to the total fish production wetland, gives an indication of area under BD conservation	TLB/Fisheries-official and legal recognition of fishing rights Local Community/Fishers-definition of user rights and boundaries and development of joint management systems Private sector-angling lodges-definition of user rights and development of joint management systems	Mid-Term Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)
	15% increase in catch per unit effort in pilot areas by the end of the Project	Fishing efforts reflect the abundance of standing fish stocks therefore an increase in catch per unit effort is an indication of the health of the wetland system.	Fishers-measurement of catch per unit effort.	Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)
	Aquaculture BD guidelines and regulations produced in 2007	Aquaculture BD guidelines are legally binding and their implementation will ensure BD friendly practices	NCSA/Fisheries Unit-development of and lobby for adoption of guidelines and regulations	Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU

Level	Performance Indicators	Rationale	Responsibilities (implementation)	Responsibilities (monitoring)
	50 people (30 % of total beneficiaries) showing improved livelihood based on sustainable fishery management in pilot areas (Mean per capita income) by end of Project	Per capita income from fishers can be directly related to improved fisheries management systems and hence improved health of the system	Fishers-records of income generated from fish catch	Final Evaluation (consultant, UNDP CO, UNDP/GEF RCU) Project Implementation Review (UNDP CO, UNDP/GEF RC, PSC, PMG) Periodic Monitoring of implementation progress (PSC, PMG, UNDP CO, UNDP/GEF-RCU) Annual Monitoring PSC, PMG, UNDP CO, UNDP/GEF-RCU) TTR (PMG, PSC, UNDP CO, UNDP/GEF-RCU)

PART 7: REPLICATION STRATEGY MATRIX

Strategy	Replication Strategy/ Interventions	Frequency	Locus for Replication	Cost US $ X 1000
Outcome 1: Enabling environment strengthened at both systemic and institutional levels	Wetlands Policy and Legislation:– (i) the National Wetlands Strategy and Plan provides the main policy instrument for strengthening management of wetlands. Subsidiary Management Plans are being prepared for major wetlands, which will have legal status. Guidance material will be prepared to ensure that good conservation practices tested under the Project are codified in each of these plans and reflected in EIA regulations (being strengthened with UNDP support).	Guidance available in Yr 3/ updated in Yr 5	National	50

Strategy	Replication Strategy/ Interventions	Frequency	Locus for Replication	Cost US $ X 1000
	(ii) The Okavango Delta Management Plan will provide the framework for land use planning in the Okavango Delta. Safe minimum standards for developments will be established, accommodating biodiversity conservation objectives. These standards will be informed through the baseline assessments conducted through the Project.	Standards established in Yr 2	Okavango Delta	20
	(iii) Key results will be fed back through the State of Environmental Report to the Minister and Parliament.	Annual	National	10
	Institutional Framework:– (i) The Institutional Framework for regulating land use will be strengthened as a result of the Project, improving management effectiveness. This has bearing on planning, regulation and monitoring functions associated with land use management.	Ongoing	Okavango Delta	155
	Monitoring System:– (i) A system to monitor the impacts of development will be established (centralised data base). Information will be made available to the Tribal Land Board and NCSA, to guide land use management.	Guidance available Yr 3. Monitoring System in place Yr 4.	Okavango Delta	500
	Evaluation System:– (i) This includes the identification of mechanisms and processes which are working and therefore are ready to be replicated and the modification of what is not working in order to achieve the Project objectives.	Annual	Okavango Delta	90
	(ii) The independent evaluation scheduled during the Project life will be tasked with the identification of factors underpinning the success for Project activities, with a view to replication.	Yrs 2 and 5	National	60
	Knowledge Management:– (i) The Project provides for the development of guidance materials, to ensure that the lessons learnt are shared and	Ongoing	National/ Regional	50

