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### Information Sheet on Ramsar Wetlands

1. Date this sheet was completed/updated: 28 August 2000

2. Country: Niger

3. Name of wetland: Middle Niger Wetland

4. Geographical coordinates:

12° 4' North latitude  
3° 13' East longitude

5. Altitude: 171 metres above sea level

6. Area: 88,050 hectares

7. Overview:

Located on the left bank of the Niger River, the Middle Niger Wetland extends over 100 kilometres from Kouassi to Dolé. It is formed by the Niger River and its floodplains and by permanent and semi-permanent pools located on the floodplain and the Walwal tributary.

8. Wetland type:

Continental: M, N

Types of wetlands by decreasing order of importance: permanent bodies of water, seasonal bodies of water (Walwal and the floodplain)

9. Ramsar criteria: 1, 5, 6, 7, 8

Criterion that best characterises the site: 5 It is a place of transit for thousands of Afro-tropical and Palaearctic birds during six or seven months of the year.

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 Middle Niger Wetland is a transnational area shared by Benin, Niger and Nigeria. It is formed by a insular flood plain located between the main bed of the Niger River, acting as a frontier between Niger and Benin, and a seasonal branch on the Nigerian side (the Walwal), whose floodplain during periods of flooding includes all the pools of the Middle Niger. This area constitutes a unique habitat, made up exclusively of two dominant species of plants: *Echinochloa stagnina*, which is an excellent plant for grazing, and *Anthephora nigritana*, which is a tough herbaceous plant serving as habitat for thousands of waterfowl during their wintering and providing pasture, after burning, for cattle during the transition period.

Criterion 5: This wetland is a seasonal area of transit for several species of Afrotropical and Palaearctic birds. In February 2000, more than 26,000 specimens of waterfowl were recorded.

Criterion 7: The permanent pools on the floodplain are a refuge for several species of fish that have become extinct in other parts of the river.

Criterion 8: The vegetative cover forms a large enclave of grassland where cattle are gathered and grazed during several months a year. During periods of flooding, all the area is covered by floodwater, transforming the grassland into a breeding pond and source of food for fish.

The tributaries serve as a route for the migration of large numbers of fish in the wetland depend. Primary production, food for the fish and certain waterfowl, is very abundant because its growth is stimulated by the annual grazing of domestic cattle that leave large amounts of manure.

13. General location:

This wetland is located in the arrondissement of Gaya, department of Dosso, 55 kilometres west of the city of Gaya on the Gaya-Margou highway. The village of Albarkaïzé on the edge of the floodplain is the nearest village with a population of 444 inhabitants (RGR 1988). The arrondissement of Gaya has 264,114 inhabitants and a density of 66 inhabitants per square kilometre (RGP 1988).

14. Physical features:

This wetland is a clay and organic hydromorphic floodplain fed by a permanent river and a seasonal river. The sedimentary soil is very rich for the production of vegetation. Natural in origin, the floodplain is subject to a gradual structural modification tied to multiple farm and domestic uses. The water regime is characterized by a period of

flooding during four to five months, produced from August onwards by diluvial local rains and from November onwards by flooding of the Niger River up stream. Average annual rainfall in this area is 795 millimetres and the average maximum temperature is 35.6° C. Relative humidity is highest, 97 per cent, in August and lowest, 17 per cent, in February and March. In normal years, floods cover the floodplain during five to six months at a depth of between 80 and 150 centimetres. The gradual retreat of the floodwater continues until March when it reaches its lowest level in the main river and floodplain completely dries out. At that time, a chain of pools forms in the temporary river. The physical and chemical properties of the water vary during the annual water cycle. Annual variations in water temperature recorded range between 31.4° C in May and 17.9° C in December. Conductivity (K20 in micros/cm) has been measured between 32 and 77 on the surface. The level of dissolved oxygen measured in mg/litre is relatively constant year round except between October and December when the temperature of the water drops. It varies between 7 mg/litre and 9 mg/litre. The presence of abundant aquatic vegetation (lily pads) promotes fixation of oxygen. The pH measured at the surface varies between 7.0 and 8.8, but is usually near neutral. During the dry season, the pH is around 8 as the result of evaporation and concentration of calcareous salts. The colour of the water is usually slightly beige and quite limpid. After the first rains, the colour of the water becomes reddish brown and much less transparent. It carries sand and other sediment in suspension. The floodwater is clear and gradually changes the water to light beige.

