

## Information Sheet on Ramsar Wetlands

1. Date this sheet was completed/updated: 25 October 2001

2. Country: Guinea

3. Name of wetland: Niger-Tinkisso

4. Geographical coordinates:

11° 00' and 11° 40' North latitude  
08° 30' and 10° 00' West longitude

5. Altitude: 352 metres

6. Area: 400,600 hectares

7. Overview:

The site is located on both sides of the Niger River between Diolibakoro Landing, passing through the town of Siguiri up to the border marker between Guinea and Mali and from the junction of the Niger-Tinkisso along both sides of the Tinkisso River up to 10° 00' West longitude. It is bordered by Mali, to the west by the prefecture of Kouroussa, to the south by the prefectures of Kankan and Mandiana, which it partially covers, and to the north by the prefecture of Dinguiraye. There is Sahelian vegetation because it is in this unique area that *Acacia albida* is found in the entire Niger basin. The climate is dry with temperatures that range between 28° and 32° C. There are two seasons: the dry season from November to May and the rainy season from June to October. The dry season is marked by a dry wind, the harmattan, and the winter by rainfall ranging from 1300 to 2000 millimetres. The relief is almost flat and gives the site the appearance of a large alluvial plain in the middle of which streams twist among pools, several of which remain year round. The floodplains are important for agriculture and fishing.

8. Wetland type: M, N, Tp, 3, 4 and 7

Inland wetlands:

M: Permanent rivers/streams/creeks; including waterfalls;

N: Seasonal/intermittent/irregular rivers/streams/creeks;

Tp: Permanent freshwater marshes/pools; ponds (fewer than eight hectares), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season;

Human-made wetlands:

- 3: Irrigated land; including irrigation channels and rice fields;
- 4: Seasonally flooded agricultural land (including intensively managed or grazed wet meadow or pasture);
- 7: Excavations; gravel/brick/clay pits; borrow pits, mining pools;

9. Ramsar criteria: 1, 2, 3, and 4

Criteria that best characterize the site:

Criterion 3 best characterizes the site because of the presence of *Acacia albida*, which reflects advanced degradation of the ecological system. The site is considered an entry point into the Sahel and, therefore, is worth protecting.

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

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

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12. Justification of the criteria selected under point 9, on previous page:

Criterion 1: The site is a sub-unit forming an upstream part of the Niger River, representative of the most important types of wetlands in West Africa.

Criterion 2: The site is the habitat of a population of endangered manatees, which are fished for their flesh. The manatees are also victims of accidental catches. An endemic endangered species of fish, the *Arius gigas*, is found at this site. This fish belongs to the Ariidae family of several genera of large Siluriformes in general. It is endemic to the Niger basin. This endemism dates from long ago because the other species, *Chrysichys furcatus* (*C. maurus*) and *Lates niloticus* dating from the Lower Holocene, were identified in the Central Delta of the Niger by Daget in 1961. Contrary to many other species in the genus *Arius* living in the sea or in brackish water, *Arius gigas* is strictly a freshwater fish. Apparently, *Arius gigas* was formerly relatively abundant in the Niger. This is the only site in Guinea where *Acacia albida* exists, although maintenance of biological diversity remains threatened. The Eland de Derby also exists here. This large antelope, which was considered extinct, has just been discovered at the site, but it is very endangered.

Criterion 3: The importance of the site for conservation of biological diversity in West Africa is justified by the richness of the fauna and flora, including rare species (see

items 16, 17 and 18). In addition, the site is visited annually by the following species of waterfowl: spur-winged goose (*oie de Gambie*) (*Plectropterus gambensis*), white-faced tree-duck (*dendrocygne veuf*) (*Dendrocygna viduata*), *héron garde-boeuf* (*Ardeola ibis*), *aigrette garzette* (*Egretta garzetta*) and *jacana* (*Actophilornis africana*). Molluscs (list not available) are apparently rather abundant in the Niger basin (especially the bivalve *Aspatharia* sp. and the oyster *Aetheria elliptica*).

Criterion 4: The site serves as a refuge under severe climatic conditions for aquatic and terrestrial fauna. The most recent studies estimate that the current total number of species in the Niger River is 207 species, second place in Africa before the Nile with 127 species and far behind the Congo River, which has 690 species. This large number is due to several factors, including the area of the watersheds, average flow, length of the basins and richness in micro biotopes. This site is part of the migration corridor for large mammals in Guinea. There are also many Afro-tropical migratory birds.

### 13. General location:

The site covers most of the prefecture of Siguiri, which is located 150 kilometres from the administrative centre of the regional government (gouvernorat) of the administrative region of Kankan. Siguiri is 813 kilometres from Conakry. The site is administered by decentralized services at the level of the forestry service in the number of 13 in the prefecture of Siguiri and two in the prefecture of Mandiana (Sansando and Dialakoro).

### 14. Physical features:

Soils: The site is located on poorly evolved entisols and fersiallitic, hydromorphic and alluvial soils. This gives it a large and quite varied potential for agriculture.

Hydrology: The site has a dense hydrographical network with one of the most important tributaries, the Tinkisso. It is the main drainage for all water leaving Guinea for Mali (see list of all the streams of the Niger basin in the annex). Water quality is relatively good but there is risk of pollution because of mining and the use of pesticides in growing cotton in the region. The Koba River is polluted by mining of the Ashanti goldfields further upstream. Water depth varies from season to season. It is deepest in July, August and September and the low-water season is in February to April. There is silting-in. The watershed is important for the whole river and feeds the upriver part of Mali.

### 15. Hydrological values:

This wetland plays a role in the water balance downstream, depending on the climatic conditions. Capture of sediments and seasonal flooding are important. Silting of the riverbed is a concern at the site on the banks of the Niger River. There is no sign of silting on the Tinkisso River. Water quality is good, in light of the aquatic diversity. There is pollution of the Koba River from mining by a company operating there. Gallery forests and forestation are a means of preventing erosion of streams. It is at this site that the exit for the entire Niger basin is found.

## 16. Ecological features:

Plant morphology: The vegetation is composed of herbaceous plants, grass savannahs, wooded savannahs and gallery forests along streams.

Habitats: Minor beds of rivers and streams, floodplains, perennial or temporary ponds formed in the depressions of the lowlands, pseudo lakes that are merely wide extensions of minor streambeds, backwaters that are *biefs* linking the minor stream beds to the floodplains and sandbanks, holes and ditches.

Species of dominant plants: Local ligneous plants: *Acacia albida*, *Azelia africana*, *Bombax costatum*, *Danielia oliveri*, *Kaya senegalensis*, *Pterocarpus erinaceus*, *Sigysium guinensis*, *Uapaca* sp., *Vitellaria paradoxa* and *Vitex doniana*.

Introduced species: *Acacia auriculiformis*, *A. mangium*, *Casia ciamea*, *Gmelina arborea*, *Gosipium* sp. and *Tectona grandis*.

The aquatic and semi-aquatic (riparian) plant associations are dominated by the Gramineae: *Andropogon*, *Pennisetum*, *Vetiveria* on the edges and *Echinochloa* spp., *Oryza*, *Panicum* in the area subject to flooding only in the ponds where there are also Nymphaeaceae (*Nuphar lotus* and *N. sp.*), *Hydrocharis* and *Ceratophyllum*. Some places, Cyperaceae (*Typha*) dominate. The banks are often deforested and covered with Gramineae, diverse shrubs, *Mimosa* sp. (semi-aquatic) and sometimes reeds (*Phragmites*). The Tinkisso still has banks with a dense and wide gallery forest.

Invasive species: *Typha*. Other species such as water hyacinth and water lettuce have not yet been found.

The vegetation is almost identical with that of the surrounding areas.

## 17. Noteworthy flora:

*Acacia albida* and the shea tree (*arbre à karité*) (*Vitellaria paradoxa*) are species very closely linked to the wetlands. *Acacia albida* is found only at this site in all the Niger basin. *Vitellaria paradoxa* has been recorded at this wetland and not in the Niger basin.

## 18. Outstanding fauna

The fauna is rich and varied. There are mammals, reptiles, insects, amphibians, birds and fish (see figure 5 in the annex).

Molluscs (list not available), apparently rather abundant in the Niger basin (especially the bivalve *Aspatharia* sp. and the oyster *Aetheria elliptica*), are hardly eaten. Crustaceans (shrimp *Macrobrachium* spp. and crabs Potamonautidae) are occasionally consumed locally. Reptiles (list not available), including turtles, crocodiles and mammals (hippopotamus and manatee) are seldom hunted, above all, for lack of means.

An endemic species is the fish *Arius gigas*. This fish belongs to the Aridae family, in which are included large Siluriformes in general. It is endemic to the Niger basin. This endemism goes far back because remains of that species, *Chrysichys furcatus* (*C. maurus*) and *Lates niloticus* dating from the lower Holocene were identified in the present Central Niger Delta by Daget in 1961. Contrary to many other species in the genus of *Arius* living in the sea or brackish water, *A. gigas* is strictly a freshwater fish. Earlier, *A. gigas* was relatively abundant in the Niger. Because of the rapid growth of river fishing and the economic importance of the species, stocks have very quickly dropped to the point that *A. gigas* was threatened with extinction. Its large adult size (about 1400 millimetres long and weighing up to 40 kilos) makes it an especially vulnerable species.

#### 19. Social and cultural values:

Agriculture: At the site, agriculture is the main activity (see figure 4b in the annex)

Grazing: This is prospering (see figure 4c in the annex).

Fisheries: According to Dr. H. Matthès, the production of Guinean freshwaters (excluding brackish estuarine water) is between 8,000 and 10,000 tons per year, of which 6,000 to 8,000 tons just from the Niger River basin. Despite a lack of specific data for the site, there is good reason to state that fishing is an important activity in the wetland.

The raising of bees is an activity that is becoming increasingly important at the site. Tourism is linked to the fête des mares and the struggle against colonization. There is an archaeological site at Niani, capital of the Mali Empire. In general, all these activities are carried out extensively, which does not contribute to the sustainable exploitation of resources. However, the protection of the ponds by families is a factor of sustainable management of resources.

The fête des mares is held every year at the beginning of the winter in May. The fête always begins with a ritual ceremony. The eldest families of owners and managers of the pond gather with other dignitaries of the village at a specific place on the edge of the pond; generally in a gallery forest protected for the occasion to make an offering at the base of a large *fromager*. Other participants in the ceremony, with branches of *Combretum micrantum* tied around the waist and head, stand around waiting for a call to enter the pond. Some participate in the ceremony to ask for happiness and material well-being (children, health, money or power) while others come to offer gifts that they promised at previous ceremonies if their wishes were granted. These ceremonies attract tourists from the sub-region.

#### 20. Land tenure/ownership of:

At the wetland, in the absence of a property code, the land tenure system is based on customary law. Ownership of land is gained through having occupied it first or inheriting it from parents who were the first inhabitants. The land can be loaned, given or given in guarantee, but is seldom sold. However, the government remains the potential owner of all land.

Committees have been organized in the river basin by the Direction Nationale de la Gestion des Ressources en Eau (DNGRE) for protection for wise management of water resources and protection of natural resources (land, soil, and vegetation).

In the surrounding area: The surrounding area is subject to the same principles as the site.

#### 21. Current land use:

**Agriculture:** Agriculture is the main activity of the local population at the site. The diversity of soils and their potential productive justify this option. A 1995 agricultural survey provided data (see figures 4a, 4b and 4c in the annex). Agriculture, livestock raising, fishing, panning for gold and hunting are activities in the surrounding region.

**Population:** (see figures 1 and 2 in the annex).

Water supply is both surface and underground.

These activities are also current in the neighbouring basin shared with Mali.

The growing of cotton is a potentially adverse factor for the environment given the increasing use of pesticides for cotton.

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

At the site, from time memorable, the main adverse factors, extensive agriculture with its corollaries of abusive clearing and the burning of bush, have contributed and continue to affect unfavourably the ecological system at the site. This has led to denudation of the soil by exposing it to water erosion leading to destabilization of the banks and silting of the riverbed. In addition, there is a decrease in the vegetative cover leading to substantial reduction of wildlife through decreased habitat.

Excessive fishing and the method used for capture and banned methods have greatly decreased fish stocks.

Panning for gold is a long-standing activity at the site. Its impact on the environment has resulted in anarchical occupation of the land in the case of small-scale exploitation, high discharge of sediments, silting-in of streams, formation of shifting sand banks especially in cases of exploitation of alluvial deposits (large-scale exploitation).

Discharge of chemical pollutants (flocculants and hydrocarbons) with wastewater that could be toxic. Decrease of the water regime at the site. There is concern because of the use of pesticides in the growing of cotton. Use of chemicals emptied into streams (the case from Koba to Siguiri) by the Ashanti Goldfields Company.

#### 23. Conservation measures taken:

According to the wildlife protection code and hunting regulations, the categories of protected areas in Guinea are national parks, integrated nature reserves, managed nature reserves, special reserves or wildlife sanctuaries, areas of interest to hunting and hunting areas. The Ramsar site is in the category of managed nature reserves, where all socio-economic activities are authorized but priority is given to the objectives of the convention for sustainable management of natural resources.

Activities are permitted taking into account existing codes and regulations. For example uncontrolled burning, the killing of animals out of the hunting season, the clearing of headwaters, growing of crops on a slope and fishing with explosives or any other method leading to indiscriminate killing of fish are prohibited (see the Wildlife Protection Code and Hunting Regulations annexed by mail). There is a range of legislation, which in varying degrees helps to reinforce protection measures for natural resources, including the Wildlife Protection Code and Hunting Regulations. Under the AGIR programme (support for integrated management of natural resources) creation of a cross-border Guinea-Mali protected area is under way. Adhesion of local communities to the management of wetlands through awareness is also a conservation measure.

#### 24. Conservation measures proposed but not yet implemented:

For implementation of the development strategy for the forest sector, it is planned to prepare a forestry plan for the prefecture. The plan has the same contents as the national and regional forest plans with the only difference that it specifically takes into account the needs and specific conditions of each prefecture. This forest plan will establish objectives and includes a description of the status of forest resources, an estimate of the need for forest products, a programme of activities to carry out in order to ensure production and development of the forests, an estimate of the investment required and any other useful indication for implementation of the prefectural forestry policy. Expansion is planned of the Guinea-Mali cross-border protected area to a large part of the site. Also, many regulations for various codes are ready for signature.

#### 25. Current scientific research and facilities:

Surveys of wildlife are under way for creation of the cross-border Guinea-Mali protected area. There is archaeological research at the site of Niani, capital of the Mali Empire. There is prospecting for the gold deposits.

#### 26. Current conservation education:

The only current sources of education are the public media through Radio Rurale and awareness workshops for promotion of sustainable management of wetlands in villages and CRD by the government and NGOs. There are several small hotels in the town of Siguiri.

#### 27. Current recreation and tourism:

Tourism depends on the fête des mares (see item 19).

28. Jurisdiction:

Jurisdiction is both national, regional and prefectoral:

Ministère de l'Agriculture et de l'Elevage  
Gouvernorat de Kankan  
Préfectures of Siguiiri and Mandiana

29. Management authority:

Direction Nationale des Eaux et Forêts  
BP 624, Conakry, Guinea

Directions Préfectorales for Développement Rurale et de l'Environnement of  
Siguiiri and Mandiana

Sections préfectorales des Eaux et Forêts de Siguiiri et de Mandiana Site  
Niger-Tinkisso

Cantonnements Forestiers at the level of sub-prefectures at the site.

Each management agency in accordance with its responsibilities and its competence participates actively in the protection and implementation of conservation programmes at the site.