Strategy	Replication Strategy/ Interventions	Frequency	Locus for Replication	Cost US $ X 1000
	replicated elsewhere (ii) research work and findings to be published. (iii) development of web site to lodge information and facilitate information exchange	Ongoing Yr 1	National National/ Regional	10 10
Outcome 2: BD management objectives integrated into the water sector[34]	Institutional Framework:– (i) Information to be presented to SADC Council of Ministers	Yr 4	International Waters	15
	Study Tours:- (i) The representatives of River Basin Commissions will benefit from exchange visits.	Ongoing	Orange Senqu River	N/A (associated funding)
Outcome 3: The tourism sector is directly contributing to BD conservation objectives in the Okavango Delta	Institutional Framework:– (i) the capacity of the Hospitality And Tourism Association of Botswana to coordinate information exchange between members will be enhanced (i.e. through newsletter and web based applications).	Ongoing	Okavango Delta/ Nationally	25
	(ii) Definition of costs and benefits for management	Yr 1	Okavango Delta	15
	Incentives (i) Certification system for good tourism practice instituted in conjunction with HATAB	Yr 3	National	20
Outcome 4: BD friendly management methods are inducted into fisheries production systems	Institutional Framework:– (i) The capacity of fisheries extension services to work collaboratively with fishing communities to design and monitor set asides will be enhanced.	Ongoing	Okavango Delta	60
	(ii) the capacity of the Okavango Fishermens Association to	Yr 3	Okavango Delta	15

[34] The Project marks one of the first attempts in the Southern Africa region to mainstream biodiversity management objectives into the water sector.

Strategy	Replication Strategy/ Interventions	Frequency	Locus for Replication	Cost US $ X 1000
	coordinate information exchange between members will be enhanced (i.e. through radio and informal channels) (iii) Definition of costs and benefits for management	Yr 1	Okavango Delta	15
	Study tours:- i) The representatives of local government and traditional authorities will benefit from village to village exchange visits.	Annual		25

PART 8: REFERENCES

Agricultural Resources Conservation Act-1974

Applied Research Consultants, 2001. A report of the socio-ecological survey of the Okavango basin. "Every River Has Its People" Project. Kalahari Conservation Society.

Aquatic Weeds (Control) Act-1971

Arntzen, J.W, D.L. Molokomme, E.M. Terry, N. Moleele, O. Tshosa and D. Mazambani. 2003. Main Findings of theReview of CBNRM in Botswana. CBNRM Support Programme Occasional Paper No. 14. IUCN/SNV, Gaborone.

Arntzen, J.W., 2003. An Economic View on Wildlife Management Areas in Botswana. CBNRM Support Network Occasional Papers No.10. Gaborone.

Arntzen, J.W., 2005. Livelihoods, agriculture and biodiversity in the Okavango Delta, Botswana. Final draft report for the PDF-B stage of the GEF Project 'Building local capacity for conservation and sustainable use of biodiversity in the Okavango Delta'.

Barnes, J, Cannon, J and Morrison, K 2001. Economic values of selected land uses in Ngamiland.

Barnes,J.I., 1998. Wildlife conservation and utilisation as complements to agriculture in southern African development. DEA Research Discussion Paper 27.

Barnes,J.I., 2001. Economic returns and allocation of resources in the wildlife sector of Botswana. South African Journal of Willdife research, 31, 141-153.

Bendsen, H., Merafe, Y. (1985) The Exploratory Survey of the Ngamiland Molapo development Project Area, MoA Gaborone and Maun.

Bendsen,H. (1987) Land Use Trends and Problems in the Shorobe Area, MoA, Division of Land Utilisation, Maun.

Bendsen,H. (2004) Arable Agriculture and its Significance in Terms of Spatial Coverage, Job and Income Generation Potential. Okavango Challenge website.

Bernard,T., K.Mosepele, L.Ramsberg, 2003. Environmental monitoring of tropical and subtropical wetlands. Conference Proceedings. HOORC Report Series No. 1.

BIDPA, 2001. Review of the Rural Development Policy. Consultancy report for the Rural Development Division, Ministry of Finance and Development planning.

Botswana Society, 1976. Proceedings of Symposium on the Okavango Delta and its future utilization.

Central Statistics Office (CSO) (1995b) 1993 Botswana Agricultural Census, Agricultural Statistics Unit, Planning and Statistics Division, MoA, Government Printer Gaborone.

Conservation International (2003) A Rapid Bioilogical assessment of the Aquatic Ecosystems of the Okavango Delta, Botswana: High Water Survey 2000. ed Alonso, LE & Nordin, LA. Conservation International RAP Bulletin 27.

Development Policy Analysis, Gaborone.

DGS/BGR, 1995. Groundwater Pollution Vulnerability Map Republic of Botswana. Department of Geological Survey, Lobatse.

DWNP/PADU(N). *Revisions to the Moremi Game Reserve and Chobe National Park management plans*. Various dates 1994 to present. DWNP, Maun.

Ecosurv 1996. Photographic Areas Management Plan Okavango Wildlife Management Area. Tawana Land Board, Maun..

