

# Information Sheet on Ramsar Wetlands (RIS)

## 2009-2014 version

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*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

### Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 17, 4th edition).
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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### 1. Name and address of the compiler of this form:

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Directorate Scientific Services  
Ministry of Environment and Tourism  
Windhoek, Namibia  
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1	1	1
3	2	3

Designation date

2	1	9	3		
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Site Reference Number

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### 2. Date this sheet was completed/updated:

11 October 2013

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### 3. Country:

NAMIBIA

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### 4. Name of the Ramsar site:

Bwabwata – Okavango Ramsar Site

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### 5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site
- b) Updated information on an existing Ramsar site

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### 6. For RIS updates only, changes to the site since its designation or earlier update:

#### a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

**If the site boundary has changed:**

- i) the boundary has been delineated more accurately ; or
- ii) the boundary has been extended ; or
- iii) the boundary has been restricted\*\*

and/or

**If the site area has changed:**

- i) the area has been measured more accurately ; or
- ii) the area has been extended ; or
- iii) the area has been reduced\*\*

\*\* **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

**b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:**

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**7. Map of site:**

**a) A map of the site, with clearly delineated boundaries, is included as:**

- i) a hard copy (required for inclusion of site in the Ramsar List):
- ii) an electronic format (e.g. a JPEG or ArcView image)
- iii) a GIS file providing geo-referenced site boundary vectors and attribute tables

**b) Describe briefly the type of boundary delineation applied:**

The Ramsar Site lies entirely within the Bwabwata National Park. It takes in the whole Mahango Core Area and the western portion of the Buffalo Core Area, an area of 46,964 ha.

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**8. Geographical coordinates** (latitude/longitude, in degrees and minutes):

Centre: 18° 12' 43"S 21° 45' 36"E

Between 18° 09' and 18° 15' 25"S and 21° 41' and 21° 49' 30"E

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**9. General location:**

Located in north-eastern Namibia, Kavango Region, nearest large town is Rundu.

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**10. Elevation:** (in metres: average and/or maximum & minimum)

Average 1000m a.s.l., between 990 and 1020m a.s.l.

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**11. Area:** (in hectares)

46,964 ha

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**12. General overview of the site:**

The site consists of the lower Okavango River, part of the Okavango Delta pan-handle and permanently or temporarily flooded marshes and floodplains. A buffer of riparian forest and open woodland has been added.

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**13. Ramsar Criteria:**

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

**14. Justification for the application of each Criterion listed in 13 above:**

**Criterion 1:** The site forms part of the Okavango Delta, a unique inland delta where a large river, the Okavango, disappears into the Kalahari sands. Namibia is the driest country south of the Sahara, thus any wetland within the country's borders can be considered rare or unique.

**Criterion 2:** The site supports several species of plants and animals that are vulnerable, endangered or critically endangered. Most notable of these are: African Elephant (*Loxodonta Africana* - VU), Hippopotamus (*Hippopotamus amphibius* - VU), Lion (*Panthera leo* - VU), Grey Crowned Crane (*Balearica regulorum* - EN), Lappet-faced Vulture (*Torgos tracheliotos* VU), Slaty Egret (*Egretta vinaceigula* - VU), White-headed Vulture (*Trigonoceps occipitalis* - VU), Eurasian Bittern (*Botaurus stellaris* subspecies *capensis* - LC) and Pel's Fishing Owl (*Scotopelia peli* - LC).

**Criterion 3:** The site supports one of the highest diversities of species (red lechwe, sitatunga, reedbuck, waterbuck and hippopotamus, African wild dog and cheetah, lion, serval, eland, elephant, buffalo, and roan and sable antelope, giraffe, African civet and side-striped jackal, Cape clawless and spotted-necked otters, bushbuck, impala, large spotted genet, lesser bush baby, vervet monkey and a number of bat species) in the region and these are very important for the maintenance of biological diversity in the ecoregion.

**Criterion 4:** The surrounding area is comprised of Kalahari woodlands which are very dry. The presence of the Okavango River and Delta thus provides a vital habitat for the animals of the region (African Elephant, Lion, Birds etc.) by providing drinking water, breeding habitat and refuge during the dry season.