30. References:

The Wildlife Protection Code and Hunting Regulations

Chapter II: Conservation of wildlife and its habitats

Article 3: Wildlife constitutes a universal heritage. Its economic, alimentary and social interest is thus recognized, as well as its scientific, aesthetic, recreational and educational value.

It is everyone's duty to contribute to its maintenance and development. Preservation of wildlife is ensured by all appropriate means, including the protection of environments and plant species that are necessary for it.

Education of the whole population is also ensured, both through education in schools and by audiovisual means to promote national awareness of the need for that preservation.

Article 4: Wildlife is a renewable resource that must be protected by placing it in favourable environmental and management conditions. Each animal species is an integral part of the national heritage. For this reason, it should be protected. However, animal populations of a given species can be subjected to wise exploitation, especially hunting, whenever their level and productivity permits.

Article 5: The preservation, maintenance or reestablishment of sufficient diversity of environments and habitats indispensable for wildlife is also a national obligation. The environment in which wildlife lives is normally used for agricultural, grazing, forestry and aquatic or marine activities. Special protection measures of the biotopes can be applied to part of the national territory whenever the status of any species of animal justifies it.

### Chapter III: Wildlife management

Article 6: Management and wise use of wildlife consist of maintaining animal populations that compose each species at a satisfactory level. The animals thus can be used sustainably for the benefit of the local inhabitants and national well-being. To fulfil this objective, the whole country must participate. It should also participate in efforts made by other countries concerning preservation of migratory species and conservation of endangered species.

Article 7: The means, installation, modes or methods of capture or large-scale or non-selective killing are prohibited because of the danger they represent for the animal populations concerned.

### Chapter V: Protection of environments: parks, reserves and hunting areas

Article 10: In order to ensure conservation and management of wildlife, national parks, integrated nature reserves managed nature reserves, special wildlife reserves or sanctuaries, potential hunting areas and hunting areas can be created in Guinea.

Article 41: In the appropriate border areas of national territory, cross-border parks can be created, organized, improved and administered in agreement with governments of interested neighbouring countries. Cross-border parks are intended, based on a conventional basis and through institutional mechanisms of cross-border cooperation, to ensure preservation and exploitation of natural spaces located on both sides of national borders. These contiguous natural spaces should include biotopes or homogenous or complementary ecosystems and have, from the point of view of biology, ecology, culture, aesthetics, science or socio-economic considerations, outstanding characteristics or an exceptional interest that should be protected, both for the benefit of each interested country and for the benefit of the sub-region concerned.

### Forestry Code

Article 71: The forest domain should be protected against any form of degradation or destruction caused by overexploitation, overgrazing, fires, abusive clearing of land, diseases, introduction of inappropriate species and destruction.

Article 72: Whenever necessary, the forestry administration can adopt protection measures to take in the forest lands where required in order to prevent erosion on slopes, protect land and installations against water or wind erosion, protect headwaters, combat desertification, protect a rare species or fragile biotope or preserve the natural environment in general.

## Water Code

(Law 2/94/005/CTRN of 14 February 1994)

### Chapter XIV: International water

Article 55: In its relations with countries with which Guinea shares water resources, Guinea applies principles and regulations generally accepted by the international community for shared water, especially the provisions of existing conventions to which it has adhered.

## Environment Code

The environmental code stipulates the following concerning the land and underground

Article 15: The land, underground and resources that they contain are protected, as limited renewable resources or not, against any form of degradation and managed wisely.

### Inland waters

Article 27: Dumping, throwing out, direct or indirect deposits of any kind susceptible of causing or increasing pollution of Guinean inland waters are prohibited under the terms of Article 31.

### Fauna and flora

Article 48: The fauna and flora must be protected and renewed through wise management in order to preserve species and their genetic heritage and to ensure the ecological balance.

Article 49: Any activity capable of harming animal and plant species or their natural environments is prohibited or subject to prior authorization of the administration in accord with legislative dispositions and regulations.

Under the AGIR programme (support for the integrated management of natural resources) the creation of a cross-border protected area Guinea-Mali is being carried out. Participation of the local communities in the management of wetlands through promotion of awareness is also a conservation measure.