#### 15. Hydrological values:

This wetland plays an important role in the water cycle of the Niger River. Situated on the largest floodplain in the river, it buffers annual flooding that is sometimes very high and promotes sedimentation. The spreading of water over a large area favours recharging of groundwater and decreases the risk of erosion and flooding, while maintaining water quality.

#### 16. Ecological features:

Habitats in this area vary in function of the time of year. During flooding, three distinct types of habitat are observable:

- (a) At the edge of the floodplain, a wooded habitat populated primarily with *Mimosa pigra*, which serves as a refuge for several animal species;
- (b) The floodplain itself, including the small permanent and seasonal pools covered with water lilies and large areas of grasslands composed mainly of *Echinochloa* and *Anthephora* in shallow water of a depth of 20 to 30 centimetres;
- (c) Permanent and semi-permanent branches of the river often covered with water jacinth.

During the period of low water, the vegetative cover is reduced considerably, leaving small pools and clumps of *Anthephora*. At that time, the floodplain is occupied by small

plots of subsistence crops grown by the local inhabitants. The main crops are rice, sorghum, maize and manioc for human consumption and *Echinochloa stagnina* for cattle.

Around the wetland, there are predominantly dune soils where millet is grown and where the main ligneous vegetation is formed by introduced species such as *Anacardium occidentale*, *Eucalyptus camaldulensis* and a local endemic species, *Borassus aethiopium*. The most prevalent herbaceous plant on these soils is *Anthephora nigritana*, which during the mating season for waterfowl is their habitat of choice. This species, present in the wetland as well as in the surrounding regions, is an important link in one of the food chains. Growing for several years, this species sprouts every year from the same root after annual burning and provides young shoots that are very appreciated by the animals. All of the cattle survive on this species until winter when the second grazing species in the region, *Echinochloa stagnina*, begins to grow. It is useful as a habitat for the reproduction of waterfowl and fish and permits the development of several useful elements for their feeding.

17. Noteworthy flora:

This wetland is the outstanding site for development of *Echinochloa stagnina*, which covers its surface. The other important communities are *Anthephora nigrita*, *Eichornia crassipes* and *Nymphaea alba*. At the edge of the wetland, *Mimosa pigra* develops an impenetrable area where several aquatic reptiles seek refuge. All of these species are remarkable because they play an important role in the life of the local communities as sources of forage and material for the production of floats, etc. The presence of *Eichornia crassipes* as an introduced and invasive species is also quite remarkable.

18. Noteworthy fauna:

The outstanding fauna in this wetland is above all waterfowl of Afrotropical species and large colonies of Palaearctic species. More than 20 species of birds have been recorded, with more than 28,000 specimens during the most recent survey (February 2000).

Important bird species

Species	Percentage of total bird population
<i>Anas querquedula</i>	20 per cent
<i>Dendrocygna viduata</i>	20 per cent
<i>Philomachus fugnax</i>	7 to 10 per cent
<i>Aigretta garzetta</i>	8 per cent
<i>Plectropterus gambiensis</i>	4 to 5 per cent
<i>Sarkidinornis meknota</i>	3 to 4 per cent

The most common species are *Anas querquedula* and *Dendrocygna viduata*, and the most threatened species are *Plectropterus gambiensis* and *Sarkidinornis meknota*. Apart from this important bird life, this wetland has populations of several species of fish, of which the most important are:

*Alestes baremoze*  
*Citharinus citharus*  
*Clarias anguilaris*  
*Distichodus brevipinis*  
*Heterobranchus bidorsalis*  
*Heterotis niloticus*  
*Hyperopisus occidentalis*  
*Mormyrus brevis*  
*Polypterus senegalus*  
*Prototerus annectens*

#### 19. Social and cultural values:

This wetland's social and cultural role is important in the life of the local communities. The floodplain has always been the object of traditional exploitation for centuries as a grazing area and for the production of subsistence crops on the dry floodplain. The winter production of *Echinochloa stagnina* has always made it possible to maintain cattle in the area under good grazing conditions.

During the season of low water, the local inhabitants cultivate diversified crops for their subsistence. Fishing is also an important economic activity for the wetland, because almost all of the indigenous populations carry out this activity for income.