Ecosurv, 1987. *Field Investigation into the Mokoro Industry.* KCS, Gaborone.

Ecosurv, 1997. Social and Ecological Status of Controlled Hunting Areas for Community Use. IFAD, Rome / DWNP, Gaborone

Emerton, L., 1998. Economic tools for valuing wetlands in eastern Africa. IUCN Eastern Africa Programme. Economics and Biodiversity, Nairobi.

Fauna Conservation Act (most recent SI 1987)-1961

Fidzani, B., W. S. Mlenga and M. M. Shatera, 1990. Socio-economic effects of CBPP in Ngamiland, Ministry of Agriculture.

Fish Protection Act-1975

Forest Act-1968

GEF- STAP, 2004. Mainstreaming Biodiversity in Production Landscapes and Sectors—Discussion Paper, Washington DC.

Government of Botswana 1990. National Policy on Natural Resources Conservation and Development. Government Printer, Gaborone.

Government of Botswana, 1986. *Wildlife Conservation Policy.*

Government of Botswana. 1970. Tribal Land Act. Government Printer, Gaborone.

Government of Botswana. 1990. Tourism Policy. Government Printer, Gaborone.

Government of Botswana. 1997. Vision 2016 – Towards Prosperity for All. Presidential Task Force for a Long Term Vision for Botswana, Gaborone.
Government of Botswana. 2001. Report on the Review of the Rural Development Policy. Botswana Institute for
Government of Botswana. 2002. Draft National Wetland Policy Strategy. National Conservation Strategy (Coordinating) Agency, Gaborone.
Government of Botswana. 2002. Revised National Policy for Rural Development. Ministry of Finance and Development Planning, Gaborone.
Government of Botswana. 2003. National Development Plan 9: 2003/04-2008/09. Ministry of Finance and Development Planning, Gaborone.Government Printer, Gaborone
Herbage Preservation (Prevention of Fires) Act-1978
International Conservation Services, 2005. www.ics-consulting.co.za/who.htm.
IUCN (1992) The IUCN Review of the Southern Okavango Integrated Water Development Project, Final Report, Gaborone.
J|.Mendelson, (forthcoming). Rural Livelihoods, indigenous knowledge systems, and political economy of acces to natural resources in the Okavango Delta, Botswana. HOORC, Linkoping University.
Kalahari Conservation Society, 1984, 1985. *Aerial Wildlife Surveys.* KCS, Gaborone.
Kalahari Game Services, 1991. *Moremi Game Reserve Management Plan.* DWNP, Gaborone.
Kalikawe, M.C., 2001. Botswana: Integrating Biodiversity Into the Tourism Sector, UNEP- Biodiversity Planning Support Programme.
Kedikilwe, T.M. (1991) The Accelerated Remote Area Development Programme: Ngamiland Remote Area – Zone 6 A Socio-Economic Survey, Applied Research Unit MLGL
Kgathi, D. L. (2001). Natural Resources Tenure and Access in Botswana's Okavango Basin http://www.okavangochallenge.com/>
Kgathi, D.L. D.Kniveton, S.Ringrose, T.Turton, C van der Post, J.Lundqvist, H.Savenije, H. Seely, S. el Obeid and
Kirkels, M. (1992) Change in Agriculture along the Okavango River in Botswana, in the particular under the influence of Government Policies, Agrarian Change in Ngamiland CSDA (Western Part), Utrecht, the Netherlands
Mbaiwa,J. 2001 The Benefits and Problems of Tourism in the Okavango Delta. Botswana Tourism
Mbaiwa,J., 2002 The socioeconomic and environmental impacts of tourism development in the Okavango Delta. HOORC.
McCarthy T.S. 1992. Physical and Biological Processes Controlling the Okavango Delta; A review of Recent Research: Botswana Notes and Records 24: 57-86.
McCarthy, T. S., W. N. Ellery, et al. (1992). "Avulsion mechanisms on the Okavango Fan, Botswana: the control of a fluvial system by vegetation." Sedimentology 39(5): 779-795.
McCarthy, T.S., Ellery, W.N. and Gieske, A. 1994. *Possible Ground Water Pollution by Sewage Effluent at camps in the Okavango Delta: Suggestions for its prevention*. Botswana Notes and Records Vol 26. Botswana Society, Gaborone
Mendelsohn, J and El Obeid, S 2004, Okavango River, The Flow of a Lifetime, Every River Has its People, Windoek.
Merron,.S, 1995. The ecology and use of the fishes of the wetlands in northern Botswana, with particular reference to the Okavango Delta.
Mosepele, K (2002). Trends in Fisheries Development and Fish Utilization in the Okavango Delta.http://www.okavangochallenge.com/>
Mosepele, K 2000 *Preliminary Length Based Stock Assessment of the Main Exploited Stocks of the Okavango Delta Fishery*. MPhil Thesis, Department of Fisheries and Marine Biology. University of Bergen (UiB), Norway.
Mosepele, K. (2001) Description of the Okavango Delta Fishery, Fisheries Section, MoA.
Murray M.I. 2005. Relative Profitability and Scale of Natural Resource-based Livelihoods in the Okavango Delta, Botswana. Final draft report for the PDF-B stage of the GEF Project 'Building local capacity for conservation and sustainable use of biodiversity in the Okavango Delta'.
Murray-Hudson, M, D. Parry, M. Murray, L. Cassidy and B. Moeletsi , 1994. *Natural Resource Utilisation: A Compilation of Documented Natural Resource Use in the Controlled Hunting Areas of the Kwando & Okavango Wildlife Management Areas*. Tawana Land Board Maun, & NRMP/DWNP, Gaborone.
Murray-Hudson, M. and T. Crisman. Ecotourism as a sustainable land use option in African wetlands – the Okavango and Kwando Wildlife Management Areas of Botswana. *In* T Crisman, L. Chapman, C. Chapman and L. Kaufman, Eds. 2003. *Conservation, Ecology and Management of African Fresh Waters*. University Press of Florida, Gainesville FL.
National CBNRM Forum, 2004. Proceedings of the Third National CBNRM Conference " Back to the Future" and CBNRM Status report.

