



Zakouma National Park

Five-year Business Plan

2018 - 2022

v. April 2018



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Exchange Rate

Euro 1.00 = 656.00 FCFA

USD 1.00 = 552.00 FCFA

List of abbreviations

Table 1: Abbreviations used in the document.

English		French	
APN	African Parks Network	AP	Aire Protégée
BoD	Board of Directors of the Foundation	AdP	Accord de Partenariat entre le Gouvernement du Tchad et African Parks Network, de juin 2010
GIS	Geographic Information System	CSO	Comité de Suivi Opérationnel
GZE	Greater Zakouma Ecosystem	CURESS	Projet de Conservation et Utilisation Rationnelle des Écosystèmes Soudano-Sahéliens financés par la Commission Européenne
HQ	ZNP headquarters	DPNRFC	Direction des Parcs Nationaux, des Réserves de Fauna et de la Chasse
LE	Law Enforcement	ECOFAC	Programme de Conservation et Utilisation Rationnelle des Écosystèmes Forestiers en Afrique Centrale (phase 4)
MIKE	Monitoring Illegal Killing Elephants	ECOPAS	Écosystème Protégé d'Afrique Sahélienne (Parc du W)
PA	Partnership Agreement between the Government of Chad and APN, dated June 2010.	EIZ	Equipe d'Intervention de Zakouma
SC	Steering Committee (Comité de Gestion) as per de Ministerial Decree of April 2012	FED	Fonds Européen de Développement
WCS	Wildlife Conservation Society	FFZ	Fond Fiduciaire Zakouma
RRT	Rapid Response Team	GNNT	Garde Nationale et Nomade du Tchad
ZNP	Zakouma National Park	LAB	Lutte Anti-Braconnage
ZNPP	Zakouma National Park and its Periphery (initial partnership agreement)	MERH	Ministère de l'Environnement et des Ressources Halieutiques, de la Qualité de Vie et des Parcs Nationaux
		PIDR	Plan d'Intervention du Développement Rural
		PdG	Plan de Gestion du Parc National de Zakouma et son périphérie, décembre 2008
		PNZ	Parc National de Zakouma
		PNZP	Parc National de Zakouma et son périphérie (premier Accord de Partenariat)
		PV	Procès Verbal
		PASILD	Programme d'Accompagnement Structurant d'Initiatives Locales de Développement
		SIG	Système d'Information Géographique (GIS)

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1. EXECUTIVE SUMMARY

Zakouma National Park, situated in the south-east of Chad, was created in 1963 and covers an area of 3,054 km². The fauna of the park includes 64 species of mammals and the park is especially renowned for its free roaming herds of elephant, now finally increasing following ten years of decline, with the poaching frenzy of the past peaking in 2008. The remaining key species are stable or on the increase and in general the ecosystem is healthy. The park has been nominated by the Chadian Government to become a UNESCO World Heritage Site. The European Union (EU) has financially supported Zakouma since 1983.

Zakouma experiences strong seasonal changes which results in certain animal species migrating outwards during the wet season when the park becomes extremely wet. In the past the elephants also followed the same migration pattern, roaming in an area of up to 20,000 km² (see Figure 5). This has however not happened since 2013 – the elephants have remained inside the park boundary with some minor outward movements because of the lower numbers but almost certainly also as a result of the improved security. Regardless of this it is important to get the Land Use Plan approved by the Government of Chad to keep the migration corridors free for future movement once the elephant numbers increase to large enough numbers.

The Government of Chad has acknowledged that an efficient conservation of Zakouma is not possible without an institutional framework that allows the Park to be managed with a long-term management and financing approach. In 2010 African Parks (AP) signed a Partnership Agreement with the Government. This agreement has been renewed in October 2017 for an additional 10 years. The Partnership Agreement specifically recognizes that an efficient conservation of the Park's fauna requires action beyond the Park's boundaries into the Periphery where many of the large mammals spend most of the wet season. The limits of the Periphery are now largely known following a total of 6 years of data from satellite collared elephants and includes the Siniaka Minia Faunal Reserve. Park Management is always aware that extensive poaching can recommence at any time in the near future, and all efforts will be made to counter this.

Management of the Park and its Periphery is the responsibility of the “Zakouma Foundation”, controlled by a Board of Directors made up of 2 representatives from the Government, 3 representatives from African Parks (including a vice-chair) and chaired by the General Secretary of the Ministry of Environment and Fisheries. The Foundation has the full authority to manage the Park, while the day-to-day management, as stipulated in the 5-year business plan, is delegated to the Park's Management Unit. The Foundation's mandate for the Park includes the following long-term vision:

“To preserve Zakouma National Park and its Periphery as part of the greater Sudano-Sahelian ecosystem through efficient management and sound conservation practices and by obtaining local community support for wildlife conservation and suitable land-use planning in the Park and its periphery and by developing the park's natural resources to the extent it is consistent with the Park's conservation mandate”.

The Management Unit took over the management of the Park late 2010 and a first evaluation of the new management's performance has shown (i) a significant reduction in poaching; (ii) a professionalization of the park's staff, leading to a more efficient performance; (iii) improved use of the Park's infrastructure and equipment; and (iv), much increased transparency of the Park's finances.

In the past the single largest threat to the elephants of Zakouma was rampant poaching with up to 60 animals being killed in one massacre, especially during the wet season when the park was deserted. This has now largely been brought under control with only five poaching incidents having taken place inside the park boundary in the past six years. The resultant change in the elephant's behavior – no outward migration and sudden high number of calves born – seems to indicate that the herd is now relaxed and we are confident that if the poaching can remain under control the population will continue to increase at a higher annual rate than is normal. There are however other pressing issues which need to be addressed in order to ensure the long-term protection of GEFZ; the relocation of Bone village by the Government of Chad, respect of the park's actual boundaries, the full implementation of Land Use Plan and improvement of the prosecution of poachers once they have been caught and handed over to the Chadian authorities, to name a few.

The proposed strategies for the coming 5 years to achieve the Vision are described in detail in Chapter 6

and can be summarized as follows:

1.1 Park operations & Infrastructure

Zakouma already has well-developed infrastructure and the emphasis will be on maintaining this infrastructure well, upgrading some infrastructure that is becoming dilapidated, construct some new buildings, while also developing some essential infrastructure in the Siniaka Minia Faunal Reserve. Even though the presence of Park staff in Zakouma will be limited and staff families will be based in villages on the Park's boundaries thereby reducing the cost and the population pressure on the Park it is still necessary to upgrade basic amenities at the staff houses in Zakouma. Roads are a key component and with the recent tourism development plan, more focus will be given on game drive roads to complement the management roads.

1.2 Law enforcement

Management employs a well-trained, disciplined and fully equipped mobile field force that operates on a "predictable/unpredictable" deployment strategy to maximize its efficiency and operational secrecy, while the 24/7 communications and control base allows for the implementation of a truly integrated law-enforcement strategy.

The law enforcement effort will continue to be supported by increased collaboration and information exchange with other regional law enforcement and judicial authorities such as the GNNT, the Am Timan Prosecutor, the Military, etc. The intelligence gathering network will also continue to be improved and so will the ranger force by selecting and training additional rangers to protect the soon to be reintroduced black rhino and also the Siniaka Minia Faunal Reserve.

1.3 Conservation monitoring and habitat management

All wildlife, habitat and human activity will be monitored on an on-going basis to ensure the accumulation of knowledge. Satellite tracking is being used to ensure the security of the elephants and the next of the biennial aerial game count will be undertaken in 2018.

Seeing that Zakouma is reaching maturity as a protected area the time is right to start prioritizing research that can inform management and 3 research projects have been identified; the status of the Kordofan giraffe, elephant movements based on existing and new data to predict when the elephants will start leaving the park again and, the status of the lion population.

In order to maintain the diversity within the ecosystem, black rhino, currently extinct in Chad, will be reintroduced in 2018 following a MoU and Custodianship Agreement signed between the Governments of Chad and South Africa.

1.4 Building a constituency for conservation

Zakouma National Park must achieve a wide constituency for its conservation effort amongst the local communities around the Park. Apart from liaising regularly with all parties, ZNP actually facilitates local communities to visit the park using designated facilities that cater for their demands as well as environmental education that is being undertaken in schools in the periphery.

Partnerships have been developed with local communities and AP works in close collaboration with other NGO's working in the periphery to ensure that the wildlife both within and without the park are taken into consideration. Zakouma has also developed a Land Use Plan to help secure the critical wildlife migration corridors.

1.5 Tourism and other revenue generation

Tourism in Zakouma is the most developed in the country with facilities available for game viewing on a level of many areas in the rest of Africa. A tourism development plan has been developed for Zakouma and incorporates 3 tiers of tourism products. Camp Nomade is the Zakouma flagship and although the camp has a short season, it has the potential of bringing in high revenue during this period. The camp is sold through

the private guide sector to international clients. Tinga Camp, a 3-star operation, caters for both the Chadian expatriate market, international guests and more affluent Chadian nationals while Camp Salamat caters for the local Chadian market at a nominal fee.

1.6 Finance, HR and administration

The Park will be managed by a well-motivated and competent management team, with good systems and internal controls in place. With the implementation of the InFlow stock management system and Serenic accounting software best practice accounting, operational and contracting procedures is being utilized as per the African Park standards and satisfying major financial donor requirements.

The estimated total cost to fulfil the objectives and strategies outlined in this Business Plan for the 2018-2022 period is \$ 17.14 million of which \$15,25 million (89%) is for Operational expenses and \$ 1.88 Million (11%) for investment expenses (CAPEX).

The largest component in terms of expenditure is Law Enforcement with 36% of the total, reflecting the urgency of this strategy, the size of the park and the complexity of the task. Community Development and Conservation would appear small with 16% and 3% each of total expenditure respectively.

Table 2: Simple Profit & Loss Table.

Simple P&L	2018	2019	2020	2021	2022	Total
Income	\$ 3,287.107	\$ 2,636.113	\$ 2,506.419	\$ 2,553.039	\$ 2,388.054	\$ 13,370.731
Donor income	\$ 2,802.271	\$ 2,295.966	\$ 2,206.069	\$ 2,266.722	\$ 2,332.314	\$ 11,903.342
Net park revenue	\$ 484.836	\$ 340.147	\$ 300.349	\$ 286.316	\$ 55.740	\$ 1,467.389
Other revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Opex	\$ 3,111.798	\$ 3,030.797	\$ 2,952.272	\$ 3,034.696	\$ 3,123.059	\$ 15,252.622
Salaries and other personnel costs	\$ 1,409.507	\$ 1,347.943	\$ 1,395.271	\$ 1,437.052	\$ 1,477.485	\$ 7,067.258
Park mgmt	\$ 475.440	\$ 489.703	\$ 504.394	\$ 519.526	\$ 535.112	\$ 2,524.175
Law enforcemnet	\$ 366.323	\$ 383.492	\$ 394.997	\$ 406.847	\$ 419.052	\$ 1,970.711
Admin	\$ 81.378	\$ 83.820	\$ 86.334	\$ 88.924	\$ 91.592	\$ 432.048
Technical	\$ 337.596	\$ 370.438	\$ 388.520	\$ 400.175	\$ 412.181	\$ 1,908.910
Other	\$ 148.770	\$ 20.489	\$ 21.026	\$ 21.579	\$ 19.548	\$ 231.413
Motorized vehicle	\$ 408.354	\$ 420.605	\$ 433.223	\$ 446.219	\$ 459.606	\$ 2,168.007
Repair and maintenance	\$ 111.350	\$ 91.644	\$ 35.087	\$ 30.074	\$ 30.976	\$ 299.131
Admin	\$ 353.110	\$ 347.223	\$ 357.640	\$ 368.369	\$ 379.420	\$ 1,805.761
Other opex	\$ 829.478	\$ 823.382	\$ 731.051	\$ 752.982	\$ 775.572	\$ 3,912.465
Capex	\$ 574.630	\$ 646.649	\$ 304.478	\$ 244.771	\$ 112.551	\$ 1,883.079
Building & roadwork	\$ 265.387	\$ 515.324	\$ 47.741	\$ -	\$ -	\$ 828.452
Aircraft	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Transport equipment	\$ 130.000	\$ 122.055	\$ 240.294	\$ 234.936	\$ 101.296	\$ 828.581
Office equipment	\$ 26.000	\$ -	\$ 6.896	\$ -	\$ 1.126	\$ 34.021
Other capex	\$ 153.243	\$ 9.270	\$ 9.548	\$ 9.835	\$ 10.130	\$ 192.025
Total expense	\$ 3,686.428	\$ 3,677.445	\$ 3,256.750	\$ 3,279.467	\$ 3,235.610	\$ 17,135.701
Net deficit	\$ (399.321)	\$ (1,041.333)	\$ (750.332)	\$ (726.429)	\$ (847.556)	\$ (3,764.971)

Annual operational expenses are forecasted to remain rather steady over the business plan period at an average of \$ 3,05 million; an eventual decrease can be expected reflecting the aspiration to gradually reduce the role of expatriates over time. The average annual operational expenses amount to around \$ 657/km² per year.

Investments (CAPEX) amount to only \$ 1.8 million over the five-year period, remaining steady throughout, with the exception of a new tractor reflecting (i) the relatively good level of infrastructure presently available in the park and (ii) the improved management and maintenance of this infrastructure. The latter is an explicit objective of Park Management so as to render the financial feasibility of the Park as realistic as possible in the future. The ultimate objective is to be able to run the Park with replacement investment in infrastructure of not more than an average of \$ 376,000/year.

Table 3: Park costs paid in local currency – proxy for impact on local economy.

	2018	2019	2020	2021	2022
Opex	\$ 1,358,444	\$ 1,426,465	\$ 1,476,228	\$ 1,520,514	\$ 1,566,130
Salaries and other personnel costs	\$ 845,981	\$ 898,629	\$ 932,556	\$ 960,532	\$ 989,348
Motorized vehicle	\$ 189,540	\$ 195,226	\$ 201,083	\$ 207,115	\$ 213,329
Admin	\$ 137,660	\$ 141,789	\$ 146,043	\$ 150,424	\$ 154,937
Other opex	\$ 185,263	\$ 190,821	\$ 196,546	\$ 202,442	\$ 208,515
Capex	\$ -	\$ -	\$ -	\$ -	\$ -
Building & roadwork	\$ -	\$ -	\$ -	\$ -	\$ -
Aircraft	\$ -	\$ -	\$ -	\$ -	\$ -
Transport equipment	\$ -	\$ -	\$ -	\$ -	\$ -
Other capex	\$ -	\$ -	\$ -	\$ -	\$ -
% of total costs in local currency	32%	34%	37%	37%	37%

The operations of ZNP have an important economic impact on the surrounding economy. Park management endeavours to at all times maximize local purchases (see table 3). The economic impact ranges from employing staff, purchasing food and supplies, fuel, horses, etc. With the projected increase in tourism, local expenditure is expected to grow significantly. Currently about \$1.47 million is injected into the local economy annually (see below).

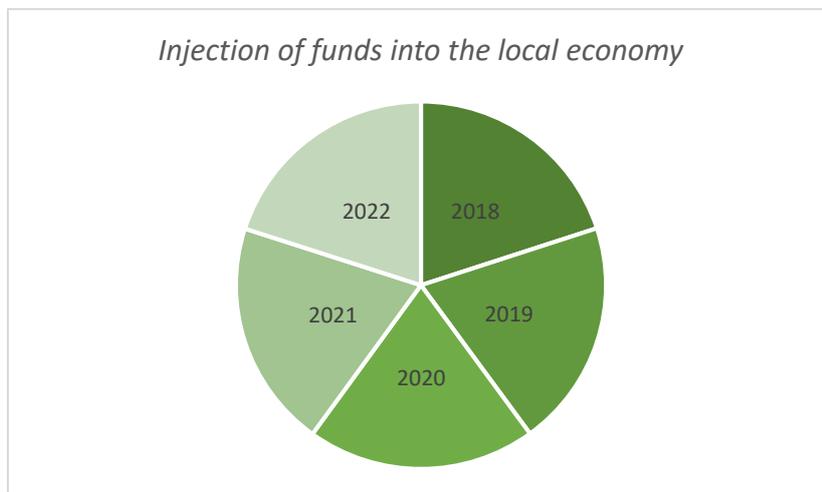


Figure 1: Injection of funds into the local economy.