Tourism is becoming more and more important in the area with the affluence of waterfowl during one season of the year. Several forward-looking tourists have become interested in this area because of the importance and quality of its bird life. This development is reinforced by the existence of a hunting organization on the other side of the border in Benin. The inhabitants living along the shores in the wetland have established a local mechanism for prohibiting hunting and protecting birds, which has promoted immigration of large numbers of birds from the Benin side of the river.

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

In Niger, unoccupied land belongs to the government. The wetland and all the land in the watershed are national resources, which local inhabitants have a right to use. Management of these resources as government property is carried out through decentralized regional and subregional agencies. At the local level, the inhabitants have for centuries had the right to have family plots that are inherited from generation to generation. The first inhabitants are owners and can lend or sell land to those who do not own land. However, the government can recover land for public use at any time.

#### 21. Current land use:

At the site: The main human activities in the wetland are primarily farming and livestock raising. The natural production of pastures in winter, from May to September, makes it possible to raise cattle extensively during six months of the year. During the dry period and after the cattle have consumed all the natural forage the land is used for growing food crops and fodder, until the beginning of winter and the return of local flooding of the wetland. The water has several domestic uses, from human consumption to water for livestock and small-scale irrigation. Fishing is also an important activity in the wetland. The main river and the seasonal stream (Walwal) are two important fisheries for local inhabitants. This activity provides a livelihood to more than 190 persons with an average annual capture of 440 tons of fresh fish.

In the surrounding area: Throughout the watershed, the main activities are farming and livestock grazing. The dune area and the surrounding plateaux are exploited like in the wetland, but farming is exclusively winter farming. The main crops are millet, sorghum, groundnuts and *niébé*. The season lasts for three to four months and 90 per cent of the population is active. The grazing of cattle is any activity dominated by the Peulhs, most of whom are also farmers. Most of the cattle in the region are given to them for herding, and there is transhumance from the wetlands to the plateaux during the flood period then a return to the wetland after the flooding and after grazing of farm crops and the natural pasture of the past winter.

Farming is organized in the water basin using a system that takes into account the government forests with a special status. The existing forests are protected government forests, in which the local inhabitants have some gathering rights. This is why the forests are scattered throughout the farming area. Over all, the forests occupy less than 6 per cent of all the land in the water basin, which is primarily farmland. The permanent pastures are made up of only grasslands scattered throughout the region of varying size and isolated from each other, but sought out by the increasing numerous local inhabitants. The cutting of forests for rotating crops throughout the basin and over grazing are by far the greatest threat to the wetland.

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

Evolution and modernization of systems and means of production aimed at increasing agricultural production for long-lasting food security have harmful consequences in the middle and long term for the natural ecological characteristics of the wetland. The conclusions of several projects working in the area reveal the need to create several engineering works on this rich floodplain in order to increase agricultural production quickly. The inhabitants strongly support the carrying-out of these projects to make it possible to exploit the wetland with the most appropriate means available. Throughout the water basin, technological innovations are being incorporated into the production habits of the inhabitants, often with disastrous consequences for the land in the river valley. This is the case of the mechanization of agriculture on fragile dune soils leading to erosion and the silting-in of the floodplains. (This is the case of the industrial projects for cotton in the protected forest of Gorou-Bassunga.) Another natural phenomenon that

could have short-term consequences on the ecology of the wetland is the invasion of the waterways and ponds in the wetland by the water hyacinth (*Eichornia crassipes*), an abundant invasive plant. It causes several types of damage to the bodies of water and there are even animal diseases that seem related to this plant. At the same time, the water hyacinth covers other plants, *Echinochloa* and rice, which are automatically eliminated.