National Master Plan for Agricultural Development-2000.
National Parks and Game Reserves Regulations-2000
Ndozi, C.T., H.B. Nthibe, T.J. Bandeke, 1999. Evaluation study of socioeconomic impacts of the CBPP eradication and government relief programmes on communities of Ngamiland District and Okavango sub-District. Ministry of Local Government, Lands and Housing.
Ngamiland District Council 1997 Ngamiland District Development Plan 5: 1997 – 2003, DDC, MLGLH, ISBN 99912–1–255–8, Government Printer, Gaborone
North west District Council, 1998. Ngamiland District Development Plan 5: 1997-2003.
North west District Council, 2004. Ngamiland District Development Plan 6: 2003-2009.
Noxious Weeds Act-1916
Okavango Community Consultants, 1995. *Management Plans for Controlled Hunting Areas Allocated to Communities in Ngamiland WMAs*. Natural Resource Management Project/DWNP, Gaborone.
Pallet, J. (ed.), 1997. Sharing water in Southern Africa. Desert Research Foundation of Namibia.
Pierce, S.M., R.M. Cowling, T. Sandwith and K. MacKinnon. 2002. Mainstreaming Biodiversity in Development. Case Studies from South Africa. The World Bank, Washington D.C.Report commissioned by Conservation International.
Ringrose,S, C vander Post, R.Kwerepe and M.Mulalu, 1997. Assessment of potential rangelands degrdation in period 1984-1994 using satellite imagery. Ministry of Agriculture and University of Botswana.
Rothert, S 1999. Meeting Namibia's water needs while sparing the Okavango Delta: Alternatives to the Nambian Okavango river pipeline. Report commissioned by Conservation International.
Scott Wilson and EDG, 2000. Environmental impact assessment of the veterinary fences in Ngamiland: summary report. Report prepared for DAHP, Ministry of Agriculture.
Scott-Wilson 2000. Environmental Assessment of Veterinary Fences in Ngamiland. commissioned for Government of Botswana and co-financed by DFID.
Scudder, T. et al, 1993.The IUCN Review of the southern Okavango integrated water development Project. IUCN-wetlands programme.
Shah, W. 1997. "Mainstreaming Biodiversity into Development", Summary Report by Earth Council Area Manager for East and Southern Africa on Second Eastern Africa Biodiversity Forum.
www.ncsdnetwork.org/afrmidea/activities/copkenya.htm
SMEC 1989. *Ecological Zoning - Okavango Delta*. Kalahari Conservation Society, Gaborone.
Speight, M.C.D., 1973. *Outdoor Recreation and its Ecological Effects*. Dept Botany, University of London.
Swiderska, K. 2002. Mainstreaming biodiversity in development policy and planning: A review of country experience. Biodiversity and Livelihoods Group: International Institute for Environment and Development. September 2002.
Terry,E.M., 1986. The basket industry of Gomare and Tubu. Botswana Craft and Ministry of Commerce and Industry.
ULG Consultants, 1993. Aerial Census of Animals in Northern Botswana. Technical Assistance to the DWNP. DWNP, Gaborone
ULG Consultants, 1995. Final Report Aerial Surveys. Technical Assistance to the DWNP. DWNP, Gaborone
UNEP. 2002. UNDP/UNEP/ GEF Biodiversity Planning Support Programme. Biodiversity and Fisheries: A Guide to Best Practice. www.undp.org/bpsp/
UNEP. 2002. UNDP/UNEP/GEF Biodiversity Planning Support Programme. Integrating Biodiversity into the Tourism Sector: A Guide to Best Practice. www.undp.org/bpsp
van der Heiden, L. J, 1991. Land Use and Development Plan - Okavango and Kwando Wildlife Management Areas - First Draft. District Land Use Planning Unit/Tawana Land Board, Maun.
Water Resources Consultants (Pty) Ltd, 2002. Maun Ground Water Development Project, Phase-2. DWA. Gaborone, Botswana.
Wildlife Conservation (CITES) Order-1999
Wildlife Conservation (Hunting and Licensing) Regulations-2001
Wildlife Conservation and National Parks Act-1992

