Annex 1: Site Descriptions and Maps

1. 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

2. 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

3. 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

4. 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.

5. 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.

6. 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.

7. 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.

8. 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

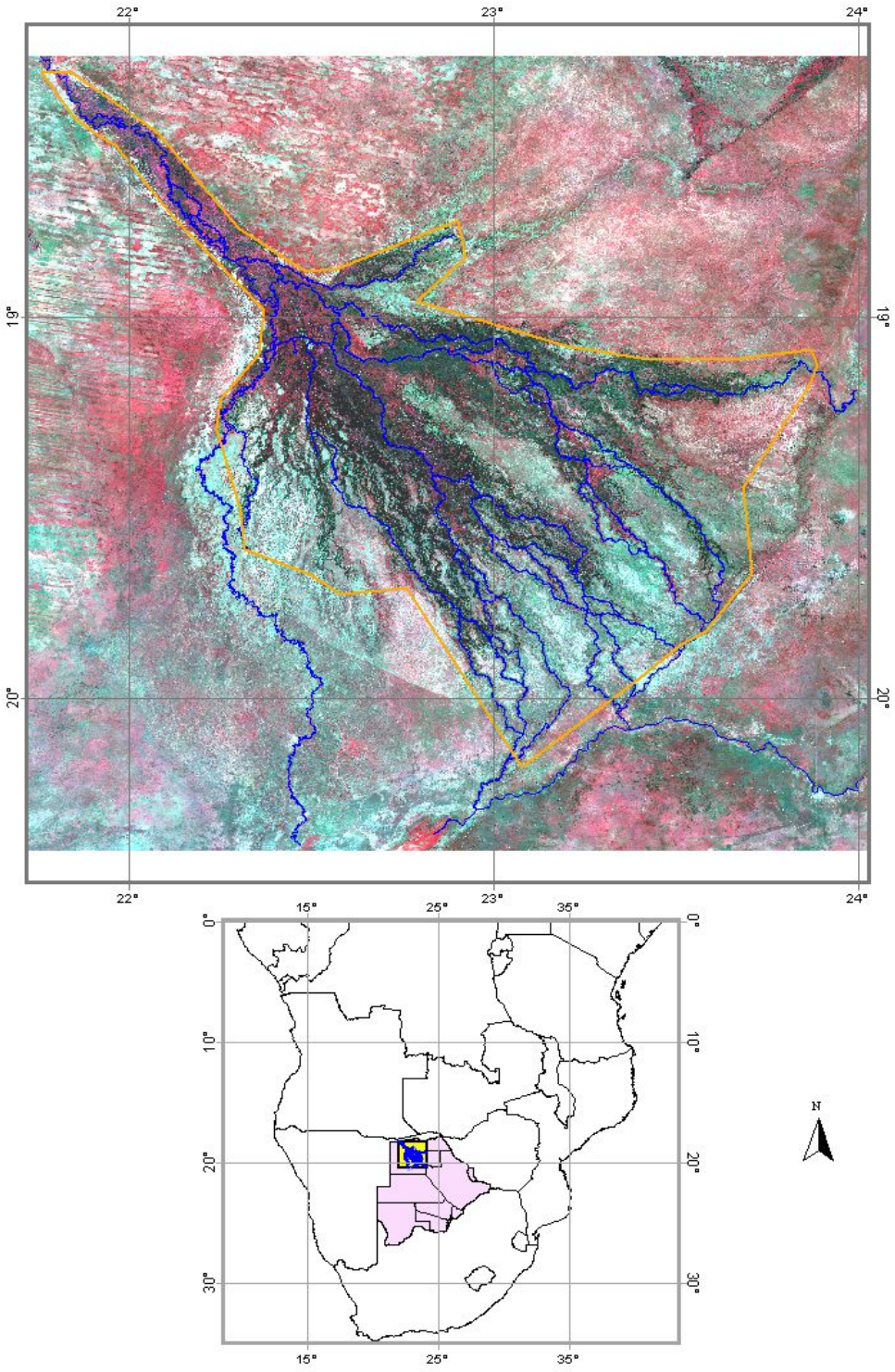
9. Three specific sites have been selected for monitoring the health of riparian woodland.

- 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.

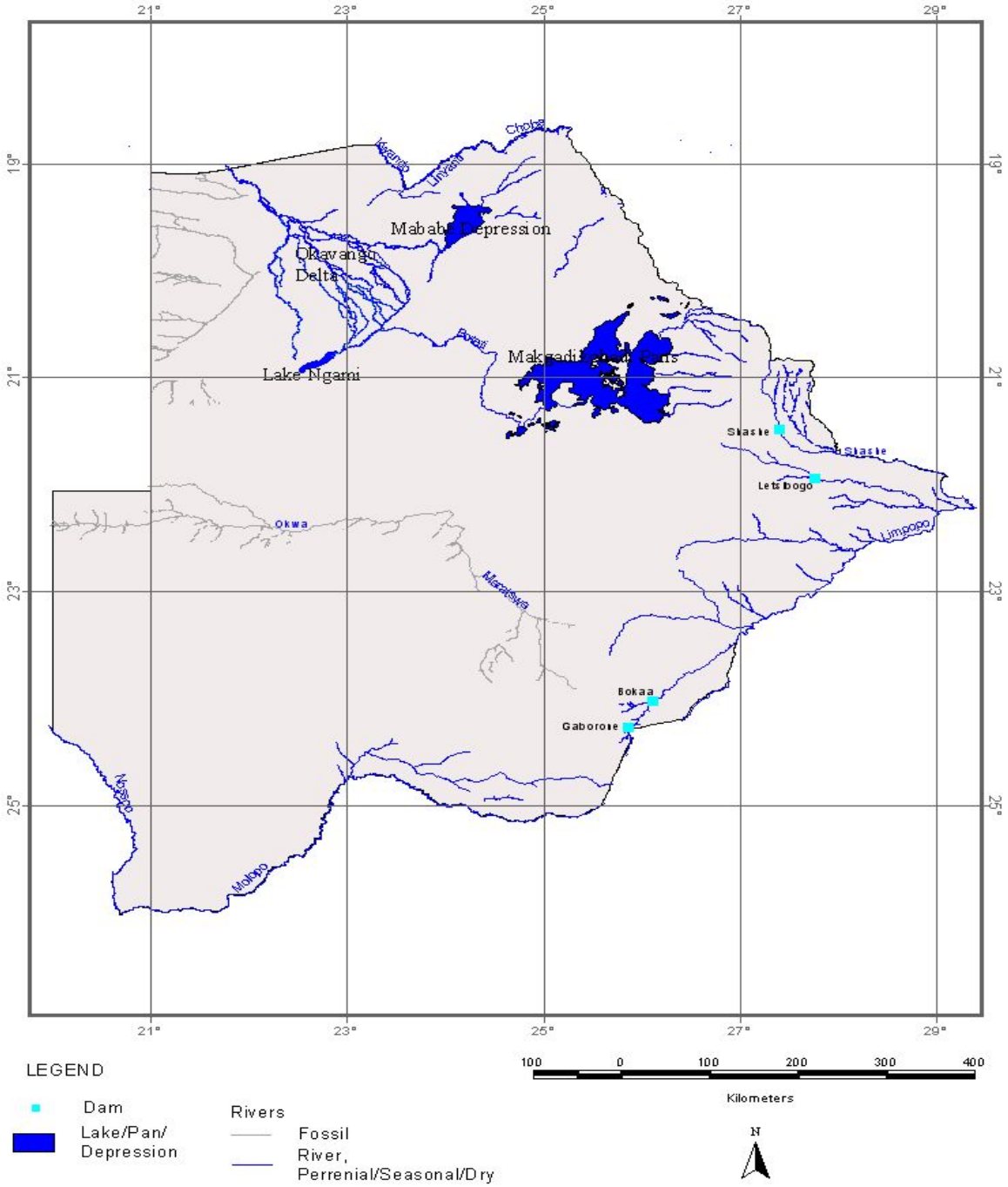
- Nxaraga Research Camp is the UB-HOORC research station in the Delta. This camp already has facilities including radio communication. The area is in the Moremi Game Reserve as well as alongside a string of tourism establishments including Gunns Camp, Delta Camp and Oddballs. There has been a fair amount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

