Association pour la Sauvegarde des Girafes du Niger

ANNUAL REPORT
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« Conservation of the last herd of West Africa's giraffes in Niger »

Summary

Giraffons observed in the rural commune of N'gonga

Introduction

As part of the sustainable development of the giraffe's area, the Association to Save the Giraffes of Niger (ASGN) set up and organized in 2022 raising-awareness gatherings for the local communities and talked about the importance of the giraffe as a development factor and about the preservation of its habitat.

These actions were possible thanks to the financial support of the Bioparc of Doué-la-Fontaine and its partners (mentioned at the end of this document). This report shares the main activities done in the different areas of intervention of the ASGN in 2022.

I. Conservation of the giraffe and its habitat

1. Awareness raising / Community animation for a better cohabitation with the giraffe

This mission consisted of organising awareness-raising meetings by the field team in the communes of Harikanassou, N'Gonga, Kiota, Kouré, Dantchandou, Falmey et Koygolo in order to inform them of the development role played by the giraffe in the area and to involve them more in its protection and that of its habitat.

The information and awareness sessions dealt with themes such as the fight against abusive deforestation, the cohabitation of man and giraffe in order to reduce the threats of degradation that weigh on the giraffe's habitat, the fragility of giraffe herds and the need to protect this animal.

Through these actions, the aim is to raise the ecological awareness of the populations to get them more involved in the protection of the giraffe and its habitat: this activity is developed during all the interventions of the ASGN in the areas covered.

Awareness raising / Community animation for a better cohabitation with the giraffe

Table 1: Summary of farmer organisations (FO) involved in the preservation of the giraffe and its habitat during the year 2022.

Municipalities	Number of villages	Number of FO involved	Number of people reached	Number of women	Number of men	Number of young people under 30 years of age
Harikanassou	22	67	2 657	1 332	1 325	412
Kiota	30	64	3430	1 593	1 837	521
Kouré	27	66	2 766	1 145	1 621	341
N'gonga	34	63	3 692	1 652	2040	463
Dantchandou	29	53	2 777	1 037	1 740	511
Koygolo	24	43	2 952	1 512	1 440	342
Falmey	27	39	2 189	1 104	1 085	381
Total	**193**	**395**	**20 463**	**9 375**	**11 088**	**2 971**

Farmers' organisations are groups of farmers with whom ASGN works. These groups are defined and recognised at the commune level.

During the year 2022 and as part of the awareness raising of communities on the peaceful cohabitation between humans and giraffes:

- ✓ 7 communes were reached,
- ✓ 193 villages visited,
- ✓ 20,463 people mobilised and sensitised, including 9,375 women and 11,088 men.

NB: Awareness-raising and training activities in community life contribute to intra- and inter-community cohesion, and have enabled the development of certain virtues at local level, such as:

- the spirit of teamwork,
- open-mindedness
- collaboration,
- generosity

This enabled them to know the importance of getting together and the role that the giraffe can play in the development of their respective localities.

All these aware people are normally spokespersons for the association, firstly in their villages and also in neighbouring villages and hamlets that were not reached by the awareness caravan; their role is to defend and advocate for the well-being of the giraffe in all places and in all circumstances.

2. Rehabilitation of degraded lands

As part of the conservation of the giraffe and the protection of its habitat,

- ✓ **9,390** forest half-moons were made on **30 hectares** (ha) of degraded land on the Kampa plateau in the rural commune of Dantchandou;
- ✓ **210** kg of perennial grasses sown;
- ✓ **9,390** forestry plants planted;
- ✓ **2,228** people participated, including 1,980 women and 248 men, i.e., nearly 105 people per day of the mission
- ✓ **30** mission days required to carry out this mission

The objective of this activity is essentially the restoration of the vegetation cover in order to maintain the giraffes on the plateaus for a long time.

This activity was carried out thanks to funding from Bioparc Conservation and its partners.

Site with structures after the first rain

Results after the rainy season

3. Production of forest seedlings

As part of the protection of the giraffe's habitat and following the numerous requests from partner farmers' organisations, ASGN has undertaken an action to produce forest seedlings in the commune of Dantchandou.

The species produced were chosen by the farmers based on technical advice from the communal environmental service, which include:

- *Acacia Sénégal*: **4,000** plants
- *Bauhinia rufescens*: **1,000** plants
- *Adansonia digitata*: **2,000** plants
- Acacia albida: **3,000** plants

Of the 10,000 plants produced, about 7,000 were planted at the land rehabilitation site in the said commune (4,000 Acacia senegal, 2,000 Adansonia and 1,000 Bauhinia), and 3,000 Acacia Albida plants were distributed to the population, who planted them in their gardens, on the edges of their fields or in their fields.