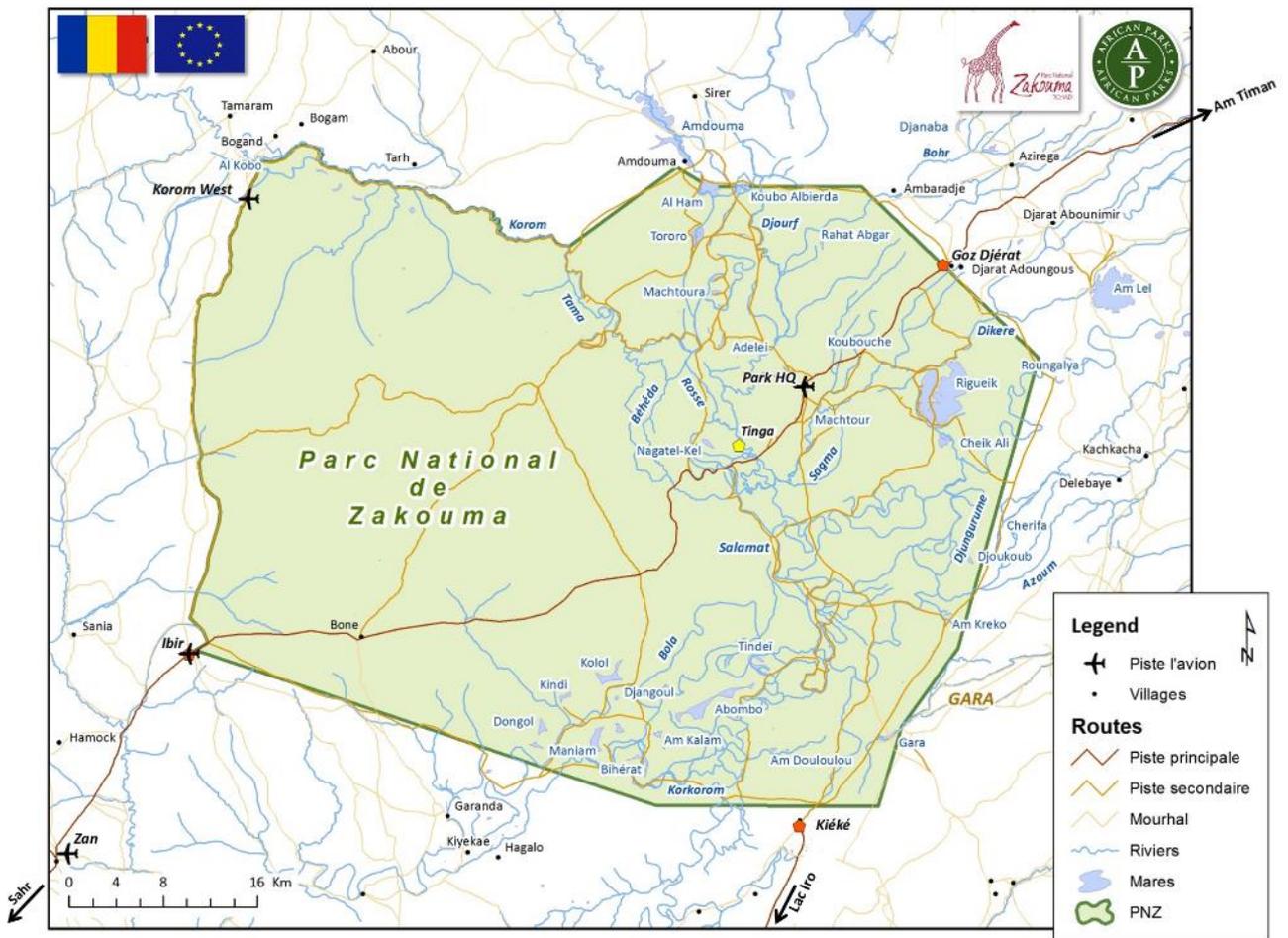


Figure 2: Map of Zakouma National Park.

2. BACKGROUND INFORMATION

2.1 Purpose of this business plan

The purpose of this business plan is to set out a 5-year plan for Zakouma National Park, supported by extracts from detailed 5-year budget spreadsheet that has also been prepared.

Overall, the 5-year business plan (FYP) serves as a working document to communicate the plans of management to the local board, donors, government partners and other interested parties.

The plan also seeks to build confidence at all levels within the Chadian government structure and amongst the principal financial donors that the Zakouma Foundation and its management team have the ability and expertise to manage Zakouma efficiently, to protect its large mammals and to conserve its habitat appropriately.

The FYP is updated on an annual basis to reflect progress and changing conditions and is the basis for the Park's annual budgets and various donor funding agreements and updates.

2.2 The Zakouma Foundation

On 19 June 2010, a Partnership Agreement (PA) was signed between the Government of the Republic of Chad and African Parks Networks (APN) that delegates the responsibilities of the management, conservation and development of the Zakouma National Park and its periphery (ZNPP) to a Foundation to be established under Chadian law.

On the 3rd of April 2012, the then *Ministry of the Environment and Natural Resources* and African Parks nominated a *Steering Committee* for ZNP as the decision-making body for the strategy, monitoring and evaluation of GEFZ activities. The decree nominated 13 members to the Committee chaired by the Director General of the Department of the Environment of the Ministry. Other members represent the various stakeholders of GEFZ. The Committee (*Comité Directeur*) has met once or twice per year since its inception.

The Zakouma Foundation has been created with it receiving legal recognition (authorization to function was issued on 8/10/2014, Folio N°4536 of 2014) and the first official Board Meeting was held in June 2016 and was attended by all the members of the Board of Directors.

On 8 October 2017 a new Partnership Agreement has been entered into between African Parks and the *Ministry of the Environment and Fisheries*. Key considerations of the new Partnership Agreement are:

- The Partnership Agreement signed on 19 June 2010 between the Government of the Republic of Chad and the African Parks Network (APN) for the management and financing of the Zakouma NP;
- Conclusions and recommendations of the final evaluation of the PADLII Project-Support to the Zakouma National Park (2011-2016), established in February 2017, and the recommendations established in February 2017 by the mid-term evaluation of the partnership, the outstanding

achievements of APN in the conservation of PNZ, but also the weaknesses and incomplete results of this partnership;

- The achievements since 2011 in terms of rehabilitation and conservation of the fauna and habitats of the Zakouma NP, local community support and environmental education, as well as in terms of security, anti-poaching, and tourism development;
- The recognition of the interdependence of conservation areas within a large territorial group of Protected Areas, called the "Greater Zakouma Functional Ecosystem" (GEFZ) and comprising the Zakouma NP and the Bahr Salamat and Siniaka Minia Faunal Reserves;
- The need to reduce poaching and human-wildlife conflicts by improving enforcement, monitoring and anti-poaching, and the need to secure wildlife migration corridors around the Zakouma NP, highlighted in recent years by PNZ conservation projects;
- The need to continue and strengthen the operational management of the Zakouma NP and to extend it to the adjacent conservation areas (Siniaka Minia FR, Barh Salamat FR, Great Wildlife Migration Corridors) as funded by the EU 11th EDF finance called the "Support to the Concerted Management of Protected Areas and Fragile Ecosystems of Chad" (APEF);
- Establishing the Siniaka Minia FR as a 2nd National Park in the Greater Zakouma Functional Ecosystem;
- The work of the Committee to revise the Partnership Agreement between the Government of the Republic of Chad and African Parks Network (APN) for the management and financing of the Zakouma NP set up by Order No. 002 / PR / PM / MEP / SG / 2017 of 15 March 2017;
- And finally, the prerogatives of the Trusteeship as a public institution in charge of fauna and protected areas remain full and entire.

2.3 Zakouma National Park size, history, location and maps

2.3.1 History

Zakouma was first declared a hunting reserve in 1958 through the efforts of Michael Anna who recognized the threats to the area's ecosystem. Within a few years after this intervention, the density of game reached numbers never before seen in Chad and as a consequence the number of poachers on the reserve's periphery followed a similar trend. Zakouma was finally declared a national park in 1963 by Presidential Decree (N° 86T/EFC of 7 May 1963), offering it the highest form of protection available under the laws of Chad.

Chad has made an application for ZNP to be recognized as a World Heritage Site under the UNESCO Convention. A first UNESCO mission visited the Park in 2009 and again in 2011 and considerable progress has been made towards this end. The boundary dispute near Kiéké has possibly been preventing the finalization of this, as well as the villages of Bone Daoud and Bone Fakhara. The south-eastern section of the park forms part of the *Plaines d'Inondation des Bahr Aouk et Salamat* RAMSAR site (one of the largest RAMSAR sites, the Bahr Aouk and Salamat floodplains site is 4,922,000 ha in size), and important catchment area for the Chari River which flows into Lake Chad.

2013 marked the 50th anniversary of the park and the anniversary celebration was held on 21 February 2014 with the President of the Republic of Chad attending. At the function 1.1 tons of ivory (the entire Chadian stockpile) was burnt and several people were presented with civilian medals to acknowledge their contribution to conservation in Chad, including three AP staff members.

2.3.2 Location

Located in south-eastern Chad, Zakouma National Park is probably the last remaining intact Sudano-Sahelian ecosystem in Africa and covers an area of 3,054 km². Due to its close proximity to the centre of the Chadian Basin, the terrain of the park is almost exclusively flat with the exception of the beautiful granite *inselbergs* found in the south-west near Ibir.

Bône hill is the highest point of the park. Zakouma forms an integral part of the conservation of fauna and flora in the region and is the only noteworthy game viewing destination in the country, and in Central Africa as a whole.

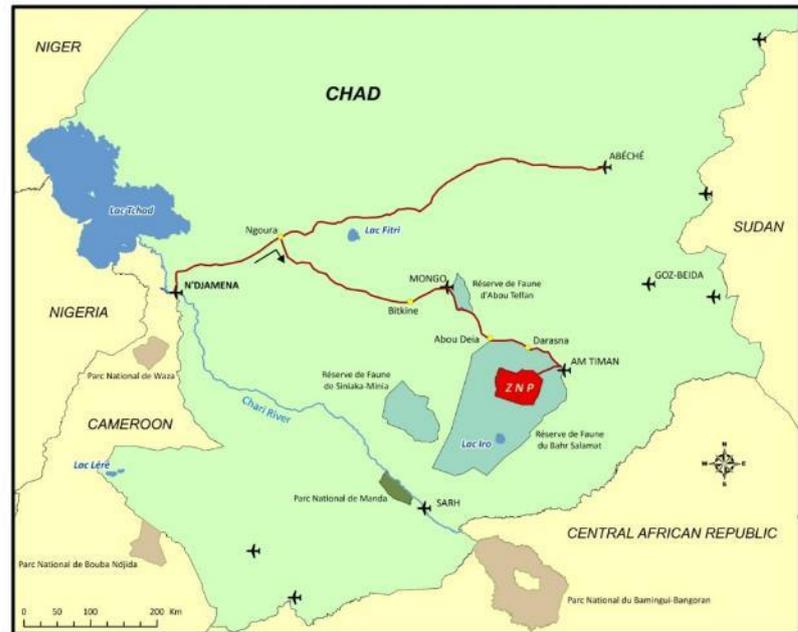


Figure 3: The location of Zakouma National Park.

The park is location at a 10 to 12-hour drive to Zakouma from the capital city (860km). The road up until Mongo has now been surfaced resulting in reduced travel time, however the road from Mongo to the park turnoff near Am Timan can at times be quite slow going, depending on maintenance. It is planned for this road to also be surfaced in the future. The old road between Abou-deïa to Amdouma was recently opened again. This road is 75km shorter than the standard route and reduces the travel time to only 9-10 hours.

There are three entrance gates to Zakouma, the main one being Goz Djérat in the north-east. From N'Djamena the main road to Abéché is taken and at Ngoura (\pm 200km from N'Djamena) one turns right towards Mongo, Abou-deïa and then on to Am Timan. The turnoff to the park can be found on the right 12km before the town of Am Timan. The entrance gate at Goz Djérat is about 1.5 hours' drive from the main road.

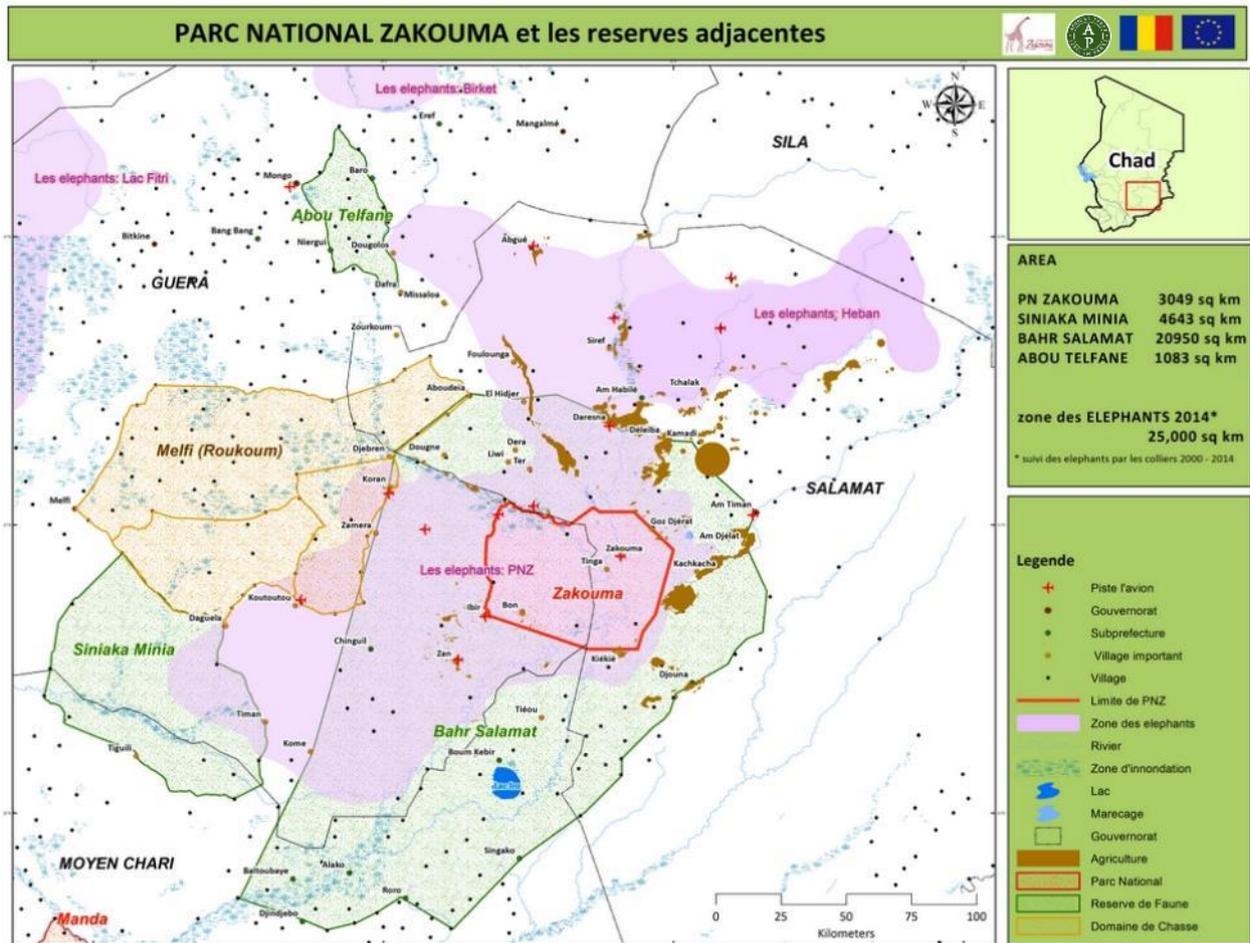


Figure 4: Zakouma National Park and adjacent reserves, giving district boundaries with elephant extent (2011-2014) and nearby elephant populations.

The Park is surrounded by the Bahr Salamat Faunal Reserve with the Siniaka Minia Faunal Reserve in the south-west, an important neighboring protected area as the elephants have been known to utilize the reserve in the wet season. The intention for the 2nd EU funding phase is to include the Siniaka Minia Faunal Reserve under the Zakouma park management in order to secure it for the future and create habitat for wildlife.

2.3.3 Seasonal Animal Migration and the Greater Zakouma Area

The Zakouma ecosystem is characterized by extreme seasonal changes, extensive flooding during the rainy season and drought type conditions in the dry season. During the wet season, an extensive movement takes place where several mammal species, including elephant, move out of the Park's boundaries. The elephants have been observed to mainly stay within or close to Park during the dry seven months, between November and May. Concentrated in the eastern side of Zakouma, the pools of water in the main river system, Bahr Salamat, provide the last sources of drinking water as the area dries up. Besides water, the main wetlands of Tororo (north), Rigueik (east) and Maniam/Al Kalam (south) also provide valuable grazing on the floodplains.

The wet season spans from June to October, during which the elephant were observed migrating to two core areas: the northern zone north-west and north-east of Darasna and the western zone around Hadjer Domoti, south of the Korom River. The western corridor finds the animals leaving the park along the western boundary and heading west or south-west, sometimes as far as Siniaka-Mania Faunal Reserve via Barao. The majority of the elephant movements took place during the transitional period (June/July and September/October) between the different seasons.

The total wet season elephant range based on 2000-2014 data is 25 514 km², while in the first three years

under African Parks management, between 9,000 and 13,000 km² was utilized by the collared elephants. From 2014 onwards, interestingly, this migration pattern has not been observed. Only short movements of 10-30 km away from the Park have been recorded during the last four years.

The tiang and hartebeest migrate northwards, some going as far as north-east of the Abou Telfan Faunal Reserve (see Figure 6). There is an outward movement of most ungulate species in all directions, with Kordofan giraffe, buffalo, red-fronted gazelle and roan often seen in the park periphery, especially in the south, east and north.

During the transitional period between the dry-and wet season (September/October and June/July), the large mammals use two main migration corridors (green on the map below):

- ▶ The northern corridor passes either west or east of Amdouma on the park boundary and passes to the west of Darasna to the northern zone.
- ▶ The western corridor finds the animals leaving the park along the western boundary and heading west or south-west, sometimes as far as Siniaka-Mania Faunal Reserve via Bakao.