### 23. Conservation measures taken:

This wetland is contiguous to a protected area on the Ramsar list of sites (the Parc national du W) upriver and to the west. Several guard posts in this protected area are located near the proposed Ramsar site, which thus benefits from their protection as a refuge for several species. The closeness of the Parc national du W has led to the elimination of hunting in the area because hunters do not know up to where they can hunt. The fauna is relatively undisturbed and the possibility of creating a hunting area seems to be planned in order to manage the area wisely and eliminate conflicts. As for land use, the buffer area of the national park next to the wetland halts the advance of clearing and grazing to the southwest. Upriver, farther north, the wetland is contiguous with a nature reserve next to the park (Réserve de Dosso), which plays an important role in the maintenance of an ecological balance capable of protecting the wetland downstream. This reserve, with a surface of 306,000 hectares, was created in 1962 to serve as a buffer area in order to reduce encroachment on the Parc national du W for agriculture and grazing. While the park was created in 1954, the park and reserve have never had a formal management plan. However, it is part of the biosphere reserves covering 700,000 hectares in the area of the W. In December 2000, a regional project for creating national parks and reserves in Benin, Burkina Faso and Niger, conceived as a means of integrating ecological concerns and the socio-economic development of the local communities, will be carried out in order to involve the local inhabitants in the management of the site. After creation of the protected areas, a national legal framework for protection was set up based on repression until 1998, which did not always take into account the interests of the local inhabitants even though it allowed the conservation of these ecosystems in a relative primitive state.

As part of implementation of the Programme d'Appui aux initiatives de Gestion Locale de la Rôneraie (PAIGLR) of Gaya, a management plan (PGT) was prepared for 47 areas covering 79 villages, including the area of Albarkaizé, which is tied to the Ramsar site of the Middle Niger. Albarkaizé is among the three areas that have advanced most in the process of preparation and implementation of the PGT of the PAIGLR. Implementation of local management structures has created an organizational dynamics including socio-economic aspects and the environmental, agricultural and grazing sectors. The experience at Albarkaizé in the management of local areas has created interest in the wetlands that form floodplains on the left bank of the Niger River from Kouassi to Dollé, the wetlands of the Middle Niger and which are the object of this request for inclusion on the Ramsar list of wetlands of international importance.

At the time of the implementation of the management plan for the area of Albarkaizé, the local villages openly and together created "a reserve for traditional fishing." An increase

in fishing productivity, the reappearance of several fish species, which were no longer being caught in the area, and the emergence of an abundance of waterfowl are the result of the success of this reserve, which merits recognition and confirmation by the government. Conservation measures have already been taken at the local level, but in order for these measures to lead to long-term success there is a need to reinforce the status of conservation and to extend measures taken for Albarkaizé to all of the plains of the Middle Niger. These measures are based primarily on the close ties that exist between the local communities, the resources that they use and the management of these resources in relation to benefits. Under a future management plan for the whole Ramsar site, the needs of the local communities should be studied and harmonized with conservation and sustainable use of the resources through activities and distribution of revenue from the floodplains of the Niger River. The existence of projects and a development programme, such as the Programme de Développement Local de Gaya (ARDEL) is an opportunity to take advantage of the practical experience provided by PAIGLR in order to enrich the decentralization process under way in Niger and reinforce promising local initiatives.

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

This wetland was never the object of formal conservation measures. However, the local inhabitants are aware of the interest for many visitors created at certain times of the year by the presence of many species of waterfowl and have decided to take local conservation measures before requesting the administrative authorities to take legal steps. Appropriate mechanisms are being studied in order to back up the local inhabitants rapidly. Swiss technical assistance in Niger and the project “Eaux vivantes” of the World Wildlife Fund (WWF International) have expressed an interest in helping this process of mobilization of the local inhabitants and their partners for the conservation and sustainable use of resources in the area.

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

This wetland has not been the object of scientific research and does not have special research equipment. However, PAIGLR plans to establish a mechanism for monitoring the dynamics of the ecosystems and water quality.

#### 26. Current conservation education:

There is no conservation educational programme in this wetland. However, annual surveys have been carried out by the Direction de la Faune, de la Pêche et de la Pisciculture in order to promote awareness among the local inhabitants, which in turn has helped the local inhabitants to become aware of their role and to take steps to ensure local conservation.

#### 27. Current recreation and tourism:

Tourism and recreation are not formally organized at the site, but there is an growing interest in this site's attractions. For the past several years, many visitors have been to



the site during the seasons when there are many birds there. No effort has been made to monitor the visitors.

28. Jurisdiction:

The government of Niger has jurisdiction over this wetland. Functional jurisdiction for purposes of conservation is the responsibility of the Ministère de l'Environnement et de la Lutte contre la Désertification through the Direction de la Faune, de la Pêche et de la Pisciculture.

29. Management authority:

Service d'Arrondissement de l'Environnement de Gaya  
B.P. 95  
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30. References: