

Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th 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 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.
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.

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

Department of Environment, Water Resources
and Environment Administration (WREA),
Vientiane, Lao PDR
P.O. Box 7864

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Designation date

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Site Reference Number

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2. Date this sheet was completed/updated:

December 2009

3. Country:

Lao PDR

4. Name of the Ramsar site:

The precise name of the designated site in one of the three official languages (English, French or Spanish) of the Convention. Alternative names, including in local language(s), should be given in parentheses after the precise name.

Beung Kiat Ngong Wetlands

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 or
b) Updated information on an existing Ramsar site

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:

7. Map of site:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

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:

e.g. the boundary is the same as an existing protected area (nature reserve, national park, etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The northern boundary at 14°47'06"- 106°02'10" to 14°46' 18"- 106°05'12" is along the road 18A (the road connecting from Thangbeng village at Km 48 of Pathoumphone District, Champasak Province to Sanamxay District of Attapeu Province) boundary follows from Ban Topsok to the conjunction road access to Ban Phaopho. The boundary curves along this access road running through Ban Kelae Noy then connects to Ban Phapho villages (eastern boundary). The southern boundary is between 14°43'02"/106°04'37" to 14°42'19"/106°08'26" and draws along the forest of Xe Pian National Protected Area from Phapho village to Kiat Ngong village and the west boundary is from Kiat Ngong village to approximately 500 m before Thopsok village (14°46'16"/106°02'16").

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

Provide the coordinates of the approximate centre of the site and/or the limits of the site. If the site is composed of more than one separate area, provide coordinates for each of these areas.

Coordinates for the center of the wetland is 14°45'52.2"N 106°03'30.9"E

Most northerly point: 14°47'29"N, 106°02'21"E (Thopsok village Road 18 A)

Most southerly point: 14°42'01"N, 106°08'30"E (Phalaybok, marginal forest of Xe Pian)

Most easterly point: 14°43'53"N, 106°08'42"E (Chong Houay)

Most westerly point: 14°46'16"N, 106°02'16"E (Kiat Ngong village)

9. General location:

Include in which part of the country and which large administrative region(s) the site lies and the location of the nearest large town.

The site lies in Pathoumphone District, Champasak Province in southern Laos, approximately 56 km south of the provincial capital, Pakse.

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

Elevation of the site is 120 to 200 m above sea level

11. Area: (in hectares)

2,360 ha

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

There are a number of important wetlands within the Beung Kiat Ngong Wetlands complex and this includes swamps, lakes and marshes scattered throughout the area (Claridge, 1996).

The Beung Kiat Ngong Wetlands are connected to several small streams, including the Houay Ta-kuan and Houay Ta-euang, the Xe Khampho and Xe Pian Rivers, and the Xekong River, and thus during the wet season these areas are all ecologically connected. Part of the wetland,

however, is in the Tamo River Basin. The edge of the wetland is forested, and is surrounded by large stunning trees, including species typically found in the south and east of Laos. Seasonal and perennial flooded grasses and some emergent trees are found here. The forest is rich due to the good quality soil and abundance of water

Beung Kiat Ngong wetlands is part of the tributaries of Xe Khampho River, which supports well over 150, and possibly up to 200-300 fish species (Baird and Shoemaker 2008; Baird et al; 1999; Mather et al., 1997). However, the main wetland area certainly includes less fish species than the main rivers outside of the Beung Kiat Ngong Wetlands. During the wet season, the wetland is a passing way for varieties of fish to move upstream. About 43 fish species have been reported while during the dry season, only about 20 fish species remain in the area. The fisheries, include Walking catfish (*Clarias* spp.), Snakeheads (*Channa striata*), Swamp eel (*Monopterus albus*). This area is also an especially important area for fishes to live during the low water dry season. This area is also used for fishing by local villagers during the dry season. Wild vegetables and other products from the wetlands provide the surrounding communities with food and income. The economic value of all products coming from Beung Kiat Ngong Wetlands is estimated to be USD 897,607 per year (Khamlibounthavi, 2008).

In 1996, a survey found 33 wetland-associated bird species (Claridge, 1996). In 2009, the surveys conducted in the 6 main villages surrounding the wetlands show the similar number of bird species included: Cattle egrets (*Bubulcus ibis*), Intermediate egret (*Mesophoyx intermedia*), Lesser tree ducks (*Dendrocygna javanica*), Painted snipes (*Rostratula benghalensis*) and Chinese pond heron (*Ardeola bacchus*). In fact, detailed bird surveys would undoubtedly reveal a much larger number of wetland-associated bird species. Being part of the Xe Pian National Protected Area, there are undoubtedly hundreds of bird species in the wetland area.