600 fruit plants consisting of mango, guava and lemon trees were purchased and made available to the people of Kampa village who planted them in their gardens, concessions and fields.

Dantchandou Forest Nursery

4. Support for vegetable gardening

Following the poor harvest recorded this year in the area and the inability of women to earn an income, financial support of 4,500,000 CFA francs, or 6,860 € in the form of credits for a period of 4 months was granted to some 450 women in the intervention villages. These "seed" microcredits are intended for the purchase of potato, onion, cabbage, pumpkin, salad seeds, etc., which are cultivated on plots of land lent by landowners in the vicinity of their homes. These fields, which used to lie fallow during the dry season, are now being greened up thanks to the work of women members of groups in the area. The brave women involved in the fight against food insecurity are growing vegetables and the greenery is coming back in the dry season.

Thanks to this activity, the women are able to meet the food needs of their families during the lean season, while the men are on the move. This vegetable production allows them to diversify their sources of food and income.

Each woman received 10,000 CFA francs or 15,24€. 11 hamlets were concerned between 3 villages Harikanassou (5 hamlets), N'Gonga (3 hamlets), Kiota (3 hamlets).

Instead of watering cans, they use the traditional method of watering

In order to optimise water supply, 3 market garden wells were sunk in 2022, 2 in Ouddé Seybou and 1 in Goumdaye in the rural commune of Kiota (Giraffe zone). 132 women in Ouddé Seybou and 92 in Goumdaye will benefit from these wells.

The wells are of different depths, the deepest of which is 6 metres with a water height of 1.80 metres and the other two are 5 metres and 4 metres deep with a volume of 2 metres of water each.

These modern wells are the pride of the women beneficiaries who can easily do their watering chores and save time for other things, unlike in the past with the traditional wells where they spent much more time clearing the sand first before having access to water for watering.

The new well of Ouddé Seybou in the rural commune of N'gonga

An in-depth view of this well

A field of pumpkins...

II. Monitoring and support for farmers' organisations

Balance sheet for Income Generating Activities (IGA)2022

Municipalities	Number of villages	Number of beneficiaries	Amount distributed CFA Francs	Amount distributed in Euros
Harikanassou	09	320	6 425 000	9 794, 84
N'Gonga	10	420	5 425 000	8 270,35
Kiota	18	540	9 450 000	14 406,43
Total	**37**	**1 280**	**21 300 000**	**32 471,64**

Due to ongoing security problems in the region, the ASGN team can no longer travel to three communes, Kouré, Dantchandou and Tondikandia, to continue distribution and collection of micro-credits.

Thanks to the available and additional funds received in 2022, two new beneficiary groups will be added to this programme in 2023 in the communes of Falmey and Koygolo.

During this year 2022, the amounts of credit made available to women's groups in 37 villages in 3 communes have enabled 1,280 women to carry out fattening and small trade activities.

For the 333 women engaged in fattening, the micro-credit was €76.22.
For the 947 women engaged in small-scale trade, the micro-credit granted was €53.35

In order to assess the micro-credit granted for several years to women identified as poor, a questionnaire in the form of a survey was drawn up and filled in by a sample of women (10 women per beneficiary village). This survey concerned the communes of Harikanassou, Ngonga and Kiota for the 2022 campaign; at this level, it is clear that the credits granted by the association contribute significantly to the improvement of the population's living conditions. Thus, the majority of the people surveyed stated that thanks to the support in the form of micro-credits provided by the association, they are able to add value to improve their daily lives.

100% of the women surveyed stated that the granting of micro-credits enables them to carry out income-generating activities. It is noticeable that a high number of women practice fattening.

IGA Credit delivery session

The income from these activities allows the beneficiaries to cover some of the household expenses such as: the cost of condiments, children's clothing, school fees, health care costs in case of illness, restocking of livestock (small ruminants), contribution to food.

Example of a small business

Fattening

III. Ecological monitoring

Niger, like many Sahelian countries, has undergone several repetitive droughts combined with anthropic pressure that disrupts the great ecological balances and installs the country in an almost inexorable process of desertification. These modifications of the natural formations are mainly due to the aridity of the climate and have seriously affected the survival of the wildlife. The vegetation zones seem to follow naturally this shift in average rainfall, amply modifying the habitats and the functioning of the plant species for the animals. Plant communities often determine the physical structure of the environment and play an important role in the distribution and interactions of wild animal species. Therefore, human disturbances change landscape structures and habitats for wildlife and the giraffe in particular. The scarcity of food favours the migration of the giraffe towards other ecologically more favourable areas, towards areas of insecurity, some of which are out of the way, such as the communes of Fabidji, Koygolo and Falmey.

