Information Sheet on Ramsar Wetlands

Categories approved by Recommendation 4.7 of the Conference of the Contracting Parties.

NOTE: It is important that you read the accompanying *Explanatory Note and Guidelines* document before completing this form.

1. Date this sheet was completed/updated:

Mar. 31,1999

FOR OFFICE USE ONLY.

DD MM YY

Designation date

Site Reference Number

2. Country:

CAMBODIA

3. Name of wetland: Boeng Chhmar and Associated River System and Floodplain

4. Geographical coordinates: Part of the Tonle Sap floodplain, immediately to the north east of the constriction of the lake. Coordinates 12deg.53'N; 104deg.22'30"E; 12deg.45'N; 104deg.22'30"E; 12deg.51'N; 104deg.10'E and 12deg.44'N; 104deg.15'E.

5. Altitude: (average and/or max. & min.) **10m(max) ASL**

6. Area: (in hectares) **28,000 ha.**

7. Overview: (general summary, in two or three sentences, of the wetland's principal characteristics)

The site consists of permanent open water surrounded by a creek system and flooded forest. It is a small lake formed in the middle of inundated forest in the north-east fringe of the Tonle Sap lake. The creek systems are mostly shallow, especially in April with a maximum depth of roughly two metres, whereas the lake water remains between 0.5 to 1.0 metre.

8. Wetland Type (please circle the applicable codes for wetland types as listed in Annex I of the *Explanatory Note and Guidelines* document.)

marine-coastal: A · B · C · D · E · F · G · H · I · J · K

inland: L · M · N · O · P · Q · R · Sp · Ss · Tp · Ts
· U · Va · Vt · W · Xf · Xp · Y · Zg · Zk

man-made: 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9

Please now rank these wetland types by listing them from the most to the least dominant: M, O, Tp.

9. Ramsar Criteria: (please circle the applicable criteria; see point 12, next page.)

1a · 1b · 1c · 1d | 2a · 2b · 2c · 2d | 3a · 3b · 3c | 4a · 4b

Please specify the most significant criterion applicable to the site: 3a

10. Map of site included? Please tick *yes* ✓ -or- *no* ☐

(Please refer to the *Explanatory Note and Guidelines* document for information regarding desirable map traits).

11. Name and address of the compiler of this form:
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Please provide additional information on each of the following categories by attaching extra pages (please limit extra pages to no more than 10):

12. Justification of the criteria selected under point 9, on previous page. (Please refer to Annex II in the *Explanatory Note and Guidelines* document).

The area represents a good example of near natural wetlands which plays substantial hydrological, biological and hydrological role in the natural functioning of two major rivers, Stoeng Stoung and Stoeng Chikreng and lake basin. The complex creek system associated with plant communities and the seasonal fluctuation of the water regime makes the area rich in ecological sub-units and is productive in terms of nutrient and harvestable products. The area supports large assemblage of plants species, fish and waterbirds species many of which known as rare, vulnerable or endangered. The area provides feeding ground for large colony of waterbirds.

13. General location: (include the nearest large town and its administrative region)

Boeng Chhmar and its river system is located to the north east part of the Tonle Sap lakeshore. Although it lies under administrative supervision of Kampong Thom province, it is difficult to access the area from the Provincial capital which is situated approximately 70km to the east. However, the area can be accessed from the south crossing the Tonle Sap lake. To the south, the nearest town includes Kampong Luang Commune, on the south shore of Tonle Sap lake, and Krakor district town, on National Road No .5, at distance approximately 20 km and 45km respectively.

14. Physical features: (e.g. geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth water permanence; fluctuations in water level; tidal variations; catchment area; downstream area; climate)

Boeng Chhma (Chhma Lake) and is a permanent feature in the inundated area of Boeng Tonle Sap (Tonle Sap Lake) and becomes one with the lake in the wet season. It is part of the Tonle Sap in the Mekong River basin, the largest floodplain lake in SE Asia. The river system possesses distinct levees approximately 0.5-1.0m. above the surrounding marsh (backswamp).

It is connected to the lower Mekong River at Phnom Penh via the Tonle Sap River. The width of the floodplain of Tonle Sap at its lowest level varies between c.40 km. in the north west to 5km. in parts of the south. The Boeng Chhma receives water from two sources: (i) inflows from the north and north east, particularly the Stoeng Stoung and Stoeng Chikreng, which have built up an elongated delta at the northern end of the lake and (ii) the reverse flow of the Tonle Sap river, which, during the period July to October, would be expected to completely inundate the lake and the surrounding area. Boeng Chhma and the numerous creeks and rivers are mostly shallow, with a maximum depth of roughly two meters (in the dry season). During inundation, the water level rises at least 4-5m.

Soils are mainly inorganic alluvium with some build-up of organic matter, particularly on the levees. An overlaying organic matter is seen at some places especially in the areas where water hyacinth has been stranded as flood water recede. The decaying materials may replenish the whole system when the area is flooded again.

15. Hydrological values: (groundwater recharge, flood control, sediment trapping, shoreline stabilisation etc)

The presence of flooded forest and creek system plays important role in trapping the surface flow from the two rivers, Stoeng Stoung and Stoeng Chikreng, containing large quantity of sediment. Reverse flow from the Mekong through Tonle Sap river in the wet season is ideally buffered by the existing flooded forest before it reaches the shore. Numerous depressions and creek systems retain water all year round thus contribute significantly to feeding ground water supply to the neighbouring wetland areas.

16. Ecological features: (main habitats and vegetation types)

The major habitats are the open water of the lake and the vast inundated floodplain of the lake. Most of the plain can be classified as "seasonal freshwater swamp savannah" (revised IUCN classification developed in April 1993 with Mekong Secretariat). Trees such as *Barringtonia acutangula* and *Xanthophyllum glaucum* are very common along the levees of waterways within the floodplain and as scattered groves on the floodplain.

In the Boeng Chhma region of the floodplain, there are numerous creeks, and over the floodplain there are scattered pools, some of which appear to contain blackwater due to the release of humic acids from decomposition of vegetation.

There are three main types of vegetation within the area:

1. The lake and river systems
Common species include:
Non-rooted floating plants: The water hyacinth *Eichhornia crassipes* is the dominant non-rooted floating plant. *Pistia stratiotes* and *Salvinia* sp. are present in smaller quantities. (Both *Eichhornia* and *Salvinia* are introduced species).
Non-rooted, submerged plants: *Utricularia* sp. is present in small amounts.
Rooted submerged macrophytes are generally absent due to the turbidity of the water.
Rooted, floating-leaved: *Trapa natans*, *Nymphaea* sp..
Creeping: *Ipomea reptans* and *Ludwigia adscendens*.

2. The river and creek levees
These are normally the highest parts of the floodplain, and trees such as *Barringtonia acutangula* and *Xanthophyllum glaucum* are very common. Saplings of *B. actangulata* are common, which must survive at least 4 months of complete inundation.

3. The floodplain and backwater swamp
The backswamp areas are lower than the levees. In the dry season the water table may still be at the surface of the soil (+/-10cm.). The dominant plant forms are extensive thickets of the shrub *Sesbania javanica* and "meadows" of the low-growing *Polygonum barbatum*. *Ipomea reptans* is common creeping over the ground and there are extensive areas of water hyacinth still growing in the moist soil.

17. Noteworthy flora: (indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc)

The important forest communities in the area include the present of *Barringtonia actangulata,* and *Xanthophyllum glaucum.*

18. Noteworthy fauna: (indicating, e.g., which species are unique, rare, endangered, abundant or biogeographically important; include count data, etc.)

The most noticeable of the invertebrate fauna is the diversity and abundance of dragonflies and damselflies. This is typically a reliable indication of good water quality and an abundance of other invertebrates. Within the backswamp areas, there is a very high abundance of terrestrial insects, particularly grasshoppers and crickets.

Avifauna: The area holds a great diversity and abundance of waterbirds, perhaps the highest in the entire flooded plain. There are large numbers of purple swamphens, black bitterns, cinnamon bitterns, great egrets, black-necked storks, lesser adjutants, greater adjutants, glossy ibis, black-headed ibis, Indian shags and whiskered terns.

Over 500 fish species have been recorded from the Mekong River basin most of them from the Tonle Sap lake where Boeng Chhmar and its creek system are part of it. The large species include *Puntius cf. gonionotus, Hampala macrolepidota (*Cyprinidae); the siluroids *Wallago attu*; the eleotrid goby *Oxyelectris marmorata* and the snakeheads *Channa micropeltes* and *C. Striata.*

19. Social and cultural values: (e.g. fisheries production, forestry, religious importance, archaeological site etc.)

The area and the Tonle Sap lake as a whole is vital in the economy of Cambodia in supplying fish to the population. Several million people ultimately depend upon the productivity of the lake. The waterbirds are also important as food for local people.

20. Land tenure/ownership of:

(a) site

The land in the area is state-owned and managed by the Department of Fisheries which is the jurisdiction over fishing in the area. The area is divided into fishing lots which are leased out to private enterprises for fishing every two years. A few floating villages are located inside the area and live primarily on fishing with a few households raising fish and farming rice.

(b) surrounding area

The surrounding flooded forest lie under jurisdiction by the Department of Fisheries where rice field lie further north is privately owned.

21. Current land use:

(a) site

Since most of the area is inundated almost all year round, the area is heavily fished. As the area is assigned as fishing lot, fishing here is managed by individuals who bought the fishing license. Small scale family fishing, however, is open in the closed season between July and September. There are few floating villages who fish for their livelihood but also raise fish and grow rice in small open areas nearby their villages.

(b) surroundings/catchment

Like the area in the proposed Ramsar site, the surrounding area is also subject to flooding and fishing takes place accordingly. To the extreme north, close to the National Road No. 6 which runs along the northern periphery of the Tonle Sap lake, is rice field. No major development is made within the area south of the above road.

22. Factors (past, present or potential) adversely affecting the site's ecological character, including

changes in land use and development projects:

(a) at the site

The prominent threat to the area is illegal practices on fishing. Violation includes the use of methods and gears unspecified in the fishery law, fishing in the closed season by medium and large scale fishers, bird poisoning, and some cutting of tree branches, especially of *Barringtonia* trees for use a fish aggregate device. Such practices could cause threat to recruitment to fish populations and to the sustainability of the fishery.

(b) around the site

There is evidence of some burning of the savannah swamp around Boeng Chhmar but appeared to be localised. Such burning is most likely made to seek fertile lands for farming. Similar problem from fishing practices appears in the surrounding area as well.

The major future threat to the site would be alteration of the hydrological regime by damming of the mainstream Mekong or a number of its large tributaries.

23. Conservation measures taken: (national category and legal status of protected areas - including any boundary changes which have been made: management practices; whether an officially approved management plan exists and whether it has been implemented)

The area is subject to the protection by the Fishery law on 1987 and the Royal Decree on Creation and Designation of National Protected Area system on Nov. 01, 1993. However, there is no actual conservation measure on place.

24. Conservation measures proposed but not yet implemented: (e.g. management plan in preparation; officially proposed as a protected area etc.)

The site is part of the Tonle Sap lake which is designated Multiple Use Area under the Royal Decree of Nov. 01, 1993. It is also one of the designated three core areas of the Tonle Sap Biosphere Reserve. There is a need for the protection of the productivity of Boeng Chhmar and the Tonle Sap lake as a whole. This can be achieved by maintaining the regular hydrological regime of the Mekong River as well as protection of the habitat in the surrounding inundated plain.

25. Current scientific research and facilities: (e.g. details of current projects; existence of field station etc.)

There are currently no research activities focusing particularly on the site. However, there are a number of studies for the Tonle Sap lake area in general. Two existing projects applied to all area within the Tonle Sap lake include the study for a wetland inventory and the baseline study for establishment of core area of the Tonle Sap Lake Biosphere Reserve.

The are also an urgent need for research on migratory fish species, research on the ecology of rare waterbirds especially their feeding and breeding migrations.

26. Current conservation education: (e.g. visitors centre, hides, information booklet, facilities for school visits etc.)

No education information specifically for the area is developed. But there is a general environmental education programme covering many environmental aspects including the awareness on wetlands. Although there is no information facility at place, the area is easily accessible by boat. Over night stays

are possible and information can be retrieved from local villagers nearby the site.

27. Current recreation and tourism: (state if wetland is used for recreation/tourism; indicate type and frequency/intensity)

The site has yet to be developed for recreational purpose. There is no tourism facility at place and most visitors come to the site to do their research study. The complex ecosystems and presence of large colony of waterbirds and fishing activities are potential attractions for tourist visits.

28. Jurisdiction: (territorial e.g. state/region and functional e.g. Dept of Agriculture/Dept. of Environment etc.)

The site lies under the administrative supervision of Kampong Thom provincial authority. However, the Department of Fisheries takes the responsibility over the management of economic and resource use activities. The Ministry of Environment under the Royal Decree dated Nov. 01, 1993, has the jurisdiction in supervising resource management activities in the area.

29. Management authority: (name and address of local body directly responsible for managing the wetland)

There is no clear indication of the authority in responsibility for the management of wetlands. The Department of Fisheries and the Department of Nature Conservation and Protection are jointly responsible for the management of wetlands.

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#186, Norodom Blvd. Tonle Bassac,
Chamkarmon, Phnom Penh

Department of Nature Conservation and Protection,
Ministry of Environment
#48, Samdech Preah Sihanouk Blvd., Tonle Bassac,
Chamkarmon, Phnom Penh.

30. Bibliographical references: (scientific/technical only)

Asian Wetland Bureau, 1994, Wetland Surveys in Cambodia to Identify Sites of International Importance, Draft Final Report, AWB, Kuala Lumpur.

Wetlands International,1996, Cambodia Wetlands – Ornithological Survey, WI, Kuala Lumpur.

Mundkur, T. et al., 1995, *Survey for Large Waterbirds in Cambodia, March-April 1994. IUCN species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.*