The wetland is suitable for small and medium nesting sites for water birds, and as sources of food for birds, wild and domestic animals, and humans. It is also a significant fish spawning ground during the wet season, and a fish sanctuary during the dry season. The aquatic habitats are thought to be home to freshwater tortoises such as the vulnerable Malayan snail-eating turtle (*Malayemys subtrijuga*), endangered Elongated tortoise (*Indotestudo elongate*), and the Yellow-headed temple turtle (*Hieremys annandalii*). Other fauna include snakes like the Striped water snake (*Enhydryis jagorii*), Gerard's water snake (*Gerarda prevostiana*), White-lipped pit viper (*Tremeresurus albolabris*), and the Cobra (*Naja* sp).

Many small animals and insects found in the area are sources of food for water birds. As part of Xe Pian National Protected Area, this wetland area is considered important for bird feeding and occasionally for nesting. However, detailed studies on biodiversity have not yet been undertaken. Therefore, it is not known for sure how many water birds and fish live in the area.

The wetland supports around 11,534 people from 6 core villages and other 7 involved villages who are heavily reliant on wetland and river resources. These farming villages are primarily reliant on subsistence rice paddy cultivation and also earn income from wild-capture fisheries and non-timber forest products. Some income also come from tourism businesses, particularly in Kiat Ngong Village. The paddy fields found around the edge of the wetlands and are especially dominant in the second main part of the wetland – the seasonal wetlands on the east. About 4,322 cattle and water buffalo and 27 elephants are living in the wetland area.

13. Ramsar Criteria:

Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.

1	2	3	4	5	6	7	8	9
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14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 1:

The Beung Kiat Ngong Wetlands are the only place in Lao PDR where peatland areas can be found. Basically, much of this wetland is peatland or peatmarsh and swamps. However, the Beung Kiat Ngong Wetlands would be distinguished in three main wetland types: as perennial-peatland wetland, seasonal semi-peatland wetland, and riverine wetlands. The perennial-peatland wetland is found in the first main part of the wetland, which includes high quality of peatland, the second main part of the wetland is considered seasonal semi-peatland wetland with low quality of peatland. Perennial-peatland wetland is about 400 ha located on the west while seasonal semi-peatland wetland is about 1,000 ha on the south.

Criteria 2:

The site supports the following threatened species

Common name	Scientific name	IUCN	CMS	CITES
Malayan snail-eating turtle	<i>Malayemys subtrijuga</i>	Vulnerable	Appendix II	-
Sambar	<i>Cervus unicolor</i>	Vulnerable	-	-
Leopard cat	<i>Prionailurus bengalensis</i>	Least concern	-	Appendix I
Fishing cat	<i>Prionailurus viverrinus</i>	Endangered	-	-

Criterion 4:

Compared to wetlands in the surrounding areas, water remains throughout the year in Beung Kiat Ngong, and thus is an especially important area for fish to live during the low water and dry season in other areas. About 43 species have been reported here while only 20 fish species remain in the area during the dry season

Table 1: Key fish species that live in the Beung Kiat Ngong during dry seasons

Local name	Common name	Scientific name
Pa kho	Snakehead murrel	<i>Channa striata</i>
Pa douk	Walking catfish	<i>Clarias batrachus</i>
Pa douk oui	Bighead Catfish	<i>Clarias macrocephalus</i>
Pa kadeut	Blue Gourami	<i>Trichogaster trichopterus</i>

Pa cheo	striped flying barb	<i>Esomus metallicus</i>
Pa cheo oa	Pale rasbora	<i>Rasbora aurotaenia</i>
Pa kang	Dwarf Snakehead	<i>Channa gachua</i>
Pa nin	Nile Tilapia	<i>Oreochromis niloticus</i>
Pa ein	Swamp eel	<i>Monopterus albus</i>

Criterion 8:

Beung Kiat Ngong Wetlands is an important fish spawning ground. Fish stocks spawn both inside the wetland, and during the wet season, about 23 species migrate to upstream tributaries to spawn.

Table 2: Key fish species that migrate into the wetlands for breeding

Local name	Common name/Family	Scientific name
Pa kuane	Channidae	<i>Channa sp.</i>
Pa pao	Tetraodontidae	<i>Tetraodon sp.</i>
Pa do	Channidae	<i>Channa sp.</i>
Pa tong	Asian Knifefish	<i>Notopterus notopterus</i>
Pa keng	Cyprinidae	<i>Cirrhinus sp.</i>
Pa vienphai	Cyprinidae	<i>Danio sp.</i>
Pa kha yang	Cyprinidae	<i>Cirrhinus sp.</i>

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

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

At the broadest Asia regional scale, Beung Kiat Ngong Wetlands is included the Indo-Burma Biodiversity Hotspot or the Central Indochina area (tropical lowland plain)

b) biogeographic regionalisation scheme (include reference citation):

Conservation International, 2006

MacKinnon and MacKinnon, 1986

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Beung Kiat Ngong Wetlands is located in a large plain descending from the Bolaven Plateau which is an old volcanic (presently inactive) mountain. Large numbers of different sized rocks are scattered throughout the area, many of which originated from volcanic activities in the past. Some came from lava flows; others came into the area as a result volcanic explosions. Some very rocky areas are called 'lang' in Lao.

Beung Kiat Ngong Wetlands is situated in a monsoonal zone with one distinct dry (late October-early May) and one distinct wet season (late May-October). Temperatures can range from an approximate low of 14.5°C in January (humidity 32-95%) to a high of around 38.3°C in April (humidity 39-96%) with humidity approaching 99% throughout the wet season (from Pakse Meteorological Station records). Average annual rainfall at the site is around 2,000 mm with up to 1/3 of the rainfall recorded during the month of August.

The main part of the Beung Kiat Ngong Wetlands is not an open surface wetland. Above the water surface, there is a thick layer of decayed grasses underneath and new shooting grasses and emergent weeds as well as bushes on the surface areas. Many different sizes of islands with high and stunning trees and piles of huge rocks can be found in the wetland. The thick layer of grasses is found mainly in the first main part of the wetlands where we can see it floating while underneath is still water. Water quality is still quite good since it has not been heavily disturbed, and because there is a low level of chemical use in agriculture around the wetlands. Most parts of the wetland are shallow, although some areas are as deep as 2-3 m in the dry season. Water permanence during the dry season is about 300-400 ha for the main part of the wetland. Apart from this there are some other scattered small marshes and swamps that retain water throughout the year.

During the wet season water levels go up, peaking from August to early October, with floods close to 2 m above dry season water levels. This occurs throughout the area. The thick layer of floating grasses can be observed in the dry season, particularly in April and May the layer of thick floating grasses becomes harder. Where there is shallow water, it becomes likely mixed grass and soil. However, in the deep water area there is still water underneath. Humans can walk on top of the soggy thick layers during dry season. Rice paddy fields are found around the edge of the wetlands and mainly in the second main part of the wetland area on the east. Dry crop cultivation is also practised but on a small scale. Because the soil quality (fine texture/basalt, alluvia diposite) of the wetland area is very highly fertilized by natural sediments distributed during flood periods, local villagers tend to cultivate without using any chemical fertilising inputs.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

The catchment area of Beung Kiat Ngong Wetlands include streams that flow to the wetlands is estimated be at least 10,000 ha (Khamlibounthavi, 2008). There are two main water sources of the wetland, one from Xe Pian National Protected Area (Xe Khampho Basin) and another from Dong Hua Sao National Protected Area (Ta Mo Stream Basin). Forest types in the catchment area include lowland dry evergreen forest, mixed deciduous forest, shrubs etc.

Most parts of the catchment area is arable land with naturally fertile soil (fine texture/basalt, alluvia diposite), suitable for cultivation. Most of soil color in the wetland regime is blackish, while the area outside of the wetland has reddish soils.