**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

**a) biogeographic region:**

The site falls within the Afro-tropical realm and comprises of the Zambebian flooded grasslands (ecosystem code AT0907). It lies entirely within the Okavango freshwater ecosystem (ID 569).

**b) biogeographic regionalisation scheme** (include reference citation):

Olson, D.M., E. Dinerstein, E.D. Wikramanayake, N.D. Burgess, G.V.N. Powell, E.C. Underwood, J.A. D'Amico, I. Itoua, H.E. Strand, J.C. Morrison, C.J. Loucks, T.F. Allnutt, T.H. Ricketts, Y. Kura, J.F. Lamoreux, W.W. Wettengel, P. Hedao, and K.R. Kassem. *Terrestrial Ecoregions of the World: A New Map of Life on Earth* (PDF, 1.1M) **BioScience** 51:933-938.

Abell, R., M. L. Thieme, C. Revenga, M. Bryer, M. Kottelat, N. Bogutskaya, B. Coad, N. Mandrak, S. Contreras Balderas, W. Bussing, M. L. J. Stiassny, P. Skelton, G. R. Allen, P. Unmack, A. Naseka, R. Ng, N. Sindorf, J. Robertson, E. Armijo, J. V. Higgins, T. J. Heibel, E. Wikramanayake, D. Olson, H. L. Lopez, R. E. Reis, J. G. Lundberg, M. H. Sabaj Perez, and P. Petry *Freshwater Ecoregions of the World: A New Map of Biogeographic Units for Freshwater Biodiversity Conservation* **BioScience** 58:403-414.

**16. Physical features of the site:**

The geology of the site consists of Kalahari sands of recent origin with underlying rocks of the Nosib Group, part of the Damara Supergroup. The area is almost completely flat; elevations vary by a few metres from north to south. The site forms the beginning of the Okavango Delta panhandle and due to

the topography and nature of the soils the water is completely clear and flows slowly. The water reaches its highest level in April or May. Most of the rain falls from December to March and an annual average of 525mm is recorded. Daily maximum temperatures rise above 30°C during most months and average minimum temperatures seldom drop below 10°C in winter (June to August).

### 17. Physical features of the catchment area:

The Okavango River catchment covers an area of about 192,500km<sup>2</sup>. For much of its length the river flows across Kalahari sands which are of recent origin. Some older rocks of the Karoo and Damara groups are also present. The river lies within the Kalahari basin which is generally flat, with a difference of less than 1000m in elevation between the headwaters and the delta. Soils in the catchment are dominated by aerosols, and fluvisols deposited by high flows of the river. Due to the underlying geology these soils are low in nutrients and have poor water retention. The climate of the river basin changes gradually from north to south, with higher rainfall in the north and greater rainfall variability in the south. Temperatures increase rapidly from the coldest months of June and July to the warmest month of October. Winds are generally light, and it is completely calm for much of the time.

### 18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The Okavango serves for the following:

- Groundwater recharge;
- Flood distribution/redistribution, which is regulated by long-term sedimentation/aggradation processes in the permanent swamp and floodplain vegetation;
- Recovery and removal of excess nutrients and other pollutants by the permanent swamp/channel reed vegetation;
- Removal of excess solutes from the water through the process of riparian evapotranspiration;
- Slowing river flow and retention of soils and sediments in permanent swamp and underlying peat;
- Riparian vegetation cover prevents soil erosion along channel banks;
- Flood control/dispersal, and water retention during drought help regulate, respectively, destructive flash flooding and loss of ecosystem functioning and species die off during drought.

### 19. Wetland Types

#### a) presence:

**Marine/coastal:** A • B • C • D • E • F • G • H • I • J • K • Zk(a)

**Inland:** L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U • Va •  
Vt • W • Xf • Xp • Y • Zg • Zk(b)

**Human-made:** 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

#### b) dominance: M, Ts, L, O, Tp

### 20. General ecological features:

The main habitat at the site is the river and its associated swamps and floodplains. There is a narrow fringe of riverine forest which then makes way for open woodland. The site has the highest diversity of bird species in Namibia and also one of the highest diversities of plant and mammal species in the country.

The Okavango Delta contains internationally important biodiversity which has regional and global environmental, social and economic values (Wolski 2012, MET & NNF 2012). These high values extend into the Panhandle, and the Mahango Core Area is recognized as an internationally Important Bird Area (IBA) which supports globally threatened species (Simmons 1999, MET 2012). It is also the second-most species-rich area for mammals in Namibia (Simmons 1999). Overall, biodiversity value is extremely high, as shown in Figure 1.

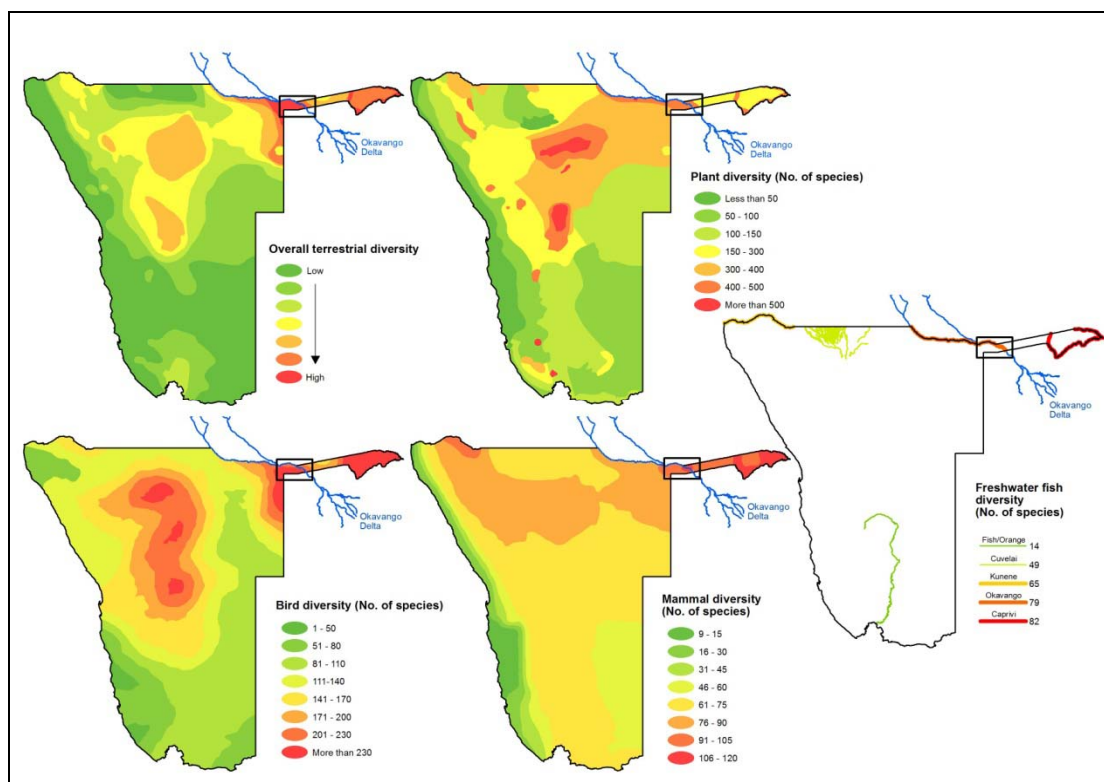


Figure 1. Biodiversity levels for plants, birds, mammals and fish, and overall terrestrial diversity, in Namibia. The area of the proposed Bwabwata-Okavango Ramsar Site is indicated.

### Birds

About two-thirds of Namibia's bird species have been recorded in proposed Ramsar Site, a consequence of high richness of both wetland and tropical species overlapping with the ranges of semi-arid and dry sub-humid species (Simmons 1999).