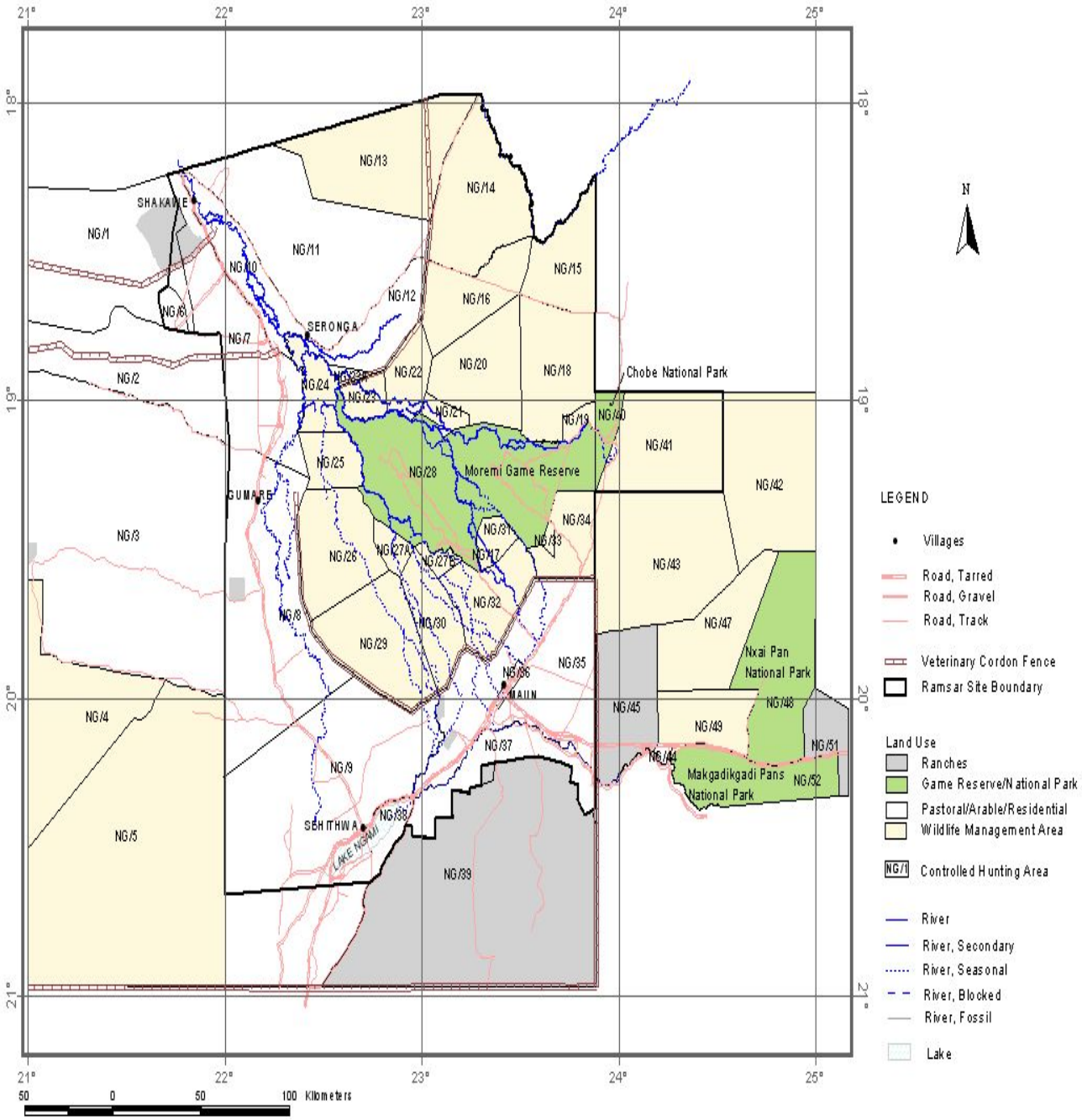
Map 1. Location map of the Okavango Delta showing Project area