18. Hydrological values:

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

As mentioned earlier, Beung Kiat Ngong Wetlands function to mitigate flash flood in the area. Sediment trapping is observed in the area because of slow water flow in wet season. On the other hand, the wetlands store and maintain ground water in the area.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal:

A	B	C	D	E	F	G	H	I	J	K	Zk(a)
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Inland:

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

1	2	3	4	5	6	7	8	9	Zk(c)
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b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

M & N – The Mekong River, braided and main channels, deep pools, rapids and waterfalls

4 & 3 – Rice fields (rain-fed & irrigated)

W & Xf – Emergent and flooded scrub (shrubs); riparian, seasonally flooded forest

Tp & Ts – Marshes with small pools (*nong*), reduced significantly in area in dry season, farm ponds

2 & 4 – Farm ponds.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

It is well known that Beung Kiat Ngong Wetlands is one of the most important wetland areas in Laos, and it is considered a unique wetland area in the country. Both perennial and seasonal ponds form the wetlands complex, including landscapes composed of fresh water marshes, lakes, ponds, rice paddy fields, seasonally flooded grassland, shrubland and forest (Claridge, 1996). Found in the area are water birds, a variety of fish, vegetation, livestock grazing areas, fish ponds, remote settlements and traditional rice cultivation. The Kiat Ngong Wetlands/Kiat Ngong Village is well known as an ecotourism site in Champasak Province, and in the village boundaries

is Phou Asa (a hill with an old stone structure on top of it). It is a well known place for elephant riding.

Apart from peatlands, the area also includes riverine wetlands and there are rich semi-evergreen forest areas within the broader wetland mosaic.

It is a spawning ground for indigenous fish species as listed in table 1 and it is generally an important site for various kinds of aquatic resources such as fish, frogs, snails. It is the most upper flooded plain of the Xe Khampho/Xe Pian River Basin, an important sub-basin of the Xekong River (Baird and Shoemaker 2008), where fish migrate to breed during the wet season. Beung Kiat Ngong Wetlands is a complex landscape where people live with nature. Local villagers rely on the wetlands for collecting wetlands resources for securing livelihoods. Villagers earn almost US\$ 1 million per year from directly wetlands resources uses particularly collecting fish, frogs and some wetland vegetables. About 6,000 domestic buffalos use the wetlands for grazing, this can increase the economic value of the wetlands. The area is not only important for the fish community but also as a feeding site for bird species and the local community's well protein intake.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The flora status of the wetland has been poorly studied. Some general description of the flora was prepared by Claridge (1996) and some work was also done during the BIORAP survey in the main part of Xe Pian National Protected Area (Mather et al, 1997). Recent work has been done on the economic value of the wetlands (Khamlibounthavi, 2008). However, these surveys did not focus on specific plant species. At present it is not known if any rare or endangered species are present in the area. More broadly, the wetland is surrounded by valuable tree species such as Malva nut trees (*Mak chong*), which is not important for its wood but for its fruit. Although harvests are not consistent from year to year, in some years these fruits are a very important source of income for local people. During peak Malva nut harvest years there is also a lot of wild honey harvested from the area

Current study shows that there are 350 medicinal plant species identified in the Beung Kiat Ngong Wetlands and its adjacent areas including *Tinospora crispa*, *Desmodium lanceolatum*, *Orthosiphon stamineas*, *Vitex trifolia* etc.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Historically, the wetland supported key species such as Siamese crocodiles (*Crocodylus siamensis*), Sarus cranes (*Grus antigone*), Great adjutants (*Liptoptilos dubius*) and Oriental darters (*Anhinga melanogaster*). These species were reported in the area 15 years ago (Claridge, 1996), but have not

been confirmed as being found in the area recently, although there are still some occasional reports of Siamese crocodiles.

In the past, the Beung Kiat Ngong Wetlands has not been adequately studied and therefore, there is no detailed list of the fauna of the area, especially for this site. A number of bird species (section 12) and some mammals are present in the area such as Barking deer (*Muntiacus muntjak*), rabbits, civet (*Viverra sp*) and also reptiles, amphibians, fishes, etc are present and that partly mentioned in section 12 and 14. Some bird species in the area are Cattle egrets (*Bubulcus ibis*), Lesser tree ducks (*Dendrocygna javanica*), Greater painted snipes (*Rostratula benghalensis*), Chinese pond herons (*Ardeola bacchus*) etc (Claridge, 1996). There are many fish species but a complete study on this has not yet been undertaken. More broadly, and in terms of ecosystem the wetland values, the area is still important for some key mammals species such as Guar (*Bos frontalis*) which is recently reported in the area close to Kiat Ngong Village.