Thus, the disturbance of the giraffe's habitat has contributed to the extension of the giraffe's range in Niger. The distribution area of the giraffe, which was 840 km² in 1995, has increased to over 3,616.243 km² today. The giraffe (*Giraffa camelopardalis peralta*) of Niger is the last one in West Africa. It frequents several habitats depending on the season (the forest plateaus, the Dallol Bosso and the intermediate zone between the two) and is on the list of fully protected taxa in Niger (Law n°98-07 of 29 April 1998). Indeed, the knowledge of the dynamics of spatio-temporal colonisation and the diet of the giraffe is of great interest for the definition of its conservation and sustainable management.

It is to respond to this major concern for the conservation and sustainable management of the giraffe, that the monitoring of giraffe movements and knowledge of the diet was initiated by the Association for the Safeguard of the Giraffe of Niger (ASGN), with the financial and technical support of its main partner, the Bioparc of Doué La Fontaine.

The aim is also to create a dynamic between ecological monitoring and local development. More specifically :

1. **Collect data on natality, mortality, herd movements or distribution and feeding behaviour**
2. **To serve as a tool to raise awareness for giraffe tranquillity**
3. **Identify locations for giraffe observation**

The ASGN, with the financial and technical support of its main partner, the Bioparc de Doué La Fontaine, also helped its Ecological Monitoring Officer to complete his PhD thesis on "Ecoethology of the West African Giraffe (Giraffa camelopardalis peralta, Linnaeus, 1758)" in collaboration with the Faculty of Agronomy and Environmental Sciences of the Dan Dicko Dankoulodo University of Maradi.

This study shows that "*Controlling the behaviour of the giraffe in the wild is an imperative for better conservation of the species. The present study conducted in the giraffe's area of occurrence, located between 13°00' and 14°30' latitude, North and 2°30' and 3°30' longitude, East, aims to deepen knowledge on the ecology and behaviour of the giraffe. To this end, the evolution of the giraffe's habitat was studied through the diachronic analysis of satellite images from 1990, 2006 and 2020. The dynamics of the giraffe population was studied by considering photo-identification inventory data. In addition, the social, reproductive and feeding behaviour of the giraffe was studied by direct observations combined with microscopic analyses of faeces for diet. Finally, the relationship between man and giraffe was studied through surveys and field observations. A significant modification of the giraffe's habitat with a predominance of crop fields which take up 32.89% of its grazing area. This anthropic occupation of crop fields associated with recurrent droughts is the main cause of the degradation of the giraffe's habitat. This has led to a further distribution of the giraffe population towards the former habitats and the southern part of the country as shown by climate models. Indeed, the annual growth rate of the giraffe population is estimated to average 7.4±4.98% with an average birth rate of 9.42 ± 4.30% per year and an average mortality rate of 1.98 ± 1.16% per year. This giraffe population has a good proportion of females (32.93%). The observations made it possible to estimate the average group size at 6.41 ± 4.42 individuals. The study also showed that the food spectrum of the giraffe consists of 43 plant species with a preference for Fabaceae (41.84%) and Combretaceae (13.95%). Socio-economic surveys indicate that the main threats in the central, Falmey, Fandou and Simiri zones are insufficient fodder and logging. In Dingazi and Fabidji, however, the main threat is the advancing agricultural front. The study also showed that giraffes cause damage mainly to cowpea (46.15%) and mango (23.02%), and the intensity of damage has increased considerably over the last ten years. Therefore, with the extension of the giraffe distribution area, it would be important to improve food availability in these areas and prevent possible human-giraffe conflicts*."

3.1. The giraffe habitat

The study of land use dynamics in the years 1990, 2006 and 2020 showed that anthropogenic activities and climatic conditions are the main factors of degradation of the giraffe's range in Niger.

The results from the land use units obtained across the 3 different dates showed higher proportions of rainfed crops. The diachronic analysis (analysis of the evolution of land use) in the giraffe habitat made it possible to specify the current evolutionary trends of the land use units and to know the degradation factors of the giraffe habitat.