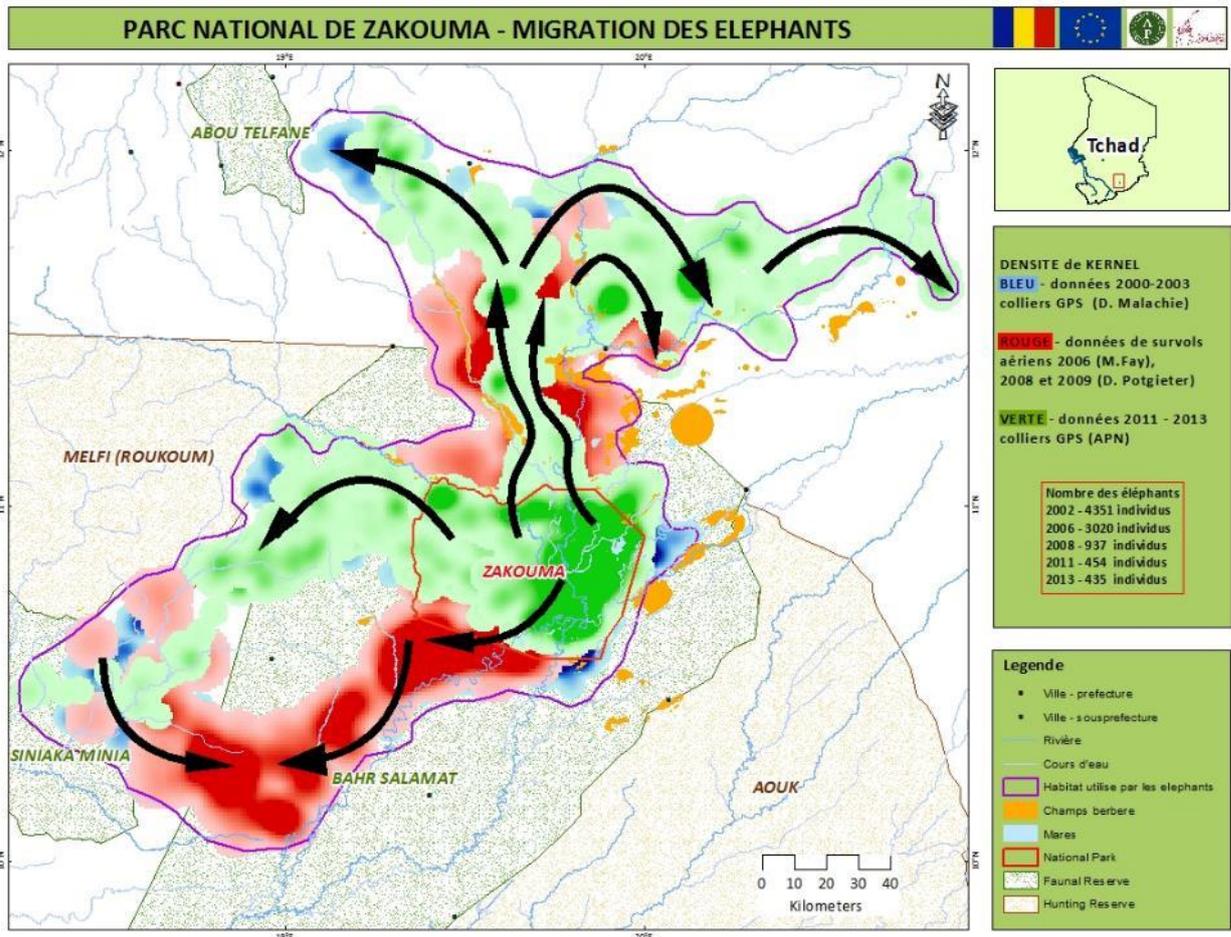


Figure 5: Zakouma National Park and the elephant migration between 2000 and 2013.

The placement of satellite GPS collars on five tiang during the first quarter of 2012 and a further two in 2013 has provided critical information on their movements during the wet season, allowing for a better understanding of the migration patterns which will enable better protection options for the future. Some tiang have been observed to move 150km within four days to reach their preferred wet season range. A collar was also fitted to a Lelwel hartebeest in 2013 with the animal migrated northwards out of the park, to an area also used by tiang.

During the migration periods, the interactions between the animals and humans (sedentary and nomad) occasionally leads to conflicts and in the past a large part of the elephant poaching occurred in the migration corridors during these periods. Therefore, from a conservation point of view, the Zakouma ecosystem reaches well beyond the formal park boundaries in the two directions as is shown in the map above, with

the zone utilized by the tiang reaching even further northwards than shown for the elephants (see figure 5).

The phenomenon of the migration of wildlife outside of ZNP in the wet season is recognized by the Chadian authorities and is specifically mentioned in the Partnership Agreement. Following the Partnership Agreement, this 5-year plan also ascribes the (i) ZNP, (ii) the migration corridors and (iii) the northern and south-western wet season core areas as “GEFZ”.¹

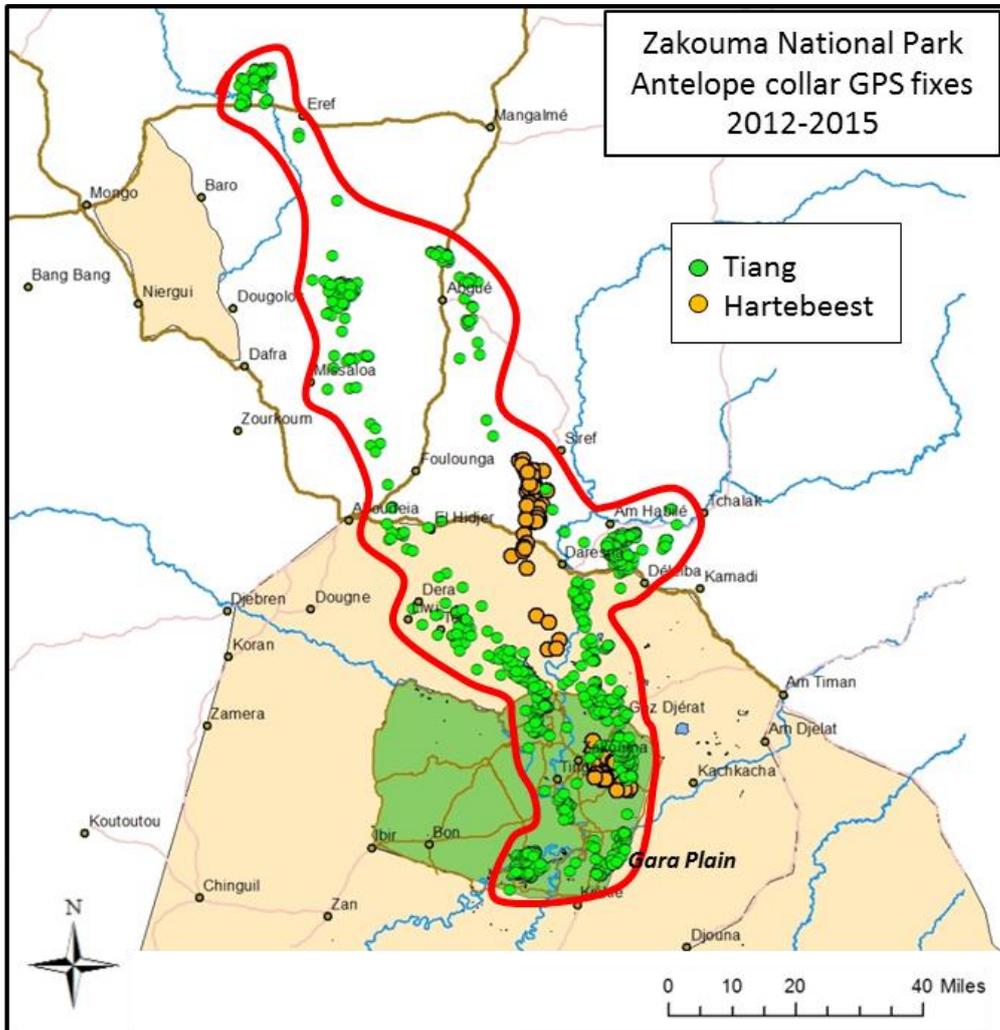


Figure 6: Antelope migration in the ecosystem, 2012-2015.

2.3.4 Population pressure

GEFZ is under considerable population pressure from settlements and nomads. In 2005 it was estimated that:

A sedentary population of around 49,000 souls lived within a radius of 30 km around the ZNP. This is probably higher today; an estimated 30,000 to 40,000 nomads lived around the Park although most leave during the wet season. At the end of the rainy season (September-October), they return south and settle close to the Park with tens of thousands of cattle grazing on the surrounding plains. There are regular incidents of these animals entering the park.

There are also two villages very close to each other inside the Park: (i) Bone Fakhara and (ii) Bone Daoud (approximately 1350 people, 2016). In addition, ZNP headquarters is based in the old village of Zakouma inside the park boundary.

¹ Formerly known as Zakouma National Park and its Periphery (ZNPP) and in some reports also known as the Greater Zakouma Ecosystem (GZE)

2.4 The starting point for AP involvement in Zakouma

In order to evaluate progress under this five-year plan and any further updates to it, the condition of Zakouma prior to the involvement of AP needs to be understood.

2.4.1 Background

Since its creation in 1963, the 21 years prior to the involvement of AP, the Park was managed by the Ministry of Environment with the strong support of the European Union.² The last decade of this period was severely marred by excessive elephant poaching thereby exposing the inadequate levels of law enforcement, conservation and management of the park. The main issues were:

- Inadequate management structure that did not allow an efficient management of the Park. This also had a negative impact on the morale of staff, while the elephant population could not be protected, with a loss of almost 4000 elephants in the 8 years prior to the involvement of AP; The Park was vacated for the five wet months every year (June-November) when all staff moved to Am Timan or N'Djamena thereby leaving the park virtually unprotected.
- The relationship between the park and local communities and authorities was neglected, leading to a loss of community and local government support, aggravated by the fact that the Park was not able to limit elephant poaching.
- Although the basic infrastructure was good, it was deteriorating. Most vehicles and heavy machinery were in a state of disrepair and of the five vehicles only two were functional.

This situation led to the Government of Chad, supported by the European Union, to investigate the alternatives for a more professional management of the park.³ This culminated in the signing of the Partnership Agreement between the Government of Chad and African Parks in 2010.

GEFZ has been managed by AP under the Partnership Agreement since October 2010 with a considerable positive impact on park management and with considerable success in animal protection and park conservation as demonstrated by the much reduced levels of poaching and a general increase in all species numbers, even the elephants.

² (CZSS-CURESS I and CURESS II projects)

³ See also the Preamble of the Partnership Agreement articles c., d., and e.

2.4.2 Partners and Support

ZNP has received the following financial support since the beginning of AP management:

- ▶ Government of the Republic of Chad. By supporting the salaries of persons included in the public service, the provision of some vehicles, weapons and ammunition, the Government financially supports the operation of the ZNP on an annual basis.
- ▶ European Union. The park has received significant financial support from the EU Commission at a rate of 950,000 Euros per year, in a non-interrupted way since 1986. The EU committed € 7.67 million to ZNP for the 5-year period 1 February 2011- 31 January 2016, with an application that was made in late 2016 for a further 6-year grant, as part of the 11th FED EU funding to Chad.
- ▶ African Parks Network donates 10% of the annual budget of ZNP.
- ▶ Ron Ulrich donated a Cessna 182 for Zakouma valued at \$135,000 in 2013. A donation of a further \$20,000 was given towards the RRT in 2013 and again in 2014.
- ▶ James Coleman donated a brick making machine valued at \$50,000, two elephant collars valued at \$5000, \$3000 for school books and horse equipment and \$29,000 – all in 2013. A further \$90,000 was donated in 2014 for a new engine and propeller for the C180 and \$150,000 for the construction of Camp Nomade, an upmarket mobile tourism camp.
- ▶ US Fish & Wildlife Service provided a donation of \$115,350 towards the RRT and a donation of \$115,700 for aerial support awarded in 2014, and the same amount again in 2015.
- ▶ Edith McBean provided \$25,000 towards the village radio programme in 2013.
- ▶ Don Quixote Foundation donated \$165,000 towards RRT in 2013 and a further \$333,000 for 2014 and 2015. The foundation donated a further \$50,000 in 2016 to assist with the construction of two field bases.
- ▶ The Dutch Postcode Lottery Fund donated €295,000 over five years with the first tranche of \$96.112.50 being received in 2013.
- ▶ The Wildlife Conservation Society. WCS funded the use of an aircraft to the park until mid-2013 as well as other guard equipment with a 2011-2013 budget of approximately USD 210,000.
- ▶ The UNESCO Rapid Response Facility provided a once off donation of US\$30,000 to African Parks for the early stages of its management of Zakouma National Park.
- ▶ The Nancy Abraham Foundation (previously called Alexander Abraham Foundation), provided US\$20,000 in 2010 towards the start-up costs of ZNP foundation. Donations were received for 2011, 2012 and 2013 which included special assistance of \$11,000 to the widows of the guards murdered in Heban in 2012. A donation of \$15,000 was received in 2014 for staff bonuses.
- ▶ The Adessium Foundation contributed USD 100,000 in 2010 for park development and early stage funding.
- ▶ Paul Tudor Jones donated \$ 100,000 in 2011 and 2012 towards the financing of running costs of the AP aircraft and a further \$100,000 in 2013 towards the RRT, Widows Fund and the aircraft.
- ▶ Joseph Hudson donated \$25,000 for Zakouma general anti-poaching costs.
- ▶ Marvin and Donna Schwartz donated \$25,000 towards general park management costs
- ▶ Honey Kurtz donated \$25,000 towards general park management costs.
- ▶ The Nature Conservancy contributed GIS ArcMAP 10 software.
- ▶ FJA donated an initial €300,000 (\$414,780) for the school building project in 2013 with a further \$286,300 received in 2015.
- ▶ The Vitol Foundation donated \$80,700 towards the school building project in 2014.
- ▶ IFAW donated ranger uniforms to the value of €21,937.17 at the end of 2013.
- ▶ The Woodtiger Foundation donated \$70,000 in 2014.

- ▶ Vulcan donated \$55,784 for the Elephant Survey in Zakouma and Greater Chad (Binder & Chari)
- ▶ Various small donations of less than \$10,000 each are also received each year, with the joint amount for 2016 being \$10,000, mainly through online donations.
- ▶ EU PPP funds from Kinshasa provided \$1,881 million in 2016, during this year of funding gap between the 10th FED and the 11th FED.
- ▶ WCN donated \$30,000 for 6 months in November 2016 with Chari's Elephant Security Project
- ▶ USFWS donated \$ 303,407 in September 2017 for Aerial support for anti-poaching and management
- ▶ Segre Foundation donated EUR 435,201 for protecting the wildlife and people around Zakouma National Park in 2017.
- ▶ European Union, as a part of 11th FED provided EUR 11,182,166 in October 2017 for 55 months (October 2017 – April 2022)

2.4.3 Infrastructure

Zakouma is relatively well endowed with infrastructure, inherited from the EU managed era. Unfortunately, several of these buildings are becoming old and are in need of maintenance or upgrades.

Table 4: GEFZ Key Infrastructure as of October 2017.

Infrastructure	Description
Entry and exit points	<ul style="list-style-type: none"> ▶ Main Goz Djérat gate – this was upgraded in 2014 with a new gate fitted and major cleanup was done for the centenary celebration. Two monuments were erected 1) to commemorate the guards killed and 2) to commemorate the 50th anniversary. ▶ No reception but an ablution facility has been installed.
Tourist accommodation	<ul style="list-style-type: none"> ▶ 48-bed Tinga Camp – operating and fully refurbished in 2012, with further improvements in 2015. ▶ 8-person Camp Nomade luxury mobile tent camp
Camp sites and picnic spots	<ul style="list-style-type: none"> ▶ A camp site/day visitor’s centre, Salamat Camp, was constructed near Tinga for the use of local Chadians. ▶ All old unsightly picnic sites have been removed.
Roads	<ul style="list-style-type: none"> ▶ A good road network, especially in the eastern half of the park where most tourism takes place, with a new method devised for low impact temporary game viewing roads in high wildlife density areas. ▶ The Amdouma - Abou-deïa road was refurbished and used as a shorter route to the park from N’Djamena. ▶ Roads need grading after each wet season.
Park headquarters	<ul style="list-style-type: none"> ▶ Basic office, workshop, stores and hangar in place. Generally, in good order with annual maintenance and improvements done. ▶ Management housing adequate but with improvements required. ▶ Staff recreation centre and staff accommodation at Zakouma in need of refurbishment and improvements. ▶ Accommodation for official visitors is adequate but in need of repair and maintenance. ▶ Ranger detachment adequate but in need of refurbishment. There is a necessity for the addition of a Rapid Response Unit. ▶ A stable block was constructed in 2011 for 18 horses. ▶ The hangar was extended to contain two aircrafts, the old ULM hangar was converted into a fabrication workshop and a new ULM storage hangar was built in 2014. ▶ Additional offices were built at the Control Room facility to allow for all LE offices to be together.
Guard accommodation	<ul style="list-style-type: none"> ▶ 30 ranger houses were constructed at Goz Djerat.
Law enforcement patrol posts	<ul style="list-style-type: none"> ▶ Four outposts in reasonable condition but no longer fully in use following change to anti-poaching strategy. Kach-kacha and Kiéké have now only one guard present who mans the radio. ▶ An outpost was constructed in Darasna to act as a forward base for the wet season.
Forward Operating Bases (FOBs)	<ul style="list-style-type: none"> ▶ Two FOBs were constructed, using steel and corrugated iron. Rhino FOB is in the south and Attreïdate FOB is in the north.
Other structures	<ul style="list-style-type: none"> ▶ Airstrip at HQ was only usable from November to end of May but is now all weather and used throughout the year, and still in good condition. ▶ The airstrip at Ibir was lengthened and is still in good condition and used regularly. ▶ There are six all-weather airstrips operational inside the park.

This five-year plan will seek to adapt the infrastructure to the new law enforcement and conservation strategies while more intensive upgrading of the older infrastructure is required.