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:

Beung Kiat Ngong Wetlands is well known for tourism, especially for elephant riding to Phou Asa. Phou Asa is marked by many piles of flat stones set up in a flat area on top of the hill where a 'temple' is located. Each pile is about 3 m high. These piles are shaped like pillar stones, and stand similar to fence posts. This temple was built under the direction of the Buddhist monk, Phra at the beginning of the 19th century. He gathered up an army of ethnic minorities to fight against the oppressive slave trade. They sacked and burnt Champasak, forcing the king of Champasak, Chao Manoi, to flee. Later, King Anouvongsa's son, Chao Nyo, eventually captured him in Attapeu (Baird 2007).

Sightseeing from Phou Asa Mountain is very attractive to tourists where it provides a view of large green wetlands and the wetland boundary surrounded by stunning evergreen trees and forest. Besides visiting Phou Asa, other tourism activities are possible, including eco-trekking and bird watching.

Local people rely primarily on fishing and agriculture for their income and food supply from Beung Kiat Ngong Wetlands. Local villagers harvest fish and vegetables through the year from the wetlands and do rice paddy cultivation in the wet season around them. During the wet season local villagers use boats for fishing and to do farming areas. Within the wetlands there are some islands that are well respected. In recent years the fishing techniques have not changed much. However, right now, there are more people, and more competition for natural resource use. Due to a wide variety of habitats and abundance of fish, local villagers harvest about 474 tonnes of fish annually, 179 tons of other aquatic resources, and 75 tons of vegetables which together generate USD 759,985 of income per year for the villagers (Khamlibounthavi, 2008). In addition, the wetland also supports the water source for rice paddy cultivation and some gardening.

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:

A number of deep-water pools in the area have recently been protected by villagers for fish breeding site with the support of the NGO, the Global Association for People and the Environment (GAPE). There are many kinds of deep-water protected areas in Laos (Baird, 2006). These villages have also prepared other fisheries-based rules.

Different types of formal and informal management arrangements exist, including individual village established and enforced regulations for managing living aquatic resources, traditional family based arrangements, and government enforced regulations.

- 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:

24. Land tenure/ownership:

- a) within the Ramsar site:

Within the site boundaries there is both common land owned by the government but local villagers have the right to use it. Individually owned property includes areas of house settlement area, paddies, gardens, sites for fishing wing traps and fence-filter traps, and some small inland fish trap ponds (*loum pa*) (natural and human made or influenced). A traditional tenure system exists that allows for private ownership of trap ponds (Baird and Shoemaker 2008). Common property land includes deep-water pools, forest areas and river channel areas outside of those with fishing agreements. The inland fisheries are generally managed as a common resource.

- b) in the surrounding area:

25. Current land (including water) use:

- a) within the Ramsar site:

Land and forest allocation program has been conducted in the area to allocate land and to establish agreements on land use resource responsibility from village to village, as well as property land allocation to each household (e.g. paddy land, gardens). Single crop rain-fed rice is relatively productive in this area. Other agricultural activities include kitchen gardens; fruit crops for home consumption and sale; livestock production (cattle, water buffalo, poultry); and non-timber forest product (NTFP) and non-fish aquatic resource collection (mainly frogs). In the dry season, when the water level is lower, local people grow a wide range of vegetable crops in some proportion of the wetland typically for use by the family.

Of particular importance are a large number of semi-natural fish trap ponds (*loum pa*) owned by villagers in the area. These trap ponds are located in areas that dry out during the dry season. They are filled with vegetation by fishers. As the wetlands dry out fish concentrate in these holes. Then, when surrounding wetland areas are dry, usually in March and April, villagers remove the vegetation from the holes, scoop out the water, and harvest the fish (including swamp eels). Some families have a number of these trap ponds.

b) in the surroundings/catchment:

The catchment of the wetland to the north has similar practices of land use and is part of the area designated as Dong Hua Sao National Protected Area to the north and Xe Pian National Protected Area to the south. Agricultural production, especially rice paddies are common to the area. There are special varieties of rice in the area that are adapted to local conditions, such as floating rice. There is no industrial or commercial development in the area. However, industrial monoculture rubber plantations are increasing in the catchment area, replacing forest areas. These plantations, and others planned in the area, may pose a significant threat to the area in the long-term. 650 square meters of peat is extracted from the wetland each year to make natural fertilizer. In addition, some wetland areas have been converted into rice fields. Research conducted in the area has clearly shown that people have tended to lose more fish than they have gained rice when this conversion process occurs. Some years, a water level is too much some plots of rice paddy located around the wetlands could not be harvested and gain low rice products due to over floods. It has also been shown that many 'food security' projects have funded this conversion, even if actually decreases food security (Baird and Shoemaker 2008).