PART 9: SIGNATURE PAGE

Country: Botswana
UNDAF Outcome(s): To assist Botswana fulfil its obligations under the global and regional commitments and goals that it has signed.
Expected Outcome (s):
a) Long-term sustenance of biodiversity in globally significant wetland ecosystems in the Okavango Delta secured through community and private sector-based adaptive management models and two-way-directional flow of BD information between regulatory authorities and resource users.
b) Biodiversity management objectives mainstreamed into the main production sectors (fisheries, water and tourism) and landscapes of the Okavango Delta
c) Best practice and lessons learned from Okavango disseminated to other Botswana and regional wetland systems
Indicator(s):

a) At least 4 pilot adaptive resource management schemes implemented under different modalities in the Okavango by 2010
b) 2 successful replications of one of these schemes in the SADC region by 2012

Expected Output(s)/Indicators:
Outputs
a) Biodiversity conservation targets in three major production sectors agreed through participatory planning techniques
b) Simple indices developed to monitor biodiversity trends through participatory discussions
c) Capacity to monitor indices and interpret results built in resource user groups
d) Adaptive management plans developed through participatory planning

Indicator(s)
a) Biodiversity monitoring indices developed for the three major sectors, tested and adjusted
b) Management plans with structured and feedback loops for management and regulation
c) At least 4 Biodiversity champions trained in data collection, monitoring and interpretation

Implementing partner: University of Botswana (HOORC)

Other Partners: World Conservation Union (IUCN), Kalahari Conservation Society

Government Coordinating Authority: Ministry of Finance and Development Planning

GEF Implementing Agency: UNDP

GEF Focal Area/Operational Program: Biological Diversity/Coastal, Marine and Freshwater Ecosystems

GEF Strategic Priority: Mainstreaming Biodiversity in Production Landscapes and Sectors

Other Partners: Department of Environmental Affairs (DEA), University of Virginia, ODMP Secretariat

Programme Period: 2003 – 2007
Programme Component: Energy and Environment for Sustainable Development
Project Title: Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta
Project ID: 00050134
Atlas Award: 00043119
Project Duration: 5 yrs (60 months)
Management Arrangement: National Execution (NEX) &

Total for full size	**US$** 16,057,979
	Project Budget
1. Allocated resources: (Full size)	
GEF:	US$ 4,000,000
Co-financing:	US$ 12,057,979
2. PDF Contributions	
GEF:	US$ 275,255
National contribution:	US$ 276,183
Sub-total PDF Co-financing:	US$ 551,438
3. Total (PDF & full size)	US$ 16,609,417

Agreed by:

On behalf of:	**Signature**	**Name/Title**	**Date**
Implementing Partner	.....	Prof B. Otlhogile Vice Chancellor, University of Botswana	2-3-06
Government, Coordinating Authority	.....	S. S. G. Tumelo Permanent Secretary, Ministry of Finance & Development Planning	24/3/06
UNDP	.....	V. Morgan Resident Representative, UNDP	1·3·06

PERMANENT SECRETARY
MINISTRY OF FINANCE &
DEVELOPMENT PLANNING
2006 -03- 24
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