The current situation of the giraffe area should alert those involved in the protection of the giraffe and its habitat to the role of human activities and climatic factors in the degradation of the giraffe habitat and the risk of disappearance of species consumed by the giraffe. This situation of degradation of the giraffe's range would lead to food unavailability for the giraffe and to its migration.

3.2. The diet

The overall food spectrum of the giraffe is composed of plant species divided into 15 families (Table 1). The families Fabaceae (41.84%) and Combretaceae (13.95%) had the most species consumed by the giraffe.

On the other hand, Annonaceae and Zygophyllaceae were, among others, the least represented 43 plant species constitute the food spectrum of the Niger giraffe, of which 39 plant species were found by the direct observation method, 25 by browsing index and 15 by microscopic analysis of faeces, 14 plant species are common to all 3 methods (Table 2)

In fact, in the outlying areas, 30 plant species were noted in the giraffe's food spectrum, divided into 11 families. In contrast, in the central zone, 39 plant species were consumed by the giraffe. These plant species are divided into 13 families.

26 plant species consumed are common to both habitats. However, 4 plant species (*Celtis integrifolia, Commiphora africana, Maerua crassifolia and Mitragyna inermis*) are only consumed in the outlying areas, while 13 (*Acacia laeta, Annona senegalensis, Bombax costatum, Cucumis metuliferus, Detarium microcarpum, Entada africana, Gardenia ternifolia, Lannea microcarpa, Leptadenia hastata, Neocarya macrophylla, Parkia biglobosa, Prosopis africana and Tamarindus indica*) in the central zone.

Table 1: Percentage of plant species families consumed during monitoring

Families	**Central Zone**		**Outlying areas**		**Global**	
	Number of species	**Percentage (%)**	**Number of species**	**Percentage (%)**	**Number of species**	**Percentage (%)**
Anacardiaceae	4	10,26	3	10,00	4	9,30
Annonaceae	1	2,56	0	0,00	1	2,33
Asclepiadaceae	1	2,56	0	0,00	1	2,33
Burseraceae	0	0,00	1	3,33	1	2,33
Capparaceae	2	5,13	3	10,00	3	6,98
Chrysobalanaceae	1	2,56	0	0,00	1	2,33
Combretaceae	6	15,38	6	20,00	6	13,95
Cucurbitaceae	2	5,13	1	3,33	2	4,65
Euphorbiaceae	1	2,56	1	3,33	1	2,33
Fabaceae	17	43,59	11	36,67	18	41,86

Malvaceae	1	2,56	0	0,00	1	2,33
Rhamnaceae	1	2,56	1	3,33	1	2,33
Rubiaceae	1	2,56	1	3,33	1	2,33
Ulmaceae	0	0,00	1	3,33	1	2,33
Zygophyllaceae	1	2,56	1	3,33	1	2,33
Total	**39**	**100**	**30**	**100**	**43**	**100**

Table 2: List of plant species consumed during monitoring

Species consumed	**Families**	**Dry season**	**Rainy season**
Acacia ataxacantha DC.	Fabaceae		*x*
Acacia laeta R. Br. Ex Benth	Fabaceae		*x*
Acacia macrostachya Reichenb. Ex Benth	Fabaceae		*x*
Acacia nilotica (L.) Willd. ex Del.	Fabaceae	*x*	*x*
Acacia senegal (L.) Willd.	Fabaceae	*x*	*x*
Acacia seyal Del.	Fabaceae	*x*	
Acacia tortilis subsp. raddiana	Fabaceae	*x*	*x*
Annona senegalensis Pers.	Annonaceae	*x*	
Balanites aegyptiaca (L.) Del.	Zygopyllaceae	*x*	*x*
Bauhinia rufescens Lam.	Fabaceae	*x*	*x*
Bombax costatum Pellegr.	Malvaceae		*x*
Boscia angustifolia A. Rich.	Capparaceae	*x*	*x*
Boscia senegalensis (Pers.) Lam. ex Poir.	Capparaceae	*x*	*x*
Cassia sieberiana DC.	Fabaceae		*x*
Celtis integrifolia Lam.	Cannabaceae	*x*	
Combretum aculeatum Vent.	Combretaceae	*x*	
Combretum glutinosum Perr. ex DC.	Combretaceae	*x*	*x*
Combretum micranthum G. Don	Combretaceae		*x*
Combretum nigricans Lepr. ex Guill. et Perr.	Combretaceae		*x*
Commiphora africana (A. Rich.) Engl.	Burseraceae		*x*
Croton gratissimus Burch.	Euphorbiaceae		*x*
Cucumis metuliferus E. Mey. Ex Naud	Cucurbitaceae		*x*
Detarium microcarpum Guill. & Perr.	Fabaceae	*x*	
Entada africana Guill. & Perr.	Fabaceae	*x*	
Faidherbia albida (Del.) Chev.	Fabaceae	*x*	*x*
Gardenia ternifolia Schumach. & Thonn.	Rubiaceae	*x*	
Guiera senegalensis J.F. Gmel.	Combretaceae	*x*	*x*
Lannea acida A. Rich.	Anacardiaceae		*x*
Lannea microcarpa Engl. & K. krause	Anacardiaceae	*x*	
Leptadenia hastata (Pers.) Decne	Asclepiadaceae	*x*	
Maerua crassifolia Forsk.	Capparaceae	*x*	*x*
Mangifera indica L.	Anacardiaceae	*x*	
Mitragyna inermis (Willd.) K.Schum.	Rubiaceae	*x*	
Momordica balsamina L.	Cucurbitaceae	*x*	*x*
Neocarya macrophylla (Sabine) Prance	Chrysobalanaceae	*x*	
Parkia biglosa (Jacq.) R.Br. ex Benth.	Fabaceae	*x*	