2.4.4 Current levels of economic activity

For the 2010/2011 season, the first year of management of the park by AP, tourism revenue was approximately US\$ 100,000. This came mostly from accommodation and meals as well as park, game viewing and guide fees. Since then a significant increase of tourism income has been sought with improved marketing and awareness, and the season of 2014/2015 showed a profit for the first time in Tinga Camp. Camp Nomade had a successful season in 2016/2017 and provided an income of \$201,698. Camp Salamat

was up to now provided free of charge to Chadian nationals, but we propose to move to a system where a minimal entry fee is charged, following the recommendations from the Tourism Development Plan, written in May 2017. All costs related to this camp were covered by the other two camps (see below), but will fall under the Community Outreach budget moving forward.

Table 5: Combined tourism financial report for 2016/2017.

Combined Tourism Financial Report - 2016/2017			
Camp	Opex Costs	Income	Profit
Tinga Camp	\$ 164,053.00	\$ 157,647.00	\$ (6,406.00)
Camp Salamat	\$ 1,600.74	\$ -	\$ (1,600.74)
Camp Nomade	\$ 433,320.00	\$ 635,018.00	\$ 201,698.00
Total	\$ 597,373.00	\$ 792,665.00	\$ 193,691.26

2.5 Key conservation threats and issues

The main threats currently affecting the park can be summarised as follows:

Table 6: Key conservation threats.

Threat	Description
Elephant Poaching	GEFZ lost about 90% of its elephants over an eight-year period and poaching remains to be a threat. The Zakouma elephant, moving in dense herds, has resulted in a devastating poaching method where herds are ambushed and machine gunned indiscriminately resulting in substantial immediate and subsequent losses, wounded animals, and high levels of stress. The presence of calves in the population further increases the number of animals killed during a poaching incident as they are either orphaned or lost/trampled during the stampede.
Low breeding in elephant herds due to poaching stress	Up until mid-2013 there were very few elephant calves below two years of age, presumably due to the heavy poaching stress over the past years, or severe loss of calves due to poaching related stampeding of the herds, where small calves tend to get left behind. This resulted in almost 0% recruitment during the first 3 years. Fortunately, this negative trend has been reversed and new-born calves are now seen regularly. To date, at least 100 calves have been born since mid-2013; a growth rate of about 5% per annum. With the results of the aerial survey done in March 2016, the population is now officially on the increase, with calves of 3 years and younger comprising at least 16% of the population. Stability has been returned to the population, and all efforts are being made to keep them as free from poaching as possible, or at least to detect poaching as soon as it happens, and thereby ensure no ivory enters the market.
Seasonal wildlife movement within the periphery with Land Use Plan not yet in place	During the wet season large numbers of ungulates (and in the past elephants) move within an area of up to 20,000 km ² , most of which lies outside the protected areas and is mostly inaccessible except by foot and horseback.
Expanding sorghum fields in the corridors and encroachment of park boundaries	Sorghum is becoming an important cash crop in the Salamat Region (not only for local use) and fields are expanding into the migration corridors, wet season areas and the south-eastern corner of the park. Even though a solution has been agreed on in 2015 for the agriculture at Kiéké, the situation still remains to be resolved.
Unmanaged conversion of land and natural resource use in the park periphery	Wetlands and pans around the park are being converted for rice and other cultivation. These provide important breeding habitat for birds, in particular the threatened black crowned crane and all fish species. Farming and fishing on Gara plain have drastically increased in the last five years. The flooding of 2014 which caused serious road damage in the park was almost certainly as a result of cultivation in catchment areas and the resultant increase in run-off.
Fish harvesting inside and outside the park	The reduction in fish in the major lakes in Chad (Lakes Chad, Fitri and Iro) has resulted in a movement of commercial fisherman to the Zakouma Ecosystem which is resulting in heavy commercial fishing outside the park, as well as inside. This has negatively affected the economy of the local fishing industry.
Nomads with no formal links or agreements with the park and free movement close to the elephant herds throughout the year	Nomad groups share the migration routes with the wildlife. It is difficult to work with the leaders as the different groups are constantly on the move, however efforts are being made and relationships have greatly improved. These people also know the areas and elephant movements well. Some nomadic groups have a long tradition of hunting and ivory trade, and many carry weapons against livestock theft.
Bone village growing within the park	After a successful negotiation between the Government of Chad and Bone village, the village has agreed to come up with an alternative location for the village outside the park, at a distance of at least 5km from the current park boundary. The negotiations will continue at the end of October 2017.
Fast growing human population surrounding the park with a low education level	Looking at the number of children in the periphery villages and the quality of education in rural Chad it is clear that the demand on resources will increase dramatically in coming years, with little chance of educating these children on environmental issues through the normal school system.
Post war security issues	High numbers of firearms in circulation everywhere in the country.

Park boundary dispute with local communities	The original park boundary has been properly demarcated with beacons planted, by government together with the local communities and regional government. The Kiéké-Gara Plains boundary however will need careful monitoring. The park agreed to allow cultivation within the disputed area for the 2015 wet season, after which the correct boundary has been enforced. Access during the wet season is severely restricted following the rising water levels, aerial monitoring in September 2017 showed that agriculture had again moved inside the park.
Lack of good legal system	Once a poacher is caught and evidence taken from a crime scene, sometimes with very valuable information, the investigation and prosecution tends to either drag on for a very long time or be annulled for a number of reasons. Convicted poachers are also often released early from prison, and very few serve their full sentence.

2.6 Key mammal species

In relation to key species, the following table summarizes current population estimates and trends, threats posed, and importantly, the long-term targets that are embodied in the long-term vision for the park.⁴

Table 7: Key mammal species.

Species	Current estimate	Trend	Current threat	Long-term targets
Elephant	526*	Increasing	Poaching for ivory	>1000
Buffalo	>10,971	Increasing, mean growth of 7% p.a.	Poaching for meat, low intensity at present, but increases in wet season outside the park.	>10 000
Bushbuck	unknown	Stable	none	
Common duiker	unknown	Stable	none	
Red-fronted gazelle	100-2000?	Stable or increasing	Unknown - they migrate outwards	>400
Lelwel's hartebeest	2000-2300 (>2047)	Increasing	Poaching in wet season for meat	>2500
Giraffe	950-1100 (>947)	Stable	Poaching for tail and meat	>1000
Striped hyena	unknown	Probably stable	unknown	
Spotted hyena	150-300	Stable	Occasional poisoning in periphery	
Cheetah	>10	Increasing - 14 different sightings in 2016, group size: 1-4	Wide ranging, human pressure, lack of prey species in periphery	>20
Lion	100-125	Probably stable	Poisoning in periphery	>150
Leopard	unknown	Sightings are becoming more common, increasing?	Unknown, possibly poisoning	>30
Wild dog	>9	Unknown, one pack confirmed, two reported	Human pressure, possibly poisoning in periphery	>25
Buffon's Kob	300-500	Stable or increasing	Limited suitable habitat, expanding range	>500
Oribi	50-100	unknown	none	>200
Bohor reedbuck	400-600	Increasing	Limited suitable habitat	>600
Roan antelope	700-850 (>768)	Increasing	Poaching in periphery for meat	>1000
Warthog	800-1000	Stable	Some meat poaching in periphery	±1500
Tiang	1700-1900 (>1781)	Increasing	Poaching/wet season habitat loss?	>2000
Defassa waterbuck	1300 - 1500 (>1338)	Increasing	Water dependent	>1500
Greater kudu	50-100?	Stable or increasing	Unknown, expanding range	>250
Black rhinoceros	0	Extinct	To be reintroduced ⁵	>25
Derby's eland	0	Extinct	To be reintroduced	>250
Hippopotamus	0	Extinct	Recolonization possible from Lake Iro. habitat limited	±10

* Counted from photographs early 2017.

⁴ Data from Dry Season Aerial Total Count, Zakouma National Park compiled by D. Potgieter, 2016.

⁵ See Special Project no. 1

3. LONG-TERM VISION FOR ZAKOUMA

The five-year plan is prepared in the context of the mandate given to it in the Partnership Agreement between the Government of Chad and African Parks and the long-term Vision for Zakouma as adopted in 2009 in the 2007-2011 Zakouma Management Plan. The Vision can be summarized as follows:

“To preserve Zakouma National Park and its Periphery as part of the greater Sudano-Sahelian ecosystem through efficient management and sound conservation practices and by obtaining local community support for wildlife conservation and suitable land-use planning in the Park and its periphery and by developing the park’s natural resources to the extent it is consistent with the Park’s conservation mandate”

In order to implement the long term vision for the park as well as address all points identified in the SWOT analysis (table 5), core objectives and strategies need to be set for each key area of activity at ZNP, namely:

1. Park management & infrastructure;
2. Law enforcement;
3. Conservation, monitoring & habitat management;
4. Building a constituency for conservation;
5. Tourism & other revenue generation;
6. Finance, human resources and administration.

These are discussed briefly below and in more detail in Chapter 6.

3.1 Park management & infrastructure

If Zakouma National Park is to be a well-managed park and to achieve its long-term conservation objectives, it will require an efficient park management supported by the necessary infrastructure.

As described in Chapter 2.3, the specific ecosystem of Zakouma and its periphery contributes to the Park’s uniqueness, but also demands a particularly extensive infrastructure and complex conservation management. This means that the conservation and law enforcement activities are entirely different in the wet season from the dry season and can potentially occur in entirely different geographical areas. The short migration months when the animals move to and fro, the wet season areas in the north and the west require a particularly close and mobile protection.

For these reasons, the conservation and law enforcement staff are posted at different areas during the year, with this having been adjusted in the past two years due to the elephants no longer migrating outwards. The small bases in Ibir, Goz Djérat and Darasna are still maintained in the event they need to be used, however as of the wet season of 2016, the rangers are deployed from the below three bases in the wet season. It is envisaged that the second two will also be used at times in the dry season, although currently Zakouma is the base of most law enforcement staff in the dry season. The Rhino FOB will be used as the base for the rhino monitoring teams and the rhino law enforcement team in both the wet- and dry season. All of the below bases are inside the park boundary:

- ▶ Zakouma headquarters (HQ)
- ▶ Rhino FOB in the south-east
- ▶ Attreïdate FOB in the north

Zakouma HQ remains the centre of all operations throughout the year with logistical and administrative support provided by a small office in N’Djamena.

In addition, efficient park management requires:

- A highly motivated and cohesive team to be working inside and around the park;
- A transport network that is well maintained during the dry season, complemented with a

network of all-weather landing strips for the aircraft;

- A well maintained office, maintenance and social infrastructure that are efficiently used;
- The necessary maintenance equipment and stores for stockpiling of goods, especially for the wet season.

In the interest of the long term sustainability of the Park, management will make a continuing effort to use resources as efficiently as possible and to minimise, to the extent that is compatible with its mandate, the overall park management budget. All efforts will be made within the period of this five-year plan to further streamline operations, and reduce the annual running costs.

3.2 Law enforcement

Management will deploy a well-trained, disciplined and fully equipped mobile field force that will operate on a “predictable/un-predictable” deployment strategy to maximise efficiency and operational secrecy, while the 24/7 communications and control base will allow the implementation of a truly integrated law-enforcement strategy. Together with this, the Rapid Response Team (RRT) will be available to follow up on all potential incidents and react professionally on any security intervention required.

The teams will understand the month by month proactive changes in the patrol system that have to be taken, in order to effectively protect the free-ranging elephant population and other wildlife. An operational aircraft will be based in Zakouma HQ throughout the year, supported by the two forward operating bases and a network of strategic all-weather airstrips and outposts throughout the park and the periphery. The Law Enforcement Strategy will be adjusted and improved, as the need arises.

The law enforcement effort will be supported by an expanded intelligence gathering network and increased collaboration and information exchange with other regional law enforcement and judicial authorities such as the GNNT, Public Prosecutor in Am Timan, etc.

3.3 Conservation monitoring and habitat management

On-going monitoring will be carried out to ensure the collection of data and a growing understanding of the ecosystem, wildlife distribution and population trends and human land use patterns. Satellite GPS tracking technology will continue to be used to monitor the movement and migration of selected wildlife species, and in the case of elephants will play an integral part in the security strategy. New elephant collars will be fitted on an annual basis to ensure continual and effective spatial monitoring of the entire elephant population. Biennial aerial total counts will be undertaken to monitor population trends of large mammals, with the next count now scheduled for March 2018. Remote sensing data is used to monitor agricultural expansion in the periphery of the park, and efforts will be made to update the data in the next year. A Geographic Information System (GIS) is used to assimilate and analyse all the spatial monitoring data that is collected.

There is an efficient burning programme in place (a Fire Management Plan was written in 2013) to ensure optimum grazing for wildlife throughout the year and firebreaks in places along the park boundary to prevent runaway fires from entering the park. Aerial ignition technology was introduced successfully in 2015 which enables the park to commence with early burning to create firebreaks in areas which are still too wet to access after the rains.

In order to maintain the diversity within the ecosystem, all extinct species are to be reintroduced, once all requisites are in place. It is ZNP’s intention to reintroduce the Derby’s Eland the moment this is feasible and to investigate the possibility of reintroducing the locally extinct hippopotamus. The MoU for the reintroduction of black Rhinoceros has been signed in October 2017, and preparations have started for the translocation of six black rhino in May 2018.

It is planned that within the greater ecosystem, the Siniaka Minia Faunal Reserve will form part of the Great Zakouma management area, which will provide increased habitat for wide ranging species such as elephant, wild dog and cheetah and an area into which certain ungulate species can be introduced, as Zakouma becomes saturated i.e. buffalo and giraffe. It is hoped that in the future the Siniaka Minia Faunal Reserve

will be upgraded to a national park.

3.4 Building a constituency for conservation

ZNP is to achieve a wide constituency for the park and its conservation effort amongst the local communities around the Park. Apart from liaising regularly with all parties, ZNP facilitates local communities to visit the park using two adapted game viewing vehicles and a truck and designated facility (Camp Salamat) that caters for their demands. Environmental education will be undertaken in schools in the periphery, with consultants advising on a regular basis on the environmental education programme.

Partnerships have been developed with local communities and AP works in close collaboration with other NGO's working in the periphery to ensure that the wildlife both within and without the park are taken into consideration. A carefully planned Land Use Plan is in the final stages of implementation, which will benefit not only the wildlife when moving outside the park but also the people living in the periphery and extended protection zone. Critical to the success of this however, will be the enforcement thereof, which will be the responsibility of local government.

The next EU funding period, 11th FED, will give much of the community conservation work to another NGO, and not to AP. Zakouma however will work very closely with the NGO that receives the grant, as the success of Zakouma is largely dependent on the success of the periphery project.

3.5 Tourism and other revenue generation

ZNP seeks to improve and further develop the three categories of tourism which are currently available in the park; i) Camp Salamat, the day visitor site/accommodation for the local market, ii) Tinga Camp, the 3-star facility which is the centre for all other tourism activities, and iii) and Camp Nomade, the luxury tented camp, which caters for the upmarket adventurous tourist market.

Camp Salamat is becoming more popular in the local Chadian tourism market, who were able to stay in the camp, free of charge. Following the recommendations in the Tourism Development Plan (2017), a minimal park entry fee will be implemented for visitors outside of the community engagement programme.

Tinga Camp is picking up interest with international agents and a new tariff has been established to help encourage international agents and clients to book. Camp Nomade has received very positive feedback from the first two seasons, and despite the negative perceptions of Chad in the West, the camp is virtually fully booked up to the end of the 2019 season. Efforts will be made to ensure that the tourism facilities in Zakouma eventually provide at least 25% of the annual required income for the park. Linking Zakouma with the other prime destination in Chad, the Ennedi Plateau, is still something which Zakouma strives for. Ennedi is a difficult destination to sell to Zakouma visitors because of the time and cost of getting there, but more and more people are now starting to combine the two areas.

The Tourism Development Plan (TDP) has been completed in 2017 and identifies all opportunities to expand the tourism potential for Zakouma. The recommendations from the TDP have been incorporated in chapter 6 Tourism and other revenue generation.

3.6 Finance, HR and administration

The park will be managed by a well-motivated and competent management team, with good systems and internal controls in place. Best practice accounting, operational and contracting procedures will be utilised as per the APN standards and satisfying major financial donor requirements. All efforts will be made to continually improve on what is in place.

4. SPATIAL PLANNING AND ZONATION

4.1 Zonation and Land-Use planning

The spatial planning and zonation for GEFZ is determined by the special needs of the ecosystem, the outward annual migration of certain key species and the increasing human population pressure around the park.

Chapters 2.3 and 6.4 describe the annual migration and the distribution of large fauna during the dry and rainy season.

Chapter 6.2 describes the implications this has on the law enforcement methods and conservation management adopted by GEFZ to adequately protect the large mammals throughout the year.

Chapter 2.3 describes the increasing population pressure on some areas of the corridors as confirmed by the increased areas under berbéré (sorghum) cultivation.

The need to extend the law enforcement and conservation methods beyond the boundaries of the Park are specifically stipulated in the Partnership Agreement, including:

- ▶ The recognition that the Chadian authorities wish to protect the wildlife in the park and its periphery
- ▶ The periphery is defined as specifically including the migration corridors and core wet season areas
- ▶ The Foundation is charged to ensure the adequate management both in the park and its periphery and to ensure that adequate land-use planning is adopted in the affected periphery areas
- ▶ The Parties may agree to include any area in the GEFZ, if they consider this necessary for the conservation of the Zakouma ecosystem.

Land use planning is paramount to the future survival of the park. This open ecosystem is very fluid with people and wild animals following ancient migration routes. Because of this fluidity it has a good chance of surviving and there being very little human-wildlife conflict, although this has already started around Goz Djérat and is something to be aware of in the future as elephant numbers increase. However, in the future the nomads might become more sedentary, and as the human population increases the demand for land will become more. In 2015 a village, Hilélé, sprung up in the northern migration corridor. Concerns were raised, and the local government has agreed to not allow this to happen. Several meetings have happened since and two alternative locations were suggested by the community, which unfortunately are still located in the elephant migration corridor. The village has suggested 2 alternative locations in the dry season of 2017 but these locations are still within the corridor and an alternative location still needs to be found.

A workshop spanning all Ministries involved is planned for 2018 and ideally a ministerial decree will be issued for each identified area that will grant new protection status to the areas outside the park boundary as foreseen in Law 14 of 2008. The decree should appoint the local communities and authorities involved as well as their mission to protect and conserve the areas concerned. Enforcement of this by local government is going to be crucial.

In order to get accurate information for the preparation of the Land Use Plan (LUP) zoning maps, an extensive socio-economic survey was undertaken by a local NGO on behalf of AP / ZNP in 2012 with about 138 villages found in the migration corridors being surveyed. A detailed analysis of these data was done which was used together with historical data, elephant collar data, satellite images and aerial surveys to produce detailed and accurate maps with the proposed LUP areas to the north and west of the park.

A presentation was prepared explaining the reasoning and how it will work for the sensitisation meetings which were undertaken in the region on local government and village level. The LUP was accepted by the local government, and is currently being proposed for approval at National government level. All villages accepted the LUP in principle, however when the first billboard was to be put in place marking the migration boundary on a main road, there was an outcry. This issue was resolved in the past year, and the billboards are in place on the main Mongo-Am Timan road.

The meetings with the district authorities and villages in the Salamat and Guerra regions explained the actual use of the migration corridors by animals and humans alike and negotiated their agreement for the protection of natural resources in the two relevant land use zones which will include their status and simple general management plans. The map in Figure 7 gives the land use zones which were proposed and accepted. No agriculture and no permanent human settlements will be allowed in the zoned areas in order to keep the corridors open for migrating animals. Collection of building materials and firewood, grazing of cattle, Arabic gum and honey collection, etc. will however continue to be allowed. The protection of these areas will benefit the people as much as the wildlife as the resources they use will be conserved to ensure sustainable utilization in the long-term.

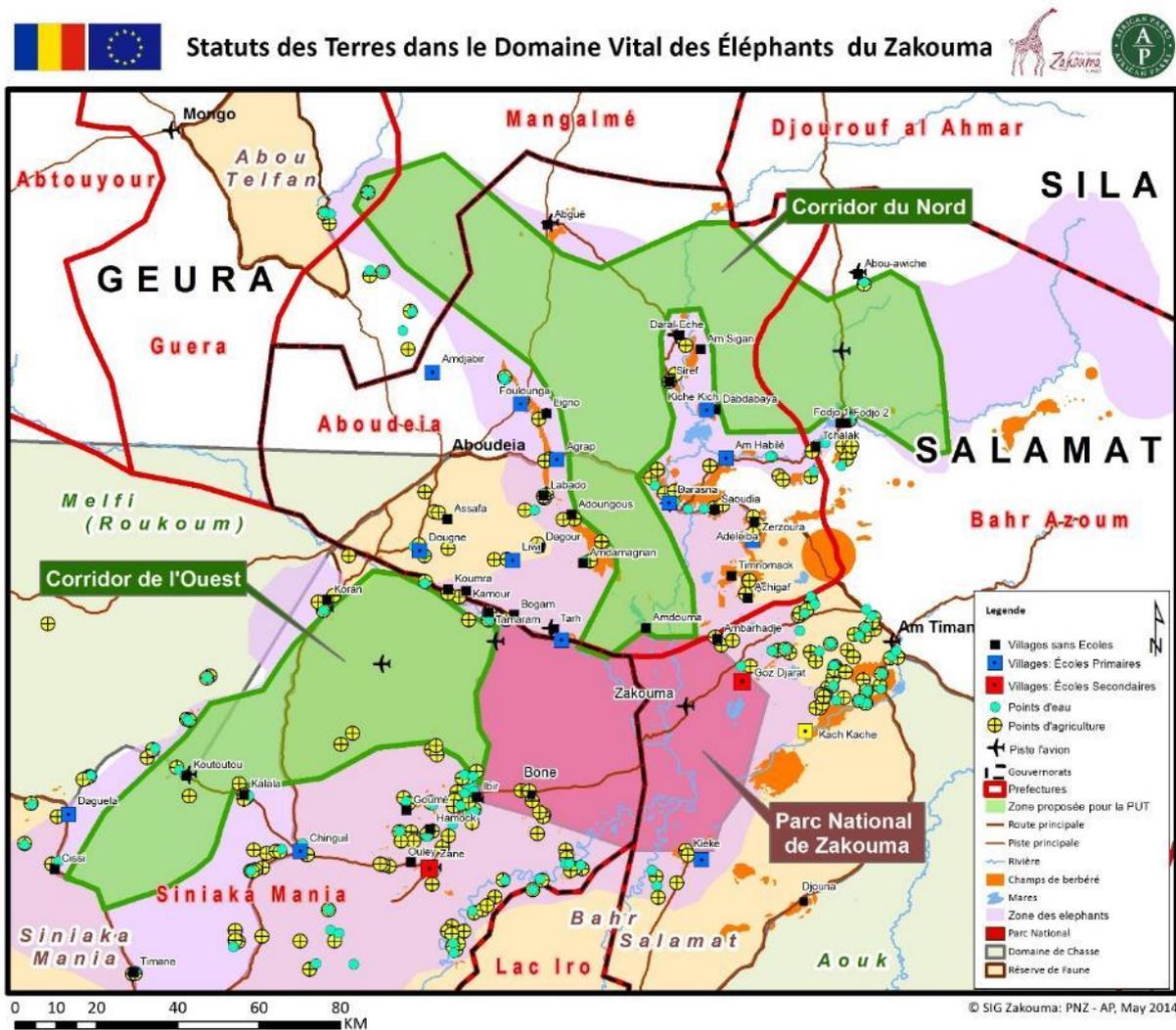


Figure 7: ZNPP Land Use Plan showing the northern and western migration corridors (green).

4.2 Park boundary demarcation

The park was created on 7 May 1963, and a map was produced based on the boundary description given in the decree signed by then President Tombalbaye. The Park was however never properly demarcated with beacons in the field and there were certain sections of the boundary that were disputed by the local communities, especially in the south-east where in the past the boundary road was graded a distance inside the park and not on the boundary. Sorghum fields were being cultivated in this area inside the park up to the old road. In order to reduce the friction with these communities and in order to properly conserve the areas concerned (very important grazing for in particular tiang and fish breeding), this issue needed to be resolved and the entire park boundary clearly demarcated with beacons and/or a road. Following a meeting of the Steering Committee (*Comité de Direction*) in April 2014, mandating the Salamat Region Governor

to finalise the matter, a delegation from government visited the park in early 2015 to finalise this. The demarcation was done and strong long-term beacons were put in place along the correct boundary. The official demarcation of the boundary was undertaken by the Chadian government, with the only assistance provided by AP being transport and the construction of the beacons. As a sign of goodwill and understanding, it was agreed by park management to allow the villagers to plant one more crop in their fields, which are within the park boundary, and to then enforce the park limits once the crop had been harvested in 2015. Upon surveilling the area from the air in September 2017, two fishing villages as well as agriculture was sighted inside the park. The high water level in this area caused difficulty for park management to access the region during the wet season, and a follow-up will take place at the start of the dry season to address the infringement.

The Goz Djérat villagers did not plant their crops inside the park in 2015. The planting of crops after the waters recede will need to be carefully monitored and any infringement will be attended to. Extensive meetings were held with the sedentary Kiéké community as well as with the nomads that utilize Gara Plain for part of the year. All have been made fully aware of the correct boundary, and plenty of beacons have been put in place to ensure good visibility. A water-holding dam was constructed near Kiéké, outside the park in an area where the only remaining standing water was on the park boundary. The new dam will be used by people and livestock (the nomads have wells there for drinking water), and the boundary pan will be for wildlife.

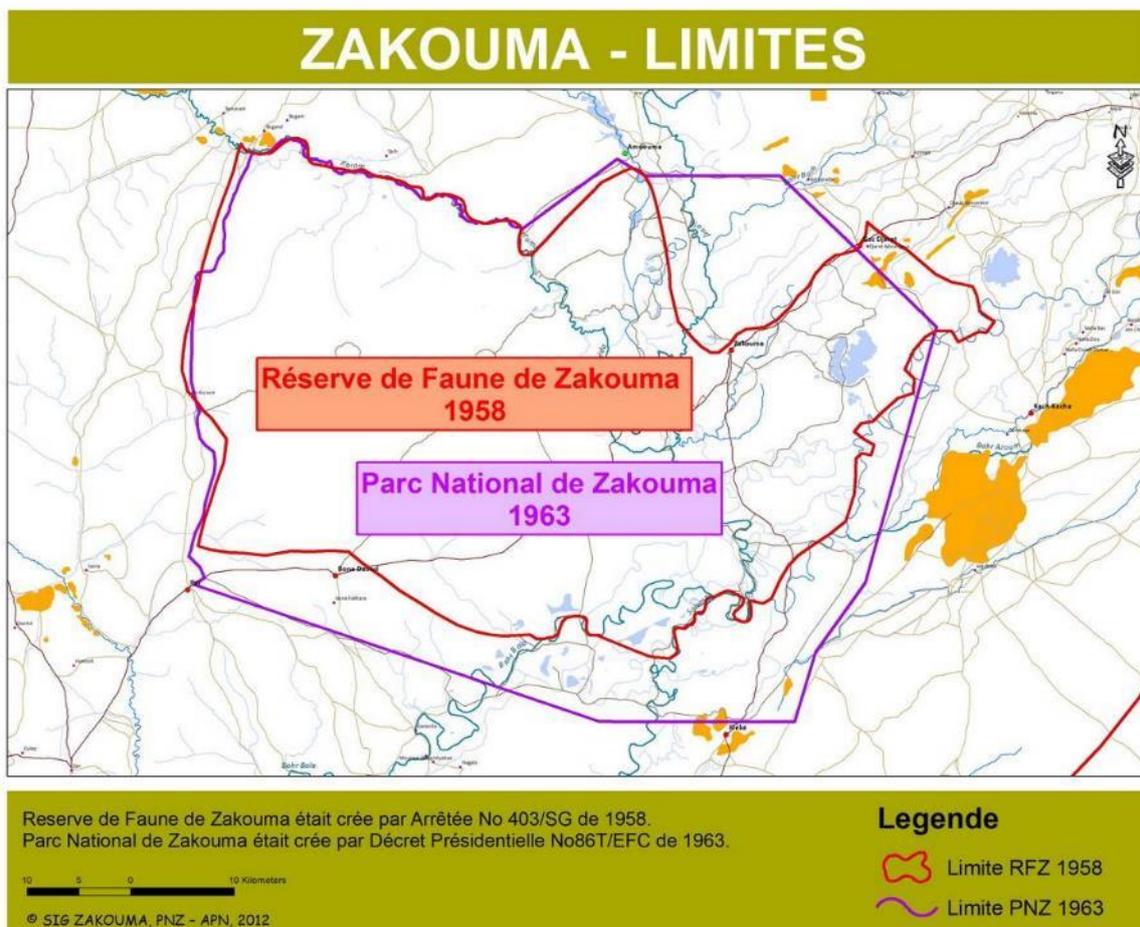


Figure 8: Map of the park boundary; past as a faunal reserve (red) and present as a national park (purple).

As background, in August 2012, the Cadastre Bureau of Salamat Region confirmed the 1963 boundaries to the Working Group created the same year by the then Governor of the Salamat Region. During the last quarter of 2012 these boundaries were discussed again with the local communities, and were again not accepted by them. A detailed document including historical information, maps and ecological implications was prepared in January 2013 (*Limites du Parc National de Zakouma: histoire de incomprehensions, des conflits et des factuers ecologiques d'ecosysteme fonctionel du parc*) and presented to government. The boundary issue was discussed on the first Steering Committee meeting in January 2013 and the Ministry of

Environment undertook full responsibility to solve the problem. Two officials of the Ministry of Urban Development, Housing and Land Affairs were appointed by act No. 611/PR/PM/MUHAFD/SG/DU/2013 to carry out the physical realization of the limits of PNZ.

5. CURRENT SNAPSHOT AND SWOT ANALYSIS

African Parks started the management of GEFZ in October 2010 and the protection of the elephant population against further poaching had the total priority. Another priority was to determine more accurately the seasonal elephant movements by the placement of satellite collars. Since 2013 there has been a change in the movements of the elephants compared to the previous years and can only be attributed to the lower number of animals and the improved security.

Since October 2010 a new management team has been put in place and the staff morale has increased considerably, while the efficiency of law enforcement, conservation and general park management activities has improved. A 24/7 integrated communication and tracking system has been introduced and the law enforcement and conservation effort has visibly improved. The management team is now able to start implementing a range of other strategies that are described in Chapter 6.

A summary listing of the strengths and weaknesses of ZNP and the opportunities and threats that currently confront it can be summarized follows:

Table 8: SWOT Analysis.

STRENGTHS	WEAKNESSES
<ol style="list-style-type: none"> 1. Park with large diversity and great beauty due to extreme seasonal changes. It is the flagship park of Chad and the genuine pride of its population 2. Good numbers of several mammal and bird species threatened elsewhere in the region 3. Intact greater ecosystem, that includes Zakouma NP 4. Strong support from the local and central government 5. Good infrastructure 6. Good medium-term financial donor support 7. Support of the local communities living in the park periphery 8. Drawcard to adventure tourists, now offering a high-end facility to such visitors 9. Now on the world map with regards elephant conservation (Chad was one of the founder signatories of the Elephant Protection Initiative) 	<ol style="list-style-type: none"> 1. Wildlife migration well beyond the formal Park boundaries 2. Increased human pressure around the Park as it is on major transhumance routes 3. Need for better environmental education amongst the local population 4. Some sections of Park boundaries are not still accepted by local communities, although this is improving since the proper demarcation. 5. Adverse international image of Chad as a tourism destination and the Park is not sufficiently accessible for most Chadians 6. ZNP unlikely to become 100% financially sustainable in the future
OPPORTUNITIES	THREATS
<ol style="list-style-type: none"> 1. Creation of a well-protected GEFZ ecosystem including the elephant migration corridors and linked hunting blocks and faunal reserves 2. Opportunities for communities and nomads to share some migration corridors and wet season wildlife habitat through adequate land-use planning and management with resultant benefit to the communities and natural resource protection 3. Possible World Heritage status 4. Reintroduction of black rhinoceros and Derby's 	<ol style="list-style-type: none"> 1. If the northern and western migration corridors are not adequately protected, the elephant population will not be secure, and the black rhino re-introduction will be compromised 2. Ivory trading in Chad supported by an increased international demand for ivory 3. Limited economic potential of GEFZ in the region versus growing sorghum production on periphery land 4. Population pressure and economic development in the region

<p>Eland</p> <p>5. Create a model park in the Sahelian zone</p>	<p>5. <i>Bone</i> village within the park boundary (potential solution found)</p> <p>6. Lack of efficient legal system in Chad</p> <p>7. Inability of government to contain the movement of armed gangs outside the park.</p> <p>8. Increase in fishing in the Park and periphery by fishermen from other area in Chad with boats now being used.</p>
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This business plan seeks to further reinforce the strengths of the Park while energetically addressing the identified weaknesses. Strategies will be put in place to seek to fulfil the opportunities, while taking into account the identified threats, including specific risk mitigation measures where possible.

6. KEY OBJECTIVES AND STRATEGIES

6.1 Park operations & infrastructure

The overall objective of the park operations & infrastructure activity is to provide the minimum necessary infrastructure to support the proper functioning of the park.

In that regard, the core objectives and strategies in relation to park operations & infrastructure can be summarised as follows, followed by a discussion below:

Park operations & infrastructure	
Core objectives	Core strategies
1. ZNP to employ a full team of experienced, motivated and well-equipped park operations staff	- Continue to recruit, train and build the capacity of, as well as manage, a competent and motivated staff as and when necessary
2. To complete all necessary components of park infrastructure required for the proper functioning of the park and to maintain it in such a way as to ensure its availability at minimal cost	- Upgrade the existing Zakouma infrastructure - Put in place the necessary infrastructure to manage the Siniaka Minia Faunal Reserve
3. To put in place the necessary transport equipment required for the proper functioning of the park and to maintain it in a cost effective way	- Upgrade the park's existing fleet of vehicles - Put in place the necessary management system to control the park's vehicle movements and maintenance plan to maintain the park's vehicle fleet for maximum efficiency - Reinforce the park's aerial support capacity
4. To complete necessary communications network required for the proper functioning of the park and to maintain it for maximum efficiency	- Upgrade the park's existing communication infrastructure

Each core strategy is explained in more detail on the following pages.

Park operations & infrastructure

STRATEGY 1 – Recruit, train, build the capacity of, and manage a competent and motivated staff

Discussion

Staffing and recruitment

The operations department is in charge of all park infrastructure and maintenance and is made up of the following positions as well as projected growth of the next 5 years:

Table 9: Staff requirements for the operations department.

Operations staff employed	Remark	2017	2018	2019	2020	2021	2022
Zakouma FOM	25% of time		1	1	1	1	1
Siniaka Minia FOM	25% of time		1	1	1	1	1
Technical operations manager		1	1	1	1	1	1
Ass manager & electrician		1	1	1	1	1	1
Storeman			1	1	1	1	1
Drivers		1	1	1	1	1	1
Truck drivers		2	2	2	2	2	2
Driver's assistants		2	2	2	2	2	2
Heavy machinery operators		3	3	3	3	3	3
Mechanics		1	1	1	1	1	1
Apprentices		3	2	2	2	2	2
Welders		2	2	2	2	2	2
Assistant welder		1	1	1	1	1	1
Carpenters		1	1	1	1	1	1
Watchman		4	4	4	4	4	4
Labourer		1	1	1	1	1	1
SMFR Mechanic				1	1	1	1
SMFR tractor driver				1	1	1	1
SMFR driver					1	1	1
SMFR storeman				1	1	1	1
Veterinary assistant		1					
Grooms		5	6	6	6	6	6
Total		29	31	34	35	35	35

Key staff recruitments for SMFR in the first year will include a Field Operations Manager (25% of his time), and LE driver/assistant mechanic. Depending on the growth of the project and the reliance on ZNP staff this might expand to include a workshop/technical manager, a clerk/accountant, a mechanic and drivers. LE and Community staff are discussed in more detail in Chapters 6.2 and 6.4

Training and capacity building

To build the capacity of the operations department staff the following training and courses are anticipated for the duration of this 5-year business plan:

- Additional driver training when and where needed
- English language training for certain key positions
- Computer literacy training for certain key positions
- Fire management training for key individuals
- First aid and advanced first aid training

Staff equipment

To keep staff motivated and to look professional all staff will be issued with uniforms on an annual basis. The following uniforms will be issued to the operations department:

Table 10. Uniform and equipment requirements per person.

Uniform Type	Gifts/Board Members	Finance Staff - Ndjamena	PMU	Workshop	Tourism	Stables	Community
Olive Dress shirt	1	2	2				2
White Dress shirt			1*				
Golf/Polo Shirt		2	2		2		
T-shirts				2		2	2
Caps	1	1	1	1	1	1	1
Chino Pants					2		
Overall - two piece				2		2	
Safety Boots				1		1	
Shoes					1		

* only certain PMU staff.

Uniform Type	PMU	Workshop	Tourism	Stables	Community
Dress Shirt	2				2
Polo Shirt			2		
Chino Pants			2		
Overall - two piece		2		2	
T-shirts		2		2	
Safety Boots		1		1	
Shoes			1		
Caps	1	1	1	1	1

Staff management

To ensure optimum performance of staff all staff will be given Key Performance Indicators (KPIs). These KPIs will be based on the specific terms of reference for each position.

At the end of each year staff members will be assessed following these KPIs. This assessment will form the basis for bonuses and increases and will identify where training of individuals is needed.

Staff health and welfare

Mosquitos are a problem during the wet season when water inundation provides ample breeding grounds for mosquitos. The mosquitos cause malaria amongst staff that effect productivity. To better control malaria all staff house will be sprayed twice during the wet season with a long acting insecticide to kill flying insects.

Goals & measureable outcomes

- ▶ Set of KPIs per staff member
- ▶ Procure the necessary staff equipment and uniforms
- ▶ Identify training needs and action training programs accordingly.

Required resources (people and other)

- ▶ Employment of a HR manager
- ▶ 3rd-party consultants or external service providers to provide the necessary training.

Cost

Workshop staff uniforms and equipment	\$6,945
Staffing – All salaries and statutory costs	\$199,482
Training and capacity building programs (drivers licenses)	\$7,800

Park management & infrastructure
STRATEGY 2 – Upgrade the existing Zakouma infrastructure

Discussion

Zakouma is relatively well endowed with infrastructure inherited from the EU managed area. Unfortunately, a lot of these building is becoming old and are in need of maintenance or upgrades. Some inconsistencies exist resulting from the fact that all infrastructure was constructed during various previous ‘project’ phases and with little long-term planning. The priority is now to upgrade existing infrastructure where needed, put in place an infrastructure maintenance plan and finalise the existing park management infrastructure.

i. Upgrade of existing park infrastructure

The planned building upgrade and development is as follows:

- ▶ The Darasna regional base was completed in 2016. This base has not been needed since it was completed, however it is necessary to have it ready in the event the elephants move into the northern corridor again and for accommodation if needed to do LE work in the northern corridor relating to bushmeat hunting. Darasna has a very good airstrip and the base consists of 2 x 20’ storage containers with an enclosed area in-between for sleeping.
- ▶ ZNP has three park entrances that also serves as regional bases in Kiéké, Ibir and Goz Djérat which were built during the previous CURRESS projects and these buildings are in need of an upgrade.
- ▶ At present the housing in the Zakouma staff village does not have any ablutions. Basic ablutions consisting of a toilet and shower to be constructed at all staff houses. All upgrades will be in line with a strategy of moving away from short term project thinking to a long term strategy where staff is happy to commit to a long term career in Zakouma and whereby the equality principle between expat and local staff is assured. An in-house building/maintenance team will apply a clear set of rules and standards, and local building contractors will be used for construction work.
- ▶ Annual maintenance and upkeep of junior staff houses include a coat of paint and rethatching of all houses. Some of the junior management houses will also need an upgrade.
- ▶ The Zakouma senior management housing is in dire need of an upgrade. At present numerous wiring and plumbing systems exist in each house following the various funding periods. The

houses are also not of the ideal design for Zakouma's hot temperature. The African Parks preferred architect has been approached to design a basic facelift for each of these houses.

- ▶ In line with the tourism development plan for Zakouma some basic upgrades were suggested for the permanent Tinga tourism facility. The camp is overall in good shape currently but the following recommendations are proposed to get it to a higher standard for international guests:
 - The rooms are generally stark white and need some infusion of colour to walls
 - Room décor needs to be upgraded and some wall hangings are required to produce a homelier feeling
 - Traditional Chadian carpets as scatter rugs on the floors can go a long way to soften the rooms
 - All mattresses are heading towards their expiry date and it is proposed that a provision be made to replace these soon.
 - Mosquito nets are old and all need replacement.
 - When it is hot, ventilation is restricted and this could be improved with some additional windows that can open wide but still be screened with mesh to keep insects out.
 - Provide hot water in rooms
 - External pathways can be demarcated more clearly and path lighting needs to be repaired where the lights are broken or missing.
 - There are a few electrical distributions boxed around the site that have no lids and have exposed wires that need to be tidied up and secured.
 - There is a need to house drivers and it is proposed that an accommodation dormitory be established on the old foundation at the entry/exit of the grounds in the north east end – a good foundation to build on that is sufficient in size.
 - The kitchen is well equipped but it is recommended to provide for a small budget for equipment upgrades (additional pots/pans/utensils/coffee plungers/bread maker/etc)
 - Main lodge area furniture is adequate with a few baby high chairs being required. These could be made in the park's workshop.
 - Ablutions are adequate in the main area but with the expected increase in guests, it is suggested to add a urinal in the men's toilet for which there is ample space currently.
 - The camps admin office requires a printer but otherwise the admin component is adequate.
 - At the back of house, a waste management plan is required, a proposed system will be put forward to the park management directly by the African Parks head office.
 - The facility will greatly benefit from a dedicated retail shop section that can be built in the left corner of the main dining area when one faces the kitchen. Simple inner walls, a secure entry gate and internal shelving and display areas will make for a perfect retail shop to enhance sales of shirts, curios and other merchandise at the camp.
- ▶ The electricity supply to the Zakouma headquarters was upgraded in 2015. The upgrade included; cables, switch gear, solar systems, generators and general wiring in all buildings is ongoing and forms part of our general maintenance and improvement programme. Deep cycle batteries were installed at the main office complex in Zakouma in order to provide 24/7 power to some of the offices and the control room complex. These upgrades enabled ZNP to efficiently operate its radio/control room, workshops, etc. at minimal cost and maintenance. Unfortunately, the majority of the batteries used for the inverter systems have reached the end of their lifespan (probably because of the high temperatures experienced in Zakouma) and will need to be replaced.
- ▶ One new generator needs to be purchased in 2018 to replace the standby generator currently used at the park headquarters.

- ▶ Stable upgrades: Upgrade existing fencing, finish new paddock and rebuilt fencing adjacent to stables with termite-proof plastic belts and a single-strand electrical offset to deter elephants. Upgrade the FOB stables with proper locks and possibly remove paved surface seeing that it is very hard under foot.
- ▶ At the moment the radios deployed in villages around the park, to form the early warning radio system, is based in the operator's houses. These operators sometimes leave their villages and the radios are then not accessible to other people in the village. It is suggested that small rooms are built in each of these villages to house the radios and provide the necessary protection without imposing on somebody's house.

ii. *New building construction*

New building construction anticipated for this business plan includes the following:

- ▶ A rapid reaction facility at the headquarters building. The reasoning for this facility is explained in more detail in Chapter 6.2 strategy 1, iii, Training.
- ▶ During 2014 major improvements were made to the workshop complex at headquarters with the hangar being extended to house two aircraft, the old Ultralight aircraft hangar converted into a fabrication workshop with lockable store for power tools and a further covered storage area was made between 20' shipping containers. Two previously unused rooms were converted into 1) the anti-poaching store and 2) the radio and general equipment store. In 2015 2 x 20' containers were converted into stores and another unused room was converted into a sewing room, a regular and industrial sewing machine is in place for use by the two employees who are also tailors. All of these improvements are unfortunately piecemeal and was constructed to save money in the short-term without any long-term durability. A major new workshop construction is suggested for 2018 as a high priority. The new construction will include a single building that will replace all previous buildings that is currently scattered all over the complex. Buildings that will be incorporated into a single building includes:
 - Admin office and filing room;
 - Mechanical workshop;
 - Dust-free workshop for the refurbishing of engines and gearboxes;
 - Welding workshop;
 - Carpentry workshop;
 - Storage facilities for the following items:
 - Tools;
 - Spare parts;
 - Fuel and lubricants (with sufficient space to store 88 drums - one shipping container - at a time);
 - Building materials;
 - Carpentry.
 - Wash bays;
 - Generator rooms;
 - Watchman facility;
 - Parking bays.

- ▶ In line with the tourism development plan for Zakouma the current Camp Salamat infrastructure needs to be re-built in a new location:
 - A traditional layout inside and outside cooking area with work areas for food preparation and washing up sinks;
 - A large open plan raised mess area/lounge with tables and chairs;
 - Baboon and monkey proof store room with solar fridge;
 - 10 local grass huts with permanent steel frames and cement floors. The woven grass walls are fitted each year after the wet season. No furnishings are provided in the rooms; (visitors bring their own bedding)
 - Ablution facilities;
 - The addition of a display area (counters and poster display areas) together with a white board and black board must be added to provide for a more structured environmental education component, under the roof structure of the lounge/seating area or as an extension to this facility;
 - With the exception of the ablution and mess/lounge facility, all other structures can be dismantled and moved to the new location and their existing footprint rehabilitated and clean up.
- ▶ The park will employ 18 additional rangers for the rhino protection and monitoring program and these rangers will have to be supplied with the same basic accommodation as existing rangers at Goz Djerat and Ibir.
- ▶ Once permanent structures are put in place in the Siniaka Minia Faunal Reserve, later in this 5-year period, similar accommodation will have to be put in place for the Siniaka Minia rangers at Daguela.
- ▶ The construction of five additional Secko schools will take place in 2018. This project is outlined under chapter 6.3.
- ▶ Seven additional teachers will be employed for the new primary- and secondary schools. Teacher's houses will be constructed, as outlined in chapter 6.3.

Table 11: Overview building upgrades and new buildings.

Building upgrades					
	<i>Costs</i>				
<i>Buildings</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
Veterinarian's house	X				
Zakouma FOM house	X				
Junior management housing	X				
Solar battery replacements	X				
Stable upgrades at FOB	X				
Tinga upgrades	X	X			
Siniaka Minia FOM house	X				
Park manager's house		X			
Pilot's house	X				
Assistant park manager's house		X			
Zakouma HQ guest facility		X			
Three regional bases			X		
New buildings					
	<i>Costs</i>				
<i>Buildings</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>

RRT Facility	X				
Workshop complex		X			
Siniaka Minia FOB	X				
Camp Salamat	X				
Toilets - Zakouma staff village	X	X			
Additional ranger housing - PNZ	X	X			
Additional ranger housing - SMFR	X	X	X		
Siniaka Minia head quarters			X		

iii. *Annual maintenance on all existing roads*

Zakouma has quite an extensive road network, the upkeep of which is costly due to extensive inundation during the rainy season. Specific actions foreseen:

- ▶ The Zakouma-Goz Djérat-Am Timan road was upgraded in places to allow it to be used during most of the rainy season, with a drift built over the worst section outside the park. Improvements and maintenance to this road will continue. The new wet season Zakouma-Goz Djérat road is much better aligned through areas which do not get flooded and have a better substrate. Both roads need a lot of maintenance work after the wet season.
- ▶ All the park roads need to be re-graded in the months of November and December after the wet season. Key roads are opened as quickly as possible to allow anti-poaching teams to operate near the elephants. To avoid ‘ditch grading’, certain roads are graded after the first rain to build up and shape the middle and allow the road to be compacted during the last few weeks of use before seasonal closure. Drifts already constructed are maintained and where necessary new drifts are put in place. The new tractor, used with the disc plough and pull grader, are used on roads that do not require major grading to reduce maintenance costs substantially, and allow for two teams to do road preparations at the same time in the critical months just after the wet season.
- ▶ Roads are continuously upgraded for wet season operations in the western half in order to better secure the western half of the park as a result of changed elephant movements. Existing roads from Ibir to Attreïdate were upgraded to allow for wet season use and a drift was built near Ibir, but which needs to be improved again for the next wet season. The all-weather road, constructed between Attreïdate and Rhino, needs more work to be done on certain sections of the road which becomes too wet at the end of the rain season. The patrol tracks, made for wet season use by motorbike and the Prado’s in the west of the park, will not be graded but will be maintained with the tractor-driven slasher to keep the impact on the environment in minimal.
- ▶ The Abou-deïa – Amdouma road, upgraded in 2015 to allow for use by visitors from N’Djamena as well as the village outreach vehicles for the groups from Mongo, is maintained prior to each tourism season seeing that it reduces travel time to the park considerably.
- ▶ The old causeway across the Salamat River at Tinga has collapsed and is no longer in use. This causeway will have to be removed and replaced with a bridge or pontoon to provide access to the park for a longer time in the wet season. At the moment the west of the park is cut off from the headquarters for 5 to 6 months and with a bridge at the old causeway this can be reduced to about 3 to 4 months. Shipping containers will be used as gabions to construct this bridge.

iv. *Airstrips*

ZNP now has a network of 18 airstrips throughout the park and the periphery that allows it to manage the entire area during both the dry and the wet season (see figure 9 below). There are now five all-weather airstrips inside the park to be able to get LE teams into certain waterlogged areas, as well as one dry season

airstrip. All airstrips inside the park, including the Zakouma airstrip, is being maintained in the dry season by pulling tires behind a vehicle and in the wet season by cutting the grass only. The network of airstrips outside the park is maintained by using mostly local labour. The program is ongoing and because aerial support is key to our anti-poaching activities, especially in the wet season, additional airstrips will continue to be added as elephant movements change and the need for more airstrips arises. Most of the airstrips are bush strips, which cost very little to construct and which require only slashing to keep them usable. The Rhino and Korom West airstrips were graded in 2016 to improve the camber.

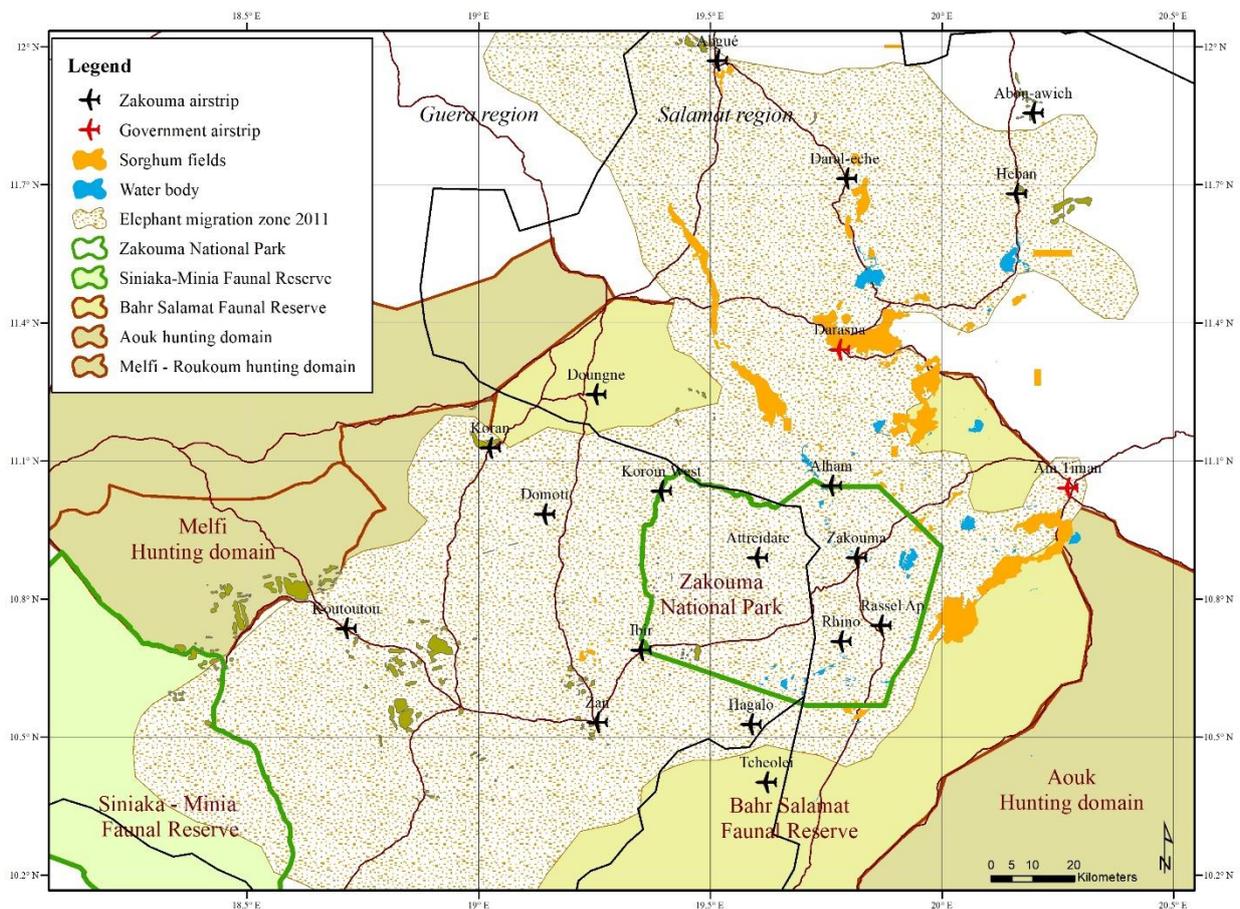


Figure 9: Airstrips in Zakouma National Park and the elephant migration corridor.

The airstrip at the Rhino FOB will need to be extended to 1600 m to accommodate a C130 for the rhino reintroduction by latest April 2018.

As part of the wet season patrol strategy, Chapter 6.2, strategy 1, the following airstrips needs to be upgraded:

- ▶ Rassal Ap airstrip will need to be graded, and the Sherifa airstrip need to be improved and graded, seeing that it allows the only air access into Zone 2 during the wet season.
- ▶ An all-weather airstrip to be opened in the Al Ham area to provide aerial access to Zone 6.

v. Put in place road signs on all existing tourism roads

To give tourists a better understanding of where they are there is a need for a good map that corresponds to clearly marked roads with numbered intersections for easy reference. To enable this, stone sign posts will

be erected at all intersections in the tourism section of the park.

vi. Put in place a road network along the park's periphery from where firebreaks can be achieved

The prevailing wind in the dry season is from the north-east and veld fires, caused by negligence outside of the park, are pushed into the park by these winds. These fires destroy a lot of grazing for wildlife and not only is fighting these fires costly but it is also a drain on park management, resources and staff. To prevent these fires from entering the park fire brakes are made by igniting dry grass early in the season along the northern and eastern boundaries. The current method is however not sufficient and a road, running parallel to the park boundary, will be constructed from where a firebreak can be put in place at the start of each dry season.

vii. Put in place a waste management system at the park headquarters to recycle or incinerate the waste from the headquarters and tourism lodges

The 3 tourism facilities as well as the Zakouma village and staff housing is producing a lot of waste each month and due to poor waste management practices baboons has become a problem at the park headquarters. A waste management and recycling system will be put in place where recyclable waste will be collected, biodegradable waste will be used to make compost for the Zakouma vegetable garden and other waste will be incinerated.

viii. Support repairs and maintenance

To repair and maintain the above mentioned activities the park employs a tailor, welding and carpentry shop and also a plumber / electrician. These services need tools and consumables to provide the necessary support to the technical operations department.

Goals & measureable outcomes

- ▶ Ablution facilities for all staff houses in the Zakouma village.
- ▶ Upgrade to certain management houses.
- ▶ Tinga Lodge upgrades.
- ▶ Construction of a new workshop facility.
- ▶ Construction of a rapid reaction facility.
- ▶ Camp Salamat moved to a new location.
- ▶ Road signs on all tourist roads.
- ▶ Fire brake along the northern and eastern park boundary in place.
- ▶ Waste management system in place.
- ▶ Necessary support services to the technical operations department in place.

Required resources (people and other)

- ▶ The only resources required outside of normal park operations will be:
 - Architect to draw plans for the new construction and improvements.
 - Local contractors to do the construction.
 - External supervision to oversee local contractors when making improvements to senior staff housing and the Tinga Lodge.

Cost

Camp Salamat upgrade	
Kitchen and dining	\$7,171
10 huts	\$4,485
Ablutions	\$3,332
Borehole	\$6,134
Total	\$21,222
Upgrade of the stables	
Upgrade fencing	\$3,330
Remove paved surface in the stables	\$1,000
Total	\$4,330
Cost for the construction of an additional 18 ranger houses	
Construction of 9 houses in 2018	\$18,252
Construction of 9 houses in 2019	\$18,800
Total	\$37,052
Maintenance and upkeep of junior staff houses	\$5,551
Addition of ablutions at the staff houses in the Zakouma village	
Construction of ablutions for 22 houses in 2018	\$34,782
Construction of ablutions for 21 houses in 2019	\$34,197
Total	\$68,979
Construction of radio shelters for the village radio's	\$2,195
Causeway over the Salamat river at Tinga	\$50,000
Replacement costs for the electrical system at Zakouma HQ	
Deep cycle batteries 200ah/12v	\$5,217
Replacement inverter (2)	\$3,500
Replacement 50 kVA generator at Zakouma HQ	\$23,000
Cost for parallel road to the Park boundary to manage firebreaks	\$576
Cost of annual maintenance on all existing roads	
Grader usage	\$22,302
Tractor usage	\$5,103
Fuel	\$1,890
Allowances	\$2,160
Total	\$24,462
Cost of annual maintenance of all existing airstrips	\$2,520
Cost to open a road network along the park's periphery from where firebreaks can be achieved	\$576
Cost of road signs for all existing tourism roads	\$10,800

Cost of a waste management system at the park headquarters to recycle or incinerate the waste from the headquarters and tourism lodges	
Incenerator	\$3,000
Wire cages for recyclable materials	\$500
Total	\$3,500
Costs for the upgrades to the workshop, senior management houses, Tinga camp and Park entry gates will be given once quantities have been received from the architects.	
Cost of tools, equipment and consumables for the support services to the technical operations department (non-vehicles)	\$5,000

Park management & infrastructure

STRATEGY 3 – Put in place the necessary infrastructure to manage the Siniaka Minia Faunal Reserve

Discussion

The Zakouma periphery is defined as the total area used by the elephant when they exit the park. In the newly signed, extended version, of the partnership agreement between African Parks and the Government of Chad the Siniaka Minia Faunal Reserve forms part of the greater Zakouma ecosystem and will be managed by the Zakouma park management going forward. To enable the Zakouma park management to effectively manage Siniaka Minia the following basic infrastructure needs to be put in place:

i. Construct a Forward Operational Base in Siniaka Minia

A basic FOB will initially be constructed to allow support to teams operating in Siniaka Minia. The FOB will be constructed using shipping containers as storage facilities with a roofed area between the containers providing shelter from direct sunlight and rain. The FOB will be constructed from 6-meter containers covered by a corrugated iron roof and will contain the following:

- ▶ One 6-meter shipping container used as an office / radio room.
- ▶ One 6-meter shipping container used as accommodation for the FOM.
- ▶ One 6-meter shipping container used as accommodation for the law enforcement manager, driver and radio operators.
- ▶ One 6-meter shipping container used as a store.
- ▶ A communal area where visiting patrols can pitch their tents.
- ▶ Associated infrastructure such as generators/pumps/solar and other equipment.

From year two onwards we will investigate whether it is necessary to construct basic FOB's and Observation Posts at several key areas in the Reserve such as at Timam, Tigouli and Tangala. All these sites occupy high ground and make ideal fixed monitoring sites in key areas.

ii. Build an airstrip at the FOB

Aerial support to Siniaka Minia will be essential in the success of the reserve, both in receiving logistical flights from Zakouma in the C182 but also to provide aerial surveillance from the Savannah, especially at the beginning of the dry season when nomads will be arriving in the area. To provide Siniaka Minia with the needed aerial support an airstrip at the FOB will have to be built. A hangar will also need to be constructed to park the Siniaka Minia aircraft. New basic ULM airstrips will be opened up at Timam,

Tiguili, Tangala/Djember and Andi Garbokoum with a further three points inside the reserve (central, south and northern). These will be upgraded over time as and when the need is required.

iii. Upgrade the access road from Ibir to Siniaka Minia

To provide logistical support by road from Zakouma it will be necessary to upgrade the existing road from Ibir, in the south-west of Zakouma, to Daguella to an all-weather road. The following anticipated work will have to be done to this road:

- ▶ Put a camber on the road to allow water to run off.
- ▶ Raise the road in areas where it gets inundated with water.
- ▶ Construct 4 causeways / drifts at river crossings.

iv. Put in place a basic road infrastructure inside the park

There is a basic network of roads in certain areas of the reserve though these are limited to around Daguella/Rim. To allow for easy access to the reserve and to be able to move around the reserve to conduct patrols and to react to incidents it will be necessary extend this basic road network. Initially this road network can be opened by hand providing job opportunities to the local residents (3 teams of 6). This road network can in future be elaborated upon by using a disk harrow and pull grader to level the roads after the wet season.

v. Put in place the necessary signpost along the periphery of the Siniaka Minia Faunal Reserve to inform nomads of the boundaries

Nomads have been entering Siniaka Minia the past few years due to a lack of control. Nomads will have to sensitized to the fact that the reserve is now being managed and they will no longer be allowed to enter. To inform nomads of the boundaries of the reserve signposts will have to be put in place along the boundaries of the reserve informing nomads of the boundaries. The northern and eastern boundaries are fairly well marked by an existing road but the southern and western boundary will need some work on in various areas – approximately 160km.

Goals & measureable outcomes

- ▶ Construction of Forward Operational Base in Siniaka Minia
- ▶ Daguella airstrip and park ULM airstrips; and construction of aircraft hangar
- ▶ Upgrade of Ibir – Daguella road
- ▶ Basic road infrastructure inside the SMFR
- ▶ Signpost along the periphery of the SMFR.

Required resources (people and other)

- ▶ No specific outside or third-party resources will be required for 2018 but in future ACN can be contracted to do the work.

Cost

Sinika Minia Faunal Reserve Infrastructure	2018
Purchase of containers x 2	\$6,000
Transport of containers	\$1,000
Modification of containers - fitting doors etc	\$2,300
Electrification - various (incl solar/generator)	\$18,000
Water reticulation - including drilling borehole	\$4,000
Internet	\$1,450
Daguela Airstrip	\$2,600
Hangar (12 x 9m) Roofed	\$10,500
Basic road infrastructure inside SMFR @\$35/km/485km	\$17,000
Signage along periphery	\$4,608
Radio repeaters at Daguela and near Chinguil	\$8,500
Tools	\$4,000
Furniture/office equipment/various FOB	\$2,500
	\$82,458

Park management & infrastructure

STRATEGY 4 – Upgrade the park’s existing fleet of vehicles

Discussion

Due to the large size of the Park and its periphery, and also due to the size of the tourism operation, the seasonal transport needs are substantial. The park management’s transport means and replacement needs are shown below. Due to an improved maintenance system, vehicles only need be replaced on a 6-7-year schedule. Problems with bad driving and general disregard for the proper use of vehicles will be addressed by allocating 1 driver per vehicle and by all drivers signing a “Code of Conduct”. Driving ability however remains a challenge and efforts continue to be made to improve this, with an accident report required for any damage to vehicles. As new vehicles are purchased older vehicles are recycled, either for spare parts or to the regional LE authorities.

Table 12: 2018 vehicle allocation and requirement – Park Management

Allocation	Vehicle	Condition	No	Replacement year				
				2018	2019	2020	2021	2022
Park Operations								
Fire fighting	Toyota Hilux	Poor, very old	1	-	-	-	-	-
Technical operations manager	Toyota L/C pickup	Good	1	-	-	-	-	-
School project	Toyota Dyna tipper truck (2t)	Good	1	-	-	-	-	-
Technical operational support	Mercedes Tipper truck	Good	1	-	-	-	-	-
Technical operational support	Truck Renault 30t	Good	1	-	-	-	-	-
Technical operational support	Grader, Caterpillar	Good	1	-	-	-	-	-
Technical operational support	Bulldozer, Caterpillar	Good	1	-	-	-	-	-
Technical operational support	Front-end loader, Caterpillar	Goods	1	-	-	-	-	-
Technical operational support	Tractor, Massey Furgeson 290	New	1	-	-	-	-	-
Technical operational support	Tractor, Massey Furguson 390	Old	1	-	45,000.00	-	-	-
SMFR technical support	Tractor, Massey Furguson 390	Needed	1	45,000.00	-	-	-	-
Wet season logistics	Boat, rubber	New	1	-	-	-	-	-

Allocation	Vehicle	Condition	No
Park Operations			
Fire fighting	Toyota Hilux	Poor, very old	1
Technical operations manager	Toyota L/C pickup	Good	1
School project	Toyota Dyna tipper truck (2t)	Good	1
Technical operational support	Mercedes Tipper truck	Good	1
Technical operational support	Truck Renault 30t	Good	1
Technical operational support	Grader, Caterpillar	Good	1
Technical operational support	Bulldozer, Caterpillar	Good	1
Technical operational support	Front-end loader, Caterpillar	Goods	1
Technical operational support	Tractor, Massey Furgeson 290	New	1
Technical operational support	Tractor, Massey Furguson 390	Old	1
SMFR technical support	Tractor, Massey	Needed	1

	Furgeson 390		
Wet season logistics	Boat, rubber	New	1
Law Enforcement			
Secteur (Gov)	Toyota L/C pickup	Reasonable	1
Delegue (Gov)	Toyota L/C pickup	Good	1
LE logistics	Toyota L/C pickup	Good	1
Mamba teams	Toyota Prado	To be replaced	3
Mamba teams	Toyota 105 S/W	Good	1
SMFR	Nissan S/W	Reasonable	2
LE management	Motorbikes	Reasonable	1
Used by GNNT	Motorbikes	Reasonable	6
Wet season Rapid Reaction	Motorbikes	Needed	6
Siniaka Minia ranger teams	Motorbikes	Needed	6
Wet season LE	Boat, aluminium	To purchase	1
Research & Monitoring			
R&M department	Toyota Prado	Former Mamba	1
Rhino monitoring	Toyota Prado	Former Mamba	1
Rhino monitoring (SP funding)	Motorbikes	To purchase	9
Community			
Community manager	Toyota L/C d/cab	Good	1
Community Coordinator	Motorbikes	Reasonable	3
Community OutReach program	Truck Mercedes 4t	Good	1
Tourism			
Camp Nomade logistics	Toyota Hilux d/cab	New	1
Tinga logistics	Toyota Hilux d/cab	New	1
Camp Nomade tourism	Toyota L/C game viewer	New	2
Tinga tourism	Toyota L/C game viewer	Reasonable	2
Tinga tourism (private)	Toyota L/C game viewer	Good	2
Camp Salamat tourism	Toyota L/C game viewer	Reasonable	2
Park Management & Administration			
Park management	Toyota Hilux d/cab	New	1
SMFR management and logistics	Toyota L/C d/cab	Good	1
N'Djamena logistics	Toyota Prado s/w	Reasonable	1
N'Djamena logistics	Motorbikes	Reasonable	4

Park management	Motorbike	Needed	1
SMFR management	Motorbike	Needed	1
		Total CapEx	

Law Enforcement								
Secteur (Gov)	Toyota L/C pickup	Reasonable	1	-	-	-	-	-
Delegue (Gov)	Toyota L/C pickup	Good	1	-	-	-	-	-
LE logistics	Toyota L/C pickup	Good	1	-	-	45,000.00	-	-
Mamba teams	Toyota Prado	To be replaced	3	50,000.00	25,000.00	-	-	-
Mamba teams	Toyota 105 S/W	Good	1	-	-	25,000.00	-	-
SMFR	Nissan S/W	Reasonable	2	-	-	50,000.00	-	-
LE management	Motorbikes	Reasonable	1	-	-	1,591.00	-	-
Used by GNNT	Motorbikes	Reasonable	6	-	4,635.00	4,774.00	-	-
Wet season Rapid Reaction	Motorbikes	Needed	6	9,000.00	-	-	-	-
Siniaka Minia ranger teams	Motorbikes	Needed	6	9,000.00	-	-	-	-
Wet season LE	Boat, aluminium	To purchase	1	12,000.00	12,000.00	-	-	-

Research & Monitoring								
R&M department	Toyota Prado	Former Mamba	1	-	-	-	-	-
Rhino monitoring	Toyota Prado	Former Mamba	1	-	-	-	-	-
Rhino monitoring (SP funding)	Motorbikes	To purchase	9	13,500.00	-	-	-	-
Community								
Community manager	Toyota L/C d/cab	Good	1	-	-	-	49,173.00	-
Community Coordinator	Motorbikes	Reasonable	3	-	-	4,774.00	-	-
Community OutReach program	Truck Mercedes 4t	Good	1	-	-	-	87,418.00	-
Tourism								
Camp Nomade logistics	Toyota Hilux d/cab	New	1	-	-	-	-	-
Tinga logistics	Toyota Hilux d/cab	New	1	-	-	95,481	98,345--	-
Camp Nomade tourism	Toyota L/C game viewer	New	2	-	-	-	-	-
Tinga tourism	Toyota L/C game viewer	Reasonable	2	-	-	90,000.00	-	-
Tinga tourism (private)	Toyota L/C game viewer	Good	2	-	-	-	90,000.00	-
Camp Salamat tourism	Toyota L/C game viewer	Reasonable	2	-	-	-	-	101,296.00

Park Management & Administration								
Park management	Toyota Hilux d/cab	New	1	-	-	-	-	-
SMFR management and logistics	Toyota L/C d/cab	Good	1	-	-	-	-	-
N'Djamena logistics	Toyota Prado s/w	Reasonable	1	-	36,050.00	-	-	-
N'Djamena logistics	Motorbikes	Reasonable	4	-	-	6,365.00	-	-
Park management	Motorbike	Needed	1	4,000.00	-	-	-	-
SMFR management	Motorbike	Needed	1	4,000.00	-	-	-	-
		Total CapEx		146,500.00	121,500.00	226,500.00	215,000.00	90,000.00

Motorized equipment operations

To enable all motorized equipment to function it is necessary to purchase fuel and lubricants and store sufficient quantities to see the park through the wet season when it is not possible to bring fuel to the park by heavy transport.