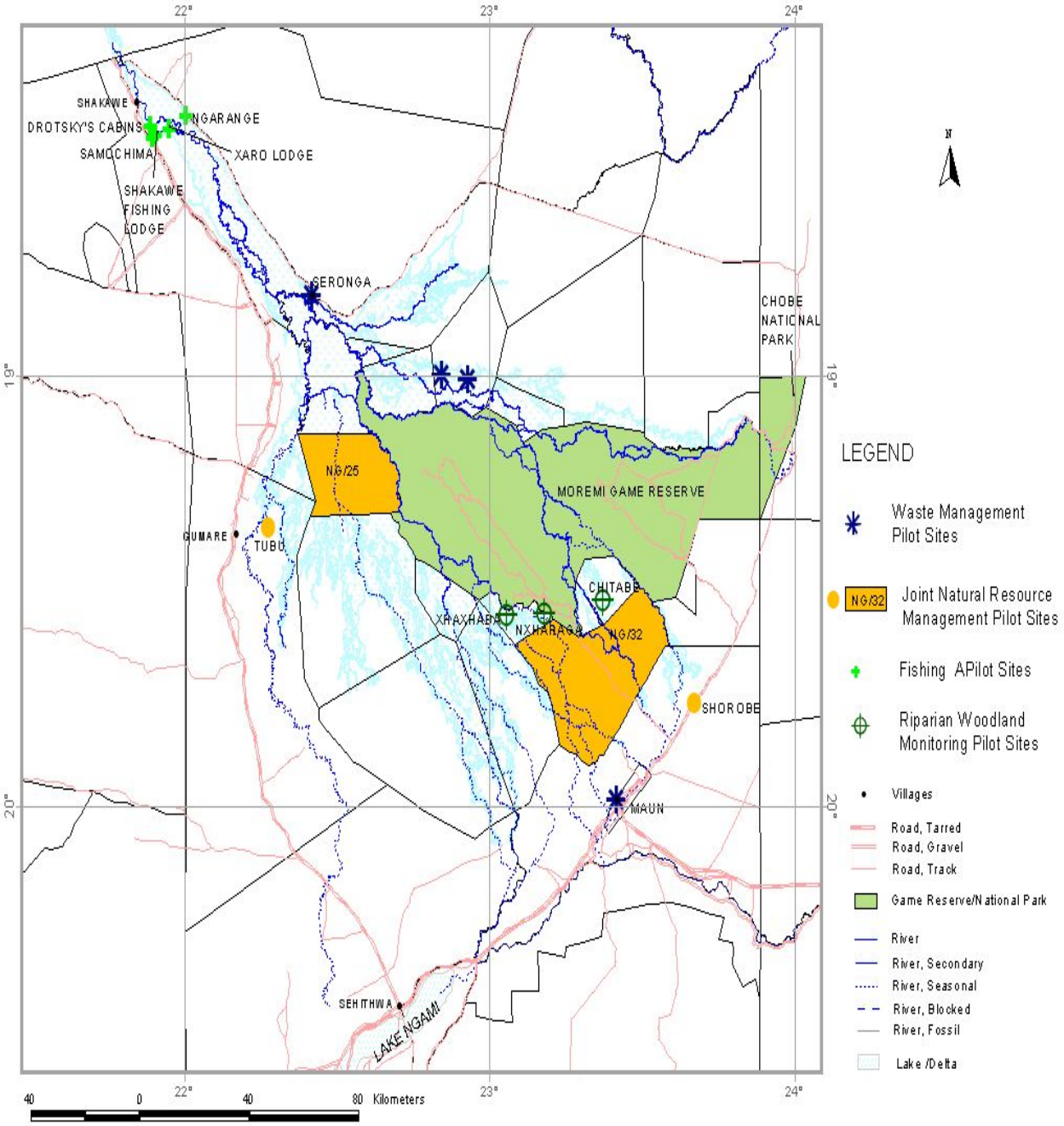
Map 2. Major wetlands in Botswana



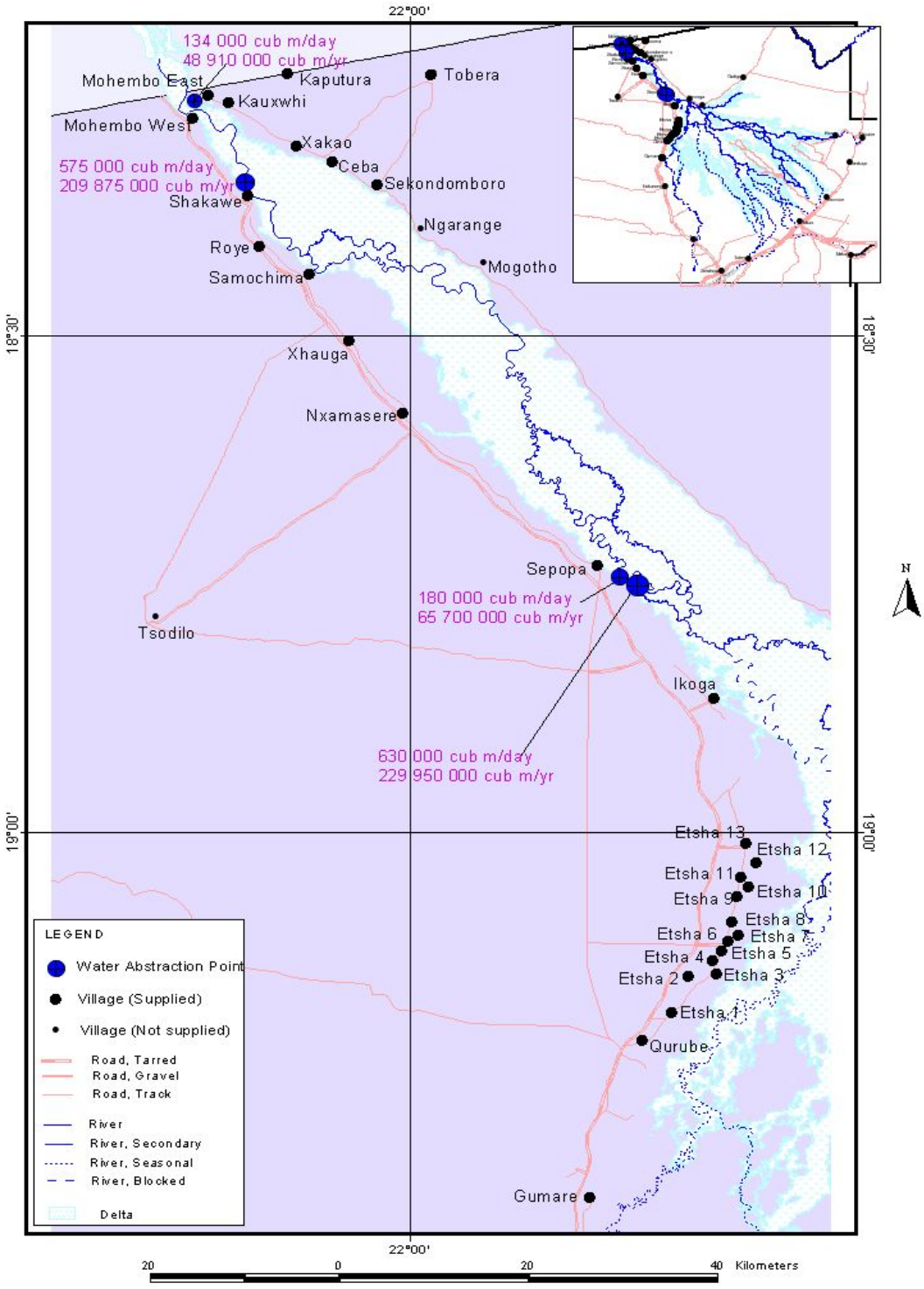
Map 3. Land use in the Ngamiland District (NG = Controlled Hunting Areas (CHAs)



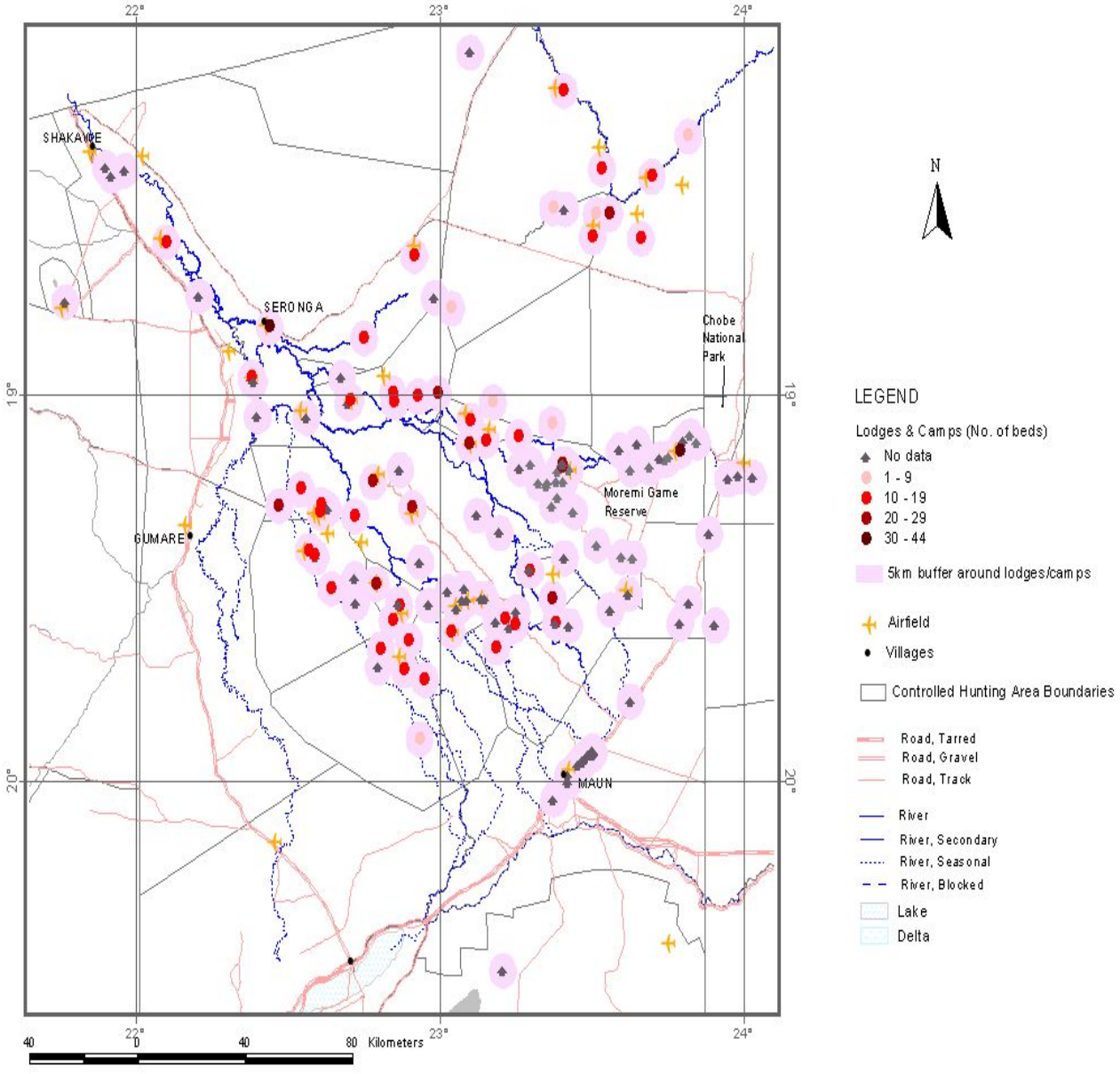
Map 4. Project pilot sites for fisheries, waste management, joint natural resources management and riparian woodlands