Piliostigma reticulatum (DC.) Hochst.	Fabaceae	*x*	*x*
Prosopis africana (Guill. & Perr.) Taub.	Fabaceae	*x*	
Sclerocarya birrea (A. Rich.) Hochst.	Anacardiaceae	*x*	*x*
Tamarindus indica L.	Fabaceae	*x*	
Terminalia avicennioides Guill. & Perr.	Combretaceae	*x*	*x*
Vigna unguiculata (L.) Walp.	Fabaceae		*x*
Ziziphus mauritiana Lam.	Rhamnaceae	*x*	*x*

Seasonal changes in diet

Seasonal variation in the diet of the giraffe was noted in both the central and outlying areas. Overall, 32 plant species were consumed in the dry season, compared to 28 in the rainy season. 15 plants species were consumed throughout the year (Table 2).

3.3. Population dynamics

3.3.1. Birth rate

The average birth rate is estimated at 9.76 + 2.40%.

3.3.2. Mortality rate

In 2022, 3 cases of death are recorded. This represents 2.04%. The deaths were natural. On the pathological causes, no information has been collected either in the main repair area or in the outlying areas of the giraffe and no known disease in the domestic herd has developed in the giraffe to date. Predation does not exist, as no predators are recorded in the giraffe's range in Niger.

3.3.3. Reproduction period

Pregnant females are observed at all seasons of the year (Table 3). However, they were most frequently observed during the rainy season (83%). In contrast, in the hot dry season, they represent only 6% of the adult females observed.

Table 3: Number of adult females and mated females

Seasons	**Months**	**Number of mated females observed**	**Number of adult females observed**
Dry & warm	March	3	14
	April	5	8
	May	4	16
Sub Total 1		**15**	**41**
Rainy season	June	4	14
	July	4	11
	August	5	23
	September	10	34
	October	4	24
Sub Total 2		**27**	**106**
Dry & Cold	November	9	14
	December	4	32
	January	6	27
	February	4	19
Sub Total 3		**22**	**92**

3.4 Human-Giraffe Relationship

The damage caused by giraffes on cultivated species is a source of conflict.
For sustainable giraffe management and good human-giraffe cohabitation, the participation of local communities is essential.

Local people are in constant contact with giraffe herds. This requires a good perception of the local communities towards the giraffe in order to avoid any threats to the giraffe's survival.

Habitat saturation and/or insufficient food resources have led to the recolonisation of former giraffe habitats. It is necessary to monitor the distribution of the giraffe on a permanent basis, as the survival of the giraffe is not guaranteed in certain ecological zones (insecure areas or border crossings).

3 cases of damage caused by giraffes were recorded in the commune of Dingazi. 4 cases of damage were recorded in the commune of Harikanassou and Kiota. The damage was caused on niebe plants and around the gardens on mango trees.

More damage was recorded in the outlying communes. This damage is recorded at the end of the rainy season when millet is harvested, as well as niebe and groundnuts. It is also recorded at the end of the dry season when mango trees are fruiting.

In order to reduce these conflicts of use, the network of local informants should be reactivated and awareness-raising sessions should be multiplied to improve human-giraffe cohabitation.

Photos: Some giraffons observed during the monitoring.

Thanks to the Bioparc Zoo of Doué la Fontaine, Bioparc Conservation and its partners who supported the ASGN in 2022!!!