Mahango and the stretch of the Lower Okavango from Mukwe hold habitat for the following bird species of conservation concern:

#### Endangered species:

- Hooded Vulture (*Necrosyrtes monachus*)
- African Fish-Eagle (*Haliaeetus vocifer*)
- African Skimmer (*Rynchops flavirostris*)
- Rock Pratincole (*Glareola nuchalis*)
- Rufous-bellied Heron (*Ardeola rufiventris*)
- Saddle-billed Stork (*Ephippiorhynchus senegalensis*)
- Slaty Egret (*Egretta vinaceigula*)
- Southern Ground-Hornbill (*Bucorvus leadbeateri*)
- Tawny Eagle (*Aquila rapax*)
- Wattled Crane (*Bugeranus carunculatus*)

- White-backed Vulture (*Gyps africanus*)
- Yellow-billed Oxpecker (*Buphagus africanus*)
- Martial Eagle (*Polemaetus bellicosus*)

The following *Vulnerable* species are also recorded for this area:

Lappet-faced Vulture (*Aegypius tracheliotus*)

Secretarybird (*Sagittarius serpentarius*)

White-headed Vulture (*Aegypius occipitalis*)

The proposed Ramsar Site includes two species of *Least Concern*:

- Eurasian Bittern (*Botaurus stellaris* subspecies *capensis*)
- Pel's Fishing Owl (*Scotopelia peli*).

Floodplains and grasslands in the Mahango Core Area are breeding habitat for Wattled Crane. 11 individuals were counted in the Core Area in 2007, out of a total of 29 in the whole Kavango-Caprivi area (Brown *et al.* 2007). These birds are confined to Protected Areas as there is still much disturbance and persecution outside of the parks, even in conservancies.

Sand banks in the Okavango River, with many in the stretch downstream from Popa Falls, are breeding habitat for African Skimmer (classified as *Endangered*). The wake from speeding boats destroys their sand bank breeding sites, and eggs are also collected by people. Other disturbances cause adult birds to abandon their nests, exposing eggs and chicks to heat and predation.

Riparian forests provide important nesting habitat and perch-hunting sites for Pel's Fishing Owl and African Fish Eagle, while other birds of prey, Southern Ground Hornbill and Yellow-billed Oxpecker also breed in the large trees in this forest belt.

## Mammals

The presence of floodplain grasslands in the Mahango Core Area supports wetland grazing species such as red lechwe, sitatunga, reedbuck, waterbuck and hippopotamus. The proximity of dry woodlands supports high value species such as buffalo, roan and sable. Elephant populations in the KAZA regionally have increased and over 2,000 individuals were counted in the Mahango and Buffalo Core Areas in 2012 (Anon 2012). This area also supports a healthy population of predators, including the endangered African wild dog and cheetah, lion, as well as species restricted in range to the north-east of Namibia such as the serval, African civet and side-striped jackal. The river contains both Cape clawless and spotted-necked otters.

Seasonal movements of several game species to and from the river are prominent in the omuramba systems of Bwabwata. Large mammals such as eland, elephant, buffalo, and roan and sable antelope use the grazing in the dryland woodlands, and move frequently in and out of the marginal swamp areas during the dry season. The riparian belt is important for species such as bushbuck, impala, large spotted genet, lesser bushbaby, vervet monkey and a number of bat species. The Bwabwata National Park draft Management Plan lists 40 mammal species of special concern in the North East Parks – 85% are known to occur in the Ramsar site.

## Reptiles

It was estimated in 2004 that there are about 100 crocodiles in the Okavango River in the section downstream of Bagani to the Botswana border (about 20 km) (Brown *et al.* 2004). Information from a 2007 census is less complete, but suggests the population was roughly double (Aust 2007). The Nile crocodile is not listed by the IUCN as Threatened, but the total population is diminishing due to overall reduction in habitat (Alexander & Marais 2007).

There are 16 reptile species listed in the Bwabwata National Park draft Management Plan, all of which are known or expected to occur in the Ramsar site.

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### 21. Noteworthy flora:

The flora of the site is dominated by the plants of the permanent swamps, such as papyrus *Cyperus papyrus*, *Phragmites* reed beds and *Typha* bulrushes. This is one of the few places in Namibia where this type of vegetation can be observed. Adjacent to the permanent swamps are the seasonal swamps and these eventually make way for extensive *Burkea* woodlands which are characterised by tall *Burkea africana*, *Pterocarpus angolensis* and *Baikiaea plurijuga* trees. Once again, this is one of the few places in Namibia where this vegetation type can be seen.

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### 22. Noteworthy fauna:

The site supports a great variety of large mammals which include African elephant, hippopotamus, lion, leopard (*Panthera pardus*), African buffalo (*Syncerus caffer*), sable antelope (*Hippotragus niger*), roan antelope (*Hippotragus equinus*) and tsessebe (*Damaliscus lunatus*). Over 400 species of birds have been recorded at the site, the highest number anywhere in Namibia. This is one of the few places in Namibia where rare species such as Slaty Egret, Pel's Fishing-Owl (*Scotopelia peli*) and Narina Trogon (*Apaloderma narina*) can be seen regularly, Wattled Crane (*Grus carunculatus*),

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### 23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

Although different groups of people have at various times occupied what is now Bwabwata National Park, the main inhabitants have been the Khwe. Fisch (2008) notes that the Khwe moved there in the period from 1864-1896, from the plains known as Mbunda to the north in Angola between the Quito and Kwando Rivers. The Hambukushu people have also lived in the park at various times and interacted with the Khwe. There is little historical evidence of extensive Hambukushu settlement in West Caprivi prior to the 1920s (Fisch 2008) although they moved through the area from the Kwando River to reach the Okavango River around 1800.

In 1937, the South African Administration declared the West Caprivi as a cattle-free zone and ordered the removal of all cattle and their owners. The Khwe were allowed to stay because most of their number did not own cattle (Fisch 2008).

Some Hambukushu remained in West Caprivi but all remaining Hambukushu were removed by the South African Defence Force (SADF) in 1970, while the Khwe were again allowed to stay. The population of Khwe in West Caprivi has fluctuated due to various events. At Independence around 1 600 Khwe left with the SADF to live in South Africa, in 1998 around 600 Khwe fled to Botswana after allegations of intimidation by members of the Namibian Defence Force and more than 1 000 fled into Botswana when the Angolan conflict spilt into West Caprivi in 2000 (Suzman 2001).

Fisch (2008) reports that the !Xun (also known as Vasekele) had also inhabited parts of the Mbunda plains and the hinterland to the south of the park in Botswana. !Xun people interviewed in 1990 in West Caprivi said !Kung-speaking clans had traditionally utilised the whole area from southern Angola through West Caprivi, into north-western Botswana and the Nyae Nyae area of Namibia (Brown and Jones 1994:40). At Independence there were an estimated 600 !Xun people in West Caprivi (Brown and Jones 1994: 41), but many had left with the South African Defence Force to South Africa and others have left subsequently. Now there are estimated to be about 150 !Xun living in the Bwabwata National Park.

The Mahango area was settled by the Hambukushu around 1800. What is now the Mahango Core Area of the BNP had always been an important traditional hunting and fishing area, but was settled by refugees from Angola in 1977.

The following ecological services identified for the Okavango Delta (Wolski 2012) have been adapted for the upper Panhandle where the Bwabwata-Okavango Ramsar Site is proposed.

<b>Provisioning</b>	
Food	Fish, birds & other wild game, aquatic plants, wild fruits & nuts
Freshwater	Storage and retention of water for domestic, industrial, and agricultural use
Fibre and fuel	Production of logs, grass and reeds for construction, firewood, peat, and livestock fodder
Biochemical	Roots, tubers, bark, leaves and other materials from biota for medicines
Genetic material	Genes in wild populations have inherent value; e.g. for finding resistance to plant or animal disease or pathogens, resistance to arid climate, and ornamental species
<b>Regulating</b>	
Climate regulation	Sink for greenhouse gases (CO <sub>2</sub> ). The Okavango also influences local and regional temperature, evapotranspiration, precipitation, and other climatic processes.
Water regulation (hydrological flows)	Groundwater recharge that feeds riparian vegetation. Flood distribution/redistribution is regulated by long-term sedimentation/aggradation processes in the permanent swamp and floodplain vegetation
Water purification and waste water treatment retention	Recovery and removal of excess nutrients and other pollutants by the permanent swamp/channel reed vegetation; Removal of excess solutes from the water through the process of riparian evapotranspiration.
Erosion regulation	Slowing river flow and retention of soils and sediments in permanent swamp and underlying peat. Riparian vegetation cover prevents soil erosion along channel banks
Natural hazard regulation	Flood control/dispersal, and water retention during drought help regulate, respectively, destructive flash flooding and loss of ecosystem functioning and species die off during drought
Pollination	Provides varied seasonal habitat for pollinators
<b>Cultural</b>	
Spiritual and inspirational	Islands in the Andara area have traditional cultural significance.
Recreational	Excellent wilderness/sense of place and game viewing value that contributes great opportunities for tourism and day to day recreation for its inhabitants
Aesthetic	Many people find beauty or aesthetic value in it
Educational	Provides opportunities for formal and informal education and training
<b>Supporting</b>	
Soil formation	Sediment retention and accumulation of organic matter in peat and on alluvial floodplains.



Nutrient cycling	Drying allow for desiccation, grazing, fire and decomposition processes that recycle nutrients 'locked up' in plant material, sediment and animal dung, allowing their release once more back into forms available for plant growth and productivity on return of the flood
Refuge	Permanent swamp and other habitat types provide breeding areas, nursery and refuge for invertebrates, fish, and aquatic birds and mammals.

Turpie et al. (2006) also identified a set of ecosystem services or indirect use values, attributable to the Okavango delta, as part of an economic valuation of the Okavango Delta Ramsar Site. Here, values for carbon sequestration, wildlife refuge, ground-water recharge, water purification, and scientific and education values, were estimated.

The main land uses by local residents in the area upstream of the Mahango Core Area Ramsar site are crop cultivation and livestock farming. Small-scale farming of a few hectares of millet, sorghum and maize with small numbers of goats and cattle is dominant. Farm production depends very strongly on two factors: Rainfall and soil quality (Mendelsohn 2009). Soils in Kavango Region are generally poor with low nutrient levels. About 80% of all rain falls between December and April, but the amount, timing and effectiveness of rainfall vary greatly from year to year and also within any one rainfall season. Crops do well when good and regular falls are received, but fail when little or no rain falls. Harvests are therefore variable. Similarly, livestock suffer substantial mortality when conditions are very dry. Livestock are an important asset and relatively few animals are slaughtered or sold, with annual off-take amounting to about 7%. Most slaughters are for domestic consumption or to obtain cash for household use (Mendelsohn 2009).

Small-scale farming, as practiced by the great majority of households is a low input - low output activity that generates little income because (Brown 2010):

- fields are small
- soils have limited fertility
- yields are low
- labour is often limited
- surplus harvests are rare, and
- markets are small.

Thus, most rural households obtain additional income from the wages, business incomes, remittances and pensions of family members.

Millet (mahangu) is the dominant crop, being planted on about 95% of all cultivated land. The remaining 5% is cultivated with maize, sorghum and vegetables such as melon, groundnuts, beans, spinach and pumpkins. Millet predominates because it is the only cereal that grows relatively well on sandy, nutrient-poor soils where the climate is characterised by low, erratic rainfall and long spells of dry weather (Mendelsohn 2009).

**b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?**

If Yes, tick the box  and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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**24. Land tenure/ownership:**

- a) within the Ramsar site: State Property - Ministry of Environment and Tourism
- b) in the surrounding area: State land under various government ministries

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**25. Current land (including water) use:**

- a) within the Ramsar site: Conservation area, popular tourist destination for game viewing, birding and fishing.
- b) in the surroundings/catchment: The catchment covers three countries: Angola, Namibia and Botswana. Land uses include subsistence and commercial farming, tourism, hunting, fishing, water abstraction for agriculture and human consumption.

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**26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

- a) within the Ramsar site: Unknown.
- b) in the surrounding area: Increasing human population puts tremendous pressure on the natural resources of the region. Growth of urban areas and their associated waste water as well as large-scale commercial agriculture on the banks of the Okavango River may adversely affect the water quality of the river. Plans for large-scale water abstraction to supply urban areas in Namibia may have the biggest effect on the site.

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**27. Conservation measures taken:**

- a) The site falls within the **Bwabwata National Park**.
- b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

- c) Does an officially approved management plan exist; and is it being implemented?

No officially approved management plan exists for the site. However a management plan was drafted recently and is being taken up through the channels for official approval.

- d) Describe any other current management practices:

The site is located in the formally protected area and is being as integral part of the Bwabwata National Park. The Park including the proposed Ramsar site is being managed under an approved Bwabwata National Park Management Plan.

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**28. Conservation measures proposed but not yet implemented:**

The site lies within the proposed KAZA Transfrontier Conservation Area.

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### 29. Current scientific research and facilities:

Currently no scientific research is taking place at the site but it is planned to do wetland bird counts twice a year. There are no scientific facilities.

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### 30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

No CEPA activities exist at the moment. However schools regularly take school going children to the proposed Ramsar site for environmental education activities. Park brochures were developed some years back and are available at most MET stations for public viewing and are also available at the park station.

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### 31. Current recreation and tourism:

The area is a very popular tourist destination. Tourism is also an important land use in and around the Mahango Core Area Ramsar Site. In April 2013 there were at least nine tourism establishments operating in the vicinity. These included seven lodges upstream of the Core Area, one guest house at Divundu and the Ngoabaca community camp at White Sands site on the east bank of the river inside the BNP. The Popa Falls Rest Camp of Namibia Wildlife Resorts was closed for redevelopment. Planned development in April 2013 included a new lodge at Whitesands under community concession, and additional rooms and campsites at NWR Popa Falls. The BNP Tourism Development Plan (Massyn *et al* 2009) also makes provision for a mid-market lodge to be developed on the east bank of the river within the BNP in an area opposite Andara and for a mid-market lodge of around 60 beds to be developed at the old Pica Pau Military base in the Buffalo Core Area. In addition, the BNP Tourism Plan makes provision for Mahango activity concessions in the Mahango Core Area that could give concessionaires:

- The right to use and maintain an exclusive picnic site on the Kavango River inside Mahango
- Access to additional tracks along the Kavango River and in the western woodland
- The right to conduct guided walks (under rules set by the MET);
- After hour access to Mahango to conduct night drives under rules set by MET and subject to EIA.

The plan makes provision for boating within Mahango to be operated from the concession at Pica Pau, but does not provide for tourism accommodation to be established in the Mahango Core Area.

Data for 2007/8 (Massyn *et al* 2009) indicate that the nine tourism facilities operating in the vicinity of the Mahango Core Area had total of 102 rooms, 237 beds and 78 campsites. The rooms operated at an average annual occupancy of 32% and the campsites at 22%, although well-established and well-run lodges were operating at between 43% and 48% occupancy. These establishments generated 217 jobs and a wage bill of N\$3.5 million, mostly going to local employees. Tourism activities include vehicle-based game viewing, guided walks, guided boating, fishing, trophy hunting, guided cultural excursions, bird watching, self-drive 4x4 excursions and camping.

Trophy hunting takes place within the Buffalo Core Area (the Bwabwata West Concession). In April 2013 the hunting camp was located on the river below the site designated for the Pica Pau lodge concession. Although there is currently low use of this area by photographic tourists, this location for the hunting camp is too close to existing tourist tracks and should be moved to reduce the potential for conflicts between the two forms of tourism. Although trophy hunting has taken place in the Mahango Core Area in the past, the BNP Tourism Development Plan recommends there should be no hunting in the Core Area and in April 2013 no concession had been awarded.

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### 32. Jurisdiction:

Ministry of Environment and Tourism  
Directorate Parks and Wildlife Management  
Private Bag 13306  
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