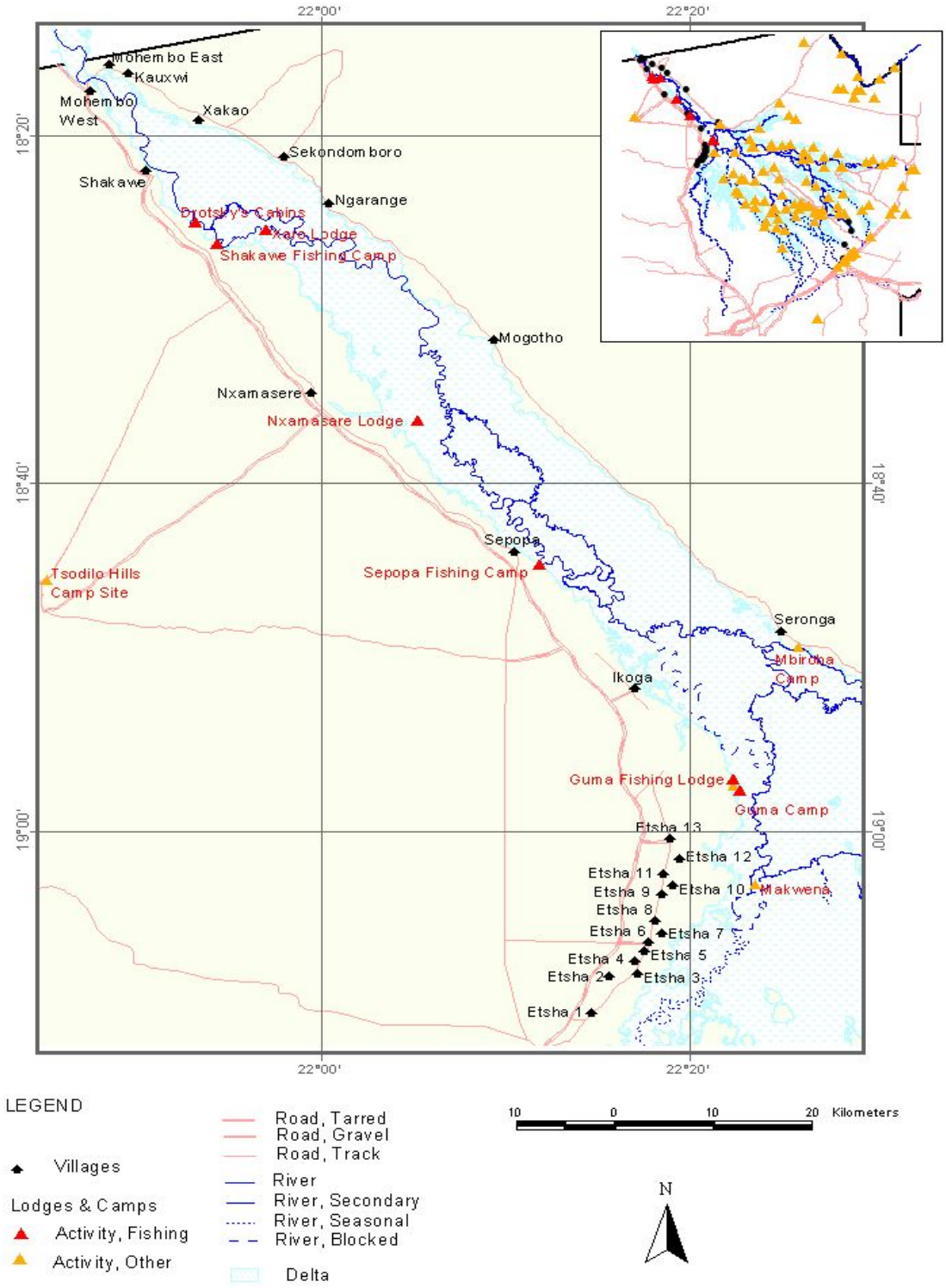
Map 5. Water abstraction hotspots in the Okavango Panhandle