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:

- Peat extraction for bio fertilizer has been on-going in the northern part of the wetland. Approximately 650 square meters of peat is being extracted each year.
- Potentially unsustainable harvest of aquatic resources (fish).
- Increased number of cattle and buffalo might generate more pressure on capacity of wetlands
- Conversion of most of the remaining natural marsh areas into rice-paddy fields (see Baird and Shoemaker 2008).
- Insufficient human and financial resources to implement management plans effectively
- Environmental issues which may be associated with insensitive tourism expansion has not been properly addressed or prevented

b) in the surrounding area:

The situation relating to natural resources is similar to the above, but also includes issues and concerns relating to a higher population density and economic development in Pathoumphone District, just 8 km away. This might influence to the use of the wetlands in the future.

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

The Beung Kiat Ngong Wetlands lie partly within Xe Pian and the Dong Hua Sao National Protected Areas, both established in 1993. The Forestry Law and related regulations have been developed to be a legal tool to support the management and conservation of biodiversity. Therefore, based on the legislation, the area is restricted from natural resources exploitation. Another part of the larger Beung Kiat Ngong Wetlands complex is Beung Phapho, which is not legally protected because it lies outside of the protected areas.

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.

d) Describe any other current management practices:

At present, one can see how government policies, villager practices, and industrial company exploitation are intermingling. All the villages were affected by land and forest allocation in the 1990s. Some villages now have protected wetland areas, especially deep-water pools, and forest areas within the broader wetland area. The increased expansion of rubber plantations is also greatly affecting land-use practices in the area. The affected of peat extraction are not as clear. 'Loum pa' (fish traps) are one of the most important fishing methods in the wetlands. These areas are considered to be privately owned, with fish being harvested at the height of the dry season. In the main wetland area, fish are also caught in many other ways (see Baird and Shoemaker 2008; Claridge et al. 1997) especially using hooks but start using electro fishing and pump water from their ponds for harvesting fish during dry season.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

IUCN Livelihood and Landscape Project is conducting land use surveys, conducting rapid biodiversity surveys and boundary consultation. This information is important to support the development of a plan for site management.

29. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

None

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.

Education and raising awareness activities on the importance of biodiversity and wise use have been conducted in the past from the support of Lao-SIDA/IUCN and Danida and the Global Association for People and the Environment (GAPE), but have always been reliant on project

funding. This kind of work had, had limited success due to the lack of long-term funding, although GAPE has been working in the area for almost 8 years, and plans to continue working there.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Beung Kiat Ngong Wetlands and Phou Asa are some of the most famous tourism sites in Champasak Province, after the Khone Falls and Vat Phou Temple. Due to the many interesting sightseeing areas available in the province, the number of domestic and foreign tourists visiting Champasak Province has increased steadily. There are about 10,000 tourists per year as many tours in southern Laos stop at Kiat Ngong Village to visit Phou Asa. Transport and access to the province has improved, with daily flights to Pakse, a road bridge crossing the Mekong, an improved and easier road to the international border crossing with such Thailand at nearby Chong Mek, and the soon to be completed road links to Vietnam and Cambodia [ADB, 2004]). Visitors to the province can enjoy a number of attractions. All of these factors mean that the number of visitors to the area is only going to increase in the future. Careful management is needed to ensure that negative impacts on the Ramsar Site are minimized and that the benefits are shared throughout the community.

Since tourism has expanded in Kiat Ngong Village, villagers have had the opportunity to expand their elephant riding service, as well as participate in guiding tours, as well as operating guesthouses and home-stay services, and selling handicraft or other local products to tourists. More tourism services and facilities have been developed with eco-trekking routes, bird watching places and more routes for elephant riding have been established.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Pathoumphone District, District Agriculture and Forestry Offices (DAFO).

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Pathoumphone District, District Agriculture and Forestry Offices (DAFO).

Tel: n/a

Fax: n/a

Email: n/a

Champasak Provincial Agriculture and Forestry Office (PAFO), Pakse, Champasak Province, Lao PDR.

Mr. Khamphay Luanglath

Tel: +856 (031) 212259

Fax: +856 (031) 212067

Email: n/a

Water Resources and Environment Agency (WREA) in Pathoumphone District and Champasak Province

Mr. Bounkham Phothisane

Tel: +856 (031) 213997

Fax: +856 (031) 213997

Email: n/a

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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