Map 6. Tourism hotspots in the Delta


22°
23°
24°
19°
20°
SHAKAWE
SERONGA
Chobe National Park
Moremi Game Reserve
GUMARE
MAUN
N
LEGEND
Lodges & Camps (No. of beds)
No data
1 - 9
10 - 19
20 - 29
30 - 44
5km buffer around lodges/camps
Airfield
Villages
Controlled Hunting Area Boundaries
Road, Tarred
Road, Gravel
Road, Track
River
River, Secondary
River, Seasonal
River, Blocked
Lake
Delta
40 0 40 80 Kilometers

Map 7. Fishing hotspots in the Delta



Annex 2: 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[1] • Major changes in ecological processes resulting in habitat loss[2] • Increased soil salinization	• Economic/development imperatives override biodiversity conservation and sustainability objectives[4] • Changes in water balance as a result of global climate change	Systemic/Insitutional Capacity • No formalised mechanisims[5] 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	Sustainable Development Baseline • ODMP/Hydrology and water resources component • HOORC ecological-hydrological modeling research Baseline • OKACOM planning process • KCS-Every River Has Its People

[1]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.

[2] 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.

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
from rising ground water levels[3]		complex ecosystem which is as yet not fully understood.	woodland biodiversity and ecology • Development of links between floodplain ecology and hydrology.	Project • NGO watchdogs (CI, 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	• Economic drive to increase tourism numbers and infrastructure for greater profit • BD not recognised as a monitoring priority in	Systemic/Institutional Capacity • Capacities of local authorities to assimilate and make mangement decisions based on BD	Systemic/Institutional Capacity • Capacity building of local authorities to assimilate and make management decisions based on BD	Sustainable Development Baseline • ODMP (Ecotourism developments in the Okavango Delta supported

[3] 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.

[4] 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.

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

[6] 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
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.	lease agreements. • Opaque regulatory framework[6] under which information about resource rights and responsibilities is not easily accessible to resource user groups. • .	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 • Open access resource use framework Marketing/Standards • The potential marketing value of BD friendly eco-tourism practices not realised	• 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 practices Marketing/Standards • Establish certification and awards system for BD friendly eco-tourism practices	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 (2004 – 2027) • Okavango Panhandle Management Plan • CHA management plans
• Increase and spread of aquatic alien	• Increase in tourism activities (boat, vehicle and people movement,	Systemic Capacity • Insufficient capacity in resource regulators to	Systemic Capacity • Build capacity for Department of Water	Sustainable Development Baseline • ODMP/Hydrology

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
plant species	nutrient changes) and other land use changes. Potential sources of invasion exist in all neighbouring countires, e.g. Eichhornia crassipes .	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.	Affairs to effectively integrate BD into decision-making and management processes (including AVCU).	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	Systemic/Institutional Capacity • Build institutional capacity for fishers in fish resources	Sustainable Development Baseline • ODMP conflict resolution strategy

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
impacts on biodiversity up the trophic chain[7]) • 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.	harvests. • 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 using spatial 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	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

[7] 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.

Threat/Impact	Root causes	Management issues/key barriers	Solutions: Interventions from Project / Barrier removal activity	Baseline activity
			management areas (e.g. rotational set asides)	Fishermen Association

Annex 3: Stakeholder Involvement Plan

10. 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

11. 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.

12. 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.

13. 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.

14. 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.

15. 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

16. 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.

17. 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.

18. 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

19. 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.

20. 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.

21. 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.

22. 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

23. 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.

24. 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
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

Key Stakeholder	Mandate and current role in BD conservation	Interest in Project
		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 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.	▪ Water resources knowledge management ▪ Sustainable management of natural resources ▪ 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

Outputs	Responsible Party	Role
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
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

Annex 4: Monitoring and Evaluation Plan

25. 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

26. 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.

27. 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

28. 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.

29. 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.

30. *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.

31. 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.

32. 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

33. 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:

34. 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.

35. 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.

36. 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

37. 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.

38. 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;

39. 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.

40. 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.

41. 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

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

43. 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.

44. 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

45. 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

46. 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)	30,000.00	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)	30,000.00	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*		263,500.00	

IV. RESULT MEASUREMENT TABLE

47. 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[8] 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)

[8] 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 fisheries 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)

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