Lubricants are mainly purchased in N'Djamena but fuel can be purchased in bulk in Am Timan and delivered to Zakouma by fuel bowser.

Purchase additional vehicles

As indicated in table 13, the following new vehicles need to be purchased in 2018 with a brief explanation of the need:

- ▶ Anti-poaching vehicles for the Zakouma Mamba teams – The converted Prado vehicles being used at present are extremely good off-road due their coil-spring suspensions and light weight. However, these vehicles unfortunately have automatic gearboxes and electronic fuel injection that does not make them suitable for Zakouma wet season operations. In 2017 various alternative options have been tried and tested and it was found that Toyota Land Cruiser 100-series station wagons makes the best replacement vehicles. Apart from being extremely capable off-road with their coil-spring

suspensions these vehicles use the exact same engines and drive-trains as the Toyota Land Cruiser pick-ups being used in the park. 2 additional Toyota Land Cruiser 100 series Station wagons will be purchased for Zakouma in 2018 and 1 more in 2019.

- ▶ The Nissan station wagon in N'Djamena will be temporarily replaced by the 4th Prado in Zakouma for 2018 and be replaced with a new Toyota Hilux double cab in 2019.
- ▶ Tractor and accessories for SMFR – To put in a basic road network in Siniaka Minia, as well as to maintain this road network, a tractor and trailer will be needed. Additional accessories needed for road and airstrip maintenance will be a rotary slasher, a disc-harrow and a pull grader. The tractor will have to be strong enough to operate the mentioned equipment and will also need at least a 4-way hydraulic system to operate the pull grader.
- ▶ Motorbikes for Zakouma - The majority of the motorbikes being used in Zakouma has reached the end of their usable life and needs to be replaced. It is found that the 125cc Honda motorbikes currently in use is the most reliable, gives the best service and provides the best value for money. 6 of these motorbikes will be purchased in 2018 to replace unserviceable Zakouma motorbikes. Seeing that the Zakouma park management unit only have a single vehicle it is also suggested to buy a 175cc Yamaha motorbike to allow a cost effective 2nd vehicle while the main vehicle can be used for logistics and when consultants and guests visit the park
- ▶ Motorbikes for SMFR – In the initial stages of the development of Siniaka Minia a single vehicle supported by six 125cc motorbikes should be sufficient for the reserves law enforcement needs as well as 1 additional Yamaha 175cc for use by the FOM
- ▶ Motorbikes Rhino monitoring (SP) – In line with internationally accepted rhino reintroduction standards the rhino need to be monitored on a daily basis following release from the holding pens. 3 teams of 6 rangers/monitors will do this monitoring and each team will need 3 motorbikes (2 rangers / motorbike). The cost of these motorbikes will be covered under a special project. The rhino monitoring manager will need his own dedicated vehicle and will be issued with one of the Prado previously used by the Mamba teams.
- ▶ Wet season boats – At present 3 confiscated pirogues and 1 rubber boat with a 15hp outboard motor is being used for wet season logistics and the occasional patrol. Away from the main rivers like the Salamat the area is still inundated but very shallow making motorised boat movement impossible. To get a more versatile solution a flat-bottom aluminium boat with a surface drive engine will be purchased and tested in 2018.

Upgrade existing vehicles

Seeing that tourism activities only take place in the dry season dedicated tourism vehicles become available in the wet season. 2 of these vehicles will be used as logistical support vehicles at the Rhino and Attereidate FOBs. To enable these vehicles to travel in the wet season the current leaf-spring suspensions will need to be converted to coil-springs. The anti-poaching logistics vehicle, based at the park headquarters, has tested one of these coil-spring conversion in 2017 with great success.

Purchase of dedicated recovery and maintenance equipment for all vehicles

All vehicles need to be equipped with a comprehensive list of equipment, including recovery equipment, and where vehicles do not currently have the necessary equipment it will need to be purchased. The following list of equipment will be issued to each vehicle:

- ▶ Puncture repair kit
- ▶ Jumper cable
- ▶ Hand pump
- ▶ Tyre pressure gauge
- ▶ Basic tool kit for field repairs
- ▶ High-lift jack with base plate
- ▶ Spade
- ▶ Machete/Axe
- ▶ Tow rope 2000kg

Recycling of existing vehicles

With the purchase of the above mentioned new vehicles the following vehicles can be recycled into the following applications:

- ▶ The 3 Toyota Prado Mamba vehicles will initially be used for Mamba and then become research and monitoring vehicles once replaced by Land Cruiser 100 series station wagons
- ▶ Former Zakouma motorbikes to be used for mixed patrol teams (assistance to regional Government forces)
- ▶ Camp Nomade Prado vehicle to be used in N'Djamena to replace the Nissan that will be converted to an anti-poaching vehicle for SMFR
- ▶ For SMFR a second operations vehicle will be provided from ZNP (the old N'Djamena Nissan will be converted into a Mamba vehicle) as the anti-poaching vehicle (also a converted Nissan) allocated to it will spend most of its time on LE activities

Goals & measureable outcomes

- ▶ Vehicle fleet with sufficient vehicles to ensure efficient park operations
- ▶ Existing vehicles found to no longer be suitable to be employed in alternative applications
- ▶ All vehicles to be equipped with the necessary equipment

Required resources (people and other)

No specific outside or third-party resources will be required.

Table 13: Equipment required per vehicle.

Item	Cost
High lift Jack 3t	\$ 93
Jumper Cable H/Duty	\$ 24
Hand pump	\$ 18
Tyre pressure gauge	\$ 7
Tow Rope 2000kg	\$ 10
Spade	\$ 9
Machete/Axe	\$ 6
Puncture repair kit	\$ 9
Basic tool kit	\$ 34
	\$ 210

Costs

Vehicle purchases	
Mamba vehicles – 2 x Land Cruiser 100 series station wagons:	\$50,000
Tractor and accessories for SMFR:	\$42,000
Coil-spring conversions for 2 tourism vehicles:	\$30,000
Motorbikes management – 2	\$8,000
Motorbikes Zakouma – 6	\$9,000
Motorbikes SMFR – 6	\$9,000
Motorbikes Rhino monitoring (SP) – 9	\$13,500
Flat-bottom aluminium boats with surface drive engines 1 initially to test suitability	\$12,000
Total	\$168,500
Fuel and lubricants	\$189,540
Comprehensive vehicle equipment:	
Vehicle equipment for 25 vehicles	\$5,250

Park management & infrastructure

STRATEGY 5 – Put in place the necessary vehicle management system

Discussion

A big part of operational expenses can be attributed to vehicle repairs. To better control the park's vehicle movements and to maintain the park's vehicle fleet for maximum efficiency, thereby limiting the cost of vehicle repairs the following measures will be introduced / enhanced in 2018:

Vehicle tracking devices

Key Telematics vehicle tracking devices will be installed in all park vehicles in 2018. The tracking devices allows the operations centre / operations manager to monitor the following:

- ▶ Driver behaviour; speeding, over-revving, harsh breaking, over-idling.
- ▶ Vehicle usage; driving outside of permitted hours, personal use of vehicles, impractical logistical movements.
- ▶ Setting of reminders for maintenance, oil replacement and others.

An enhanced preventative vehicle maintenance schedule will be introduced to ensure all vehicles are regularly serviced, problems identified before costly repairs are needed, vehicle downtimes are reduced and the lifespan and service of these vehicles are extended. The vehicle maintenance policy, based on the actual needs and recommendations of the manufacturers, will include:

- ▶ Daily vehicle monitoring procedures;
- ▶ Acquiring a stock of frequently used spare parts;
- ▶ Apply a maintenance management system that integrates:

- Movement control
- Driver accountability
- Daily vehicle inspections
- Post-mission duties and inspections
- Fuel management
- Regular service intervals

Where necessary fit-for-purpose tools and equipment needs to be purchased or upgraded to enable the mechanic and workshop staff to do repairs and maintenance on all vehicles and equipment.

Goals & measureable outcomes

- ▶ Installation of vehicle tracking devices
- ▶ Implementation of vehicle management policy
- ▶ Sufficient equipment in working order to maintain and repair the parks vehicles and equipment.

Required resources (people and other)

- ▶ No specific outside or third-party resources will be required.

Costs

Keytelematics vehicle tracking in all park vehicles	
Tracking devices (\$300 for 29 vehicles/trucks)	\$8,700
iButton readers (\$50 for 29 vehicles)	\$1,450
Identification keys (30 drivers)	\$150
Consultant travel costs and installation	\$2,000
Total	\$12,300

Scheduled vehicle maintenance costs	
\$1,579 per vehicle per year (20 vehicles)	\$38,264
Motorcycle maintenance costs (10 motorbikes)	\$6,000
Tractor maintenance costs (2 tractors)	\$11,400
Generator maintenance costs (8 generators)	\$14,400
Grader maintenance costs (4 graders)	\$17,400
	\$87,464

Park management & infrastructure

STRATEGY 6 – Reinforce the park's aerial support capacity

Discussion

Zakouma

The size of the ecosystem to be covered and its remoteness render the use of a small aircraft mandatory in Zakouma. From 2011 to 2016 the park had two aircraft available for use, the park's Cessna 182 and the previous park manager's Cessna 180. The two aircrafts were primarily used for aerial surveillance, anti-poaching and logistical support. Because elephant collars are now used to assist with the location of the animals a large portion of flying is logistics flying to provide support to the anti-poaching teams on the ground.

In 2017 the park only had access to the Cessna 182 and after this was grounded for 5 months due to damage caused by a hard landing the park struggled to not only fulfil its operational needs but the morale of the rangers dropped after they could not sufficiently be supported in the wet season. A replacement aircraft was leased but was out of action for extended periods due to various problems.

For 2018 it is suggested to purchase a small 2-seater aircraft for the Siniaka Minia Faunal Reserve and to obtain a different aircraft for Zakouma to replace the current Cessna 182. Even though the Cessna 182 is an excellent aircraft the availability of AVGAS in Chad, and the prohibitive cost of AVGAS if it can be imported, does not make this aircraft the most suitable option for Zakouma. The following options have been investigated to find the most suitable option for Zakouma:

1. C182 SMA using Jet A1 at an operating cost of \$ 130.60/hour – too weak and too many problems caused by the vibration of the SMA engine;
2. C182 with small 230hp engine using Mogas at an operating cost of \$ 147.50/hour – too weak for the short-field work needed in Zakouma;
3. C206 turbine using Jet A1 at an operating cost of \$ 248/hour – found to be the most suitable aircraft for the park;
4. C182 P. Ponk 300hp using Avgas at an operating cost of \$ 332.50/hour – this is what is currently being used but it is the most expensive option and the Avgas is extremely difficult to source.

Based on this it has been decided to submit a Special Project to obtain a Cessna 206 Turbine.

Although the initial purchase price of a turbine driven plane is high there is a substantial benefit to having a 6 seater. Due to the turbine engine only needing replacement after 3,500hrs the costs/hr (excluding purchase price) are not that much more of a C182 (even though it uses twice the fuel/hr). We would also be using less hrs/year due to faster operating speeds, larger load capacity (two trips per scout team as opposed to one). Other advantages include:

1. With the recent signing of the agreement to manage Siniaka Minia Faunal Reserve (and other) and with AP establishing a base there, there will be greater need for a larger carrying capacity aircraft to support it, particularly in the wet season as access via roads will not be possible for up to 3 months/year.
2. More load space on logistics trips to N'djamena – currently need to use a vehicle to transport much of the luggage/food supplies (a two day trip each way).
3. Proper use of aircraft – down to 400hrs with savanna also being able to contribute to some of the surveillance work. Long term a second savannah for Zakouma would mean that we could even drop the no of hours required further as the savannah would be able to do all the surveillance work.
4. Secondary backup to loss of MAF contract – last year MAF stopped operating and we had to make alternative arrangements to fly guests into Zakouma at great cost. The C182 that we are currently renting as well as a replacement for our plane has also been grounded now due to illegalities on the part of the owner.
5. With a scenic trip part of the package for tourists to Camp Nomade the use of a C206 is a far better plane than the 182 – not only from a safety perspective but also comfort.

Table 14: Pros and Cons of the Cessna 206 turbine.

PROS	CONS
Reliability of turbine versus piston engine	High purchase cost
TBO (Time before overall): 3500 hrs vs 2000 for piston engine	Increased fuel burn
Lighter engine so increased useful load	Very few models on the market
Increased power = safer for take-off on shorter bush strips	
Easier and less frequent maintenance	
Markedly increased performances so will allow a reduction of hours	
Much more pleasant and professional aircraft to fly for Camp Nomads guests/donors	
Extensively used for law enforcement and aerial observation by US Customs and Border Patrol, Drug Enforcement Agency and other gov. Agencies due to high power/high loading/variable speeds	
Runs on JetA1, cheapest fuel, always available	
One currently available, very good condition done 900hrs at \$ 559,000. Cost of a new one is \$1M	

Coupled with this option is the secondary purchase of a Savannah LSA plane in one or two years' time to focus exclusively on surveillance work within ZNP. That would leave the C206 purely for logistical work and would probably halve the no of hours to be flown thus reducing the yearly operational costs even further.

Siniaka Minia Faunal Reserve

The most suitable aircraft for the current SMFR application will be a two-seater Savannah ULM – used with great success in Chinko. It has a slightly larger carrying capacity and fuel load than the Foxbat as well as an all aluminium body (unlike the foxbat), important in wet humid conditions. With the backup of the C206 from Zakouma for logistics the Savannah will be used primarily for aerial surveillance. The threat of nomad incursions from the south, west and east is very real from October onwards and in the late dry season aerial support in finding the groups and sending in quick response teams will be critical in securing the landscape. It will also be used to assist where possible on Zakouma surveillance operations.

Goals & measureable outcomes

- ▶ Finding a buyer for the parks Cessna 182.
- ▶ Finding a donor to purchase a Cessna 206 turbine.
- ▶ Purchasing a Savannah ULM for SMFR.

Required resources (people and other)

- ▶ No specific outside third-party resources will be required.

Costs

- Aircraft operating costs
40% of the flying hours will be assigned to logistics \$49,600

Table 15: Aircraft operating costs.

Cessna 206 Full maintenance (including fuel and insurance) cost over five year period for Greater Zakouma NP						
	2018	2019	2020	2021	2022	Total
No of hours/year*	500	500	500	500	500	
Cost/hr**	248	260.4	273.42	287.09	301.45	
	\$124,000	\$130,200	\$136,710	\$143,546	\$150,723	\$685,178
* Hours based on allocated 420hrs/year and 80hrs for certain logistical/supportive work for Siniaka Minia Faunal Reserve						
** Based on fuel cost of \$130/hr and maintenance of \$118/hr. Includes factored in replacement cost of engine.						

- Cost of a Cessna 206 Turbine covered under Special Projects.
- Cost of a Savannah LSA to be used in the Siniaka Minia FR covered under Special Projects.

Park management & infrastructure
STRATEGY 7 – Upgrade the park’s existing communication infrastructure

Discussion

There is no cell phone coverage in Zakouma and an integrated, high performance communications system is essential to achieve effective law enforcement and efficient park management. It significantly reduces intervention time when law enforcement issues are identified by the guards, the plane or the local population. Such a system is also important to maintain high morale amongst staff and facilitates information gathering.

The integrated communications system includes the following:

- ▶ V-Sat satellite internet communication to allow the smooth operation of the park's operation centre, data based communication like WhatsApp and Skype, priority email communication and a dedicated VOIP (voice) telephone connection
- ▶ C-band internet communication for general email communication as well as a back-up system for the V-Sat
- ▶ Emergency satellite telephone communication
- ▶ An HF radio network for longer distance communication outside of the repeater system
- ▶ A digital VHF radio network through a repeater system
- ▶ An analogue VHF radio system used in villages around the park as an early warning system

In the past the communications infrastructure has been significantly upgraded to include a digital VHF system with GPS tracking capability which consists of four repeaters, one in Goz Djérat with the antenna mounted on a 45m mast, one on the hill at Ibir, one on a 45m mast in Attreïdate FOB and the fourth on a 45m mast in Rhino FOB, to improve communication in the core dry season elephant range to the south of Zakouma where there was previously a shadow. Because of problems with Bone village, the Bone repeater was move from the highest point in the park to Ibir hill. This resulted in quite an extensive shadow in the lower areas along the Salamat River and behind Bone Hill but was fixed with the addition of the repeater at Rhino. All field teams, control posts and monitoring teams have VHF hand-held radios, with mobile stations installed in all vehicles – we currently operate 46 handheld, 13 mobile and 4 mobiles in the control room. VHF and HF radios have also been installed in 19 villages and regional law enforcement posts throughout the extended elephant range to allow for quick communication with the park as well as various LE posts in the periphery. The village VHF radios have a dedicated channel which ensures private communication with the control room. Satellite phones are used only sparingly and only during the wet season in non-radio-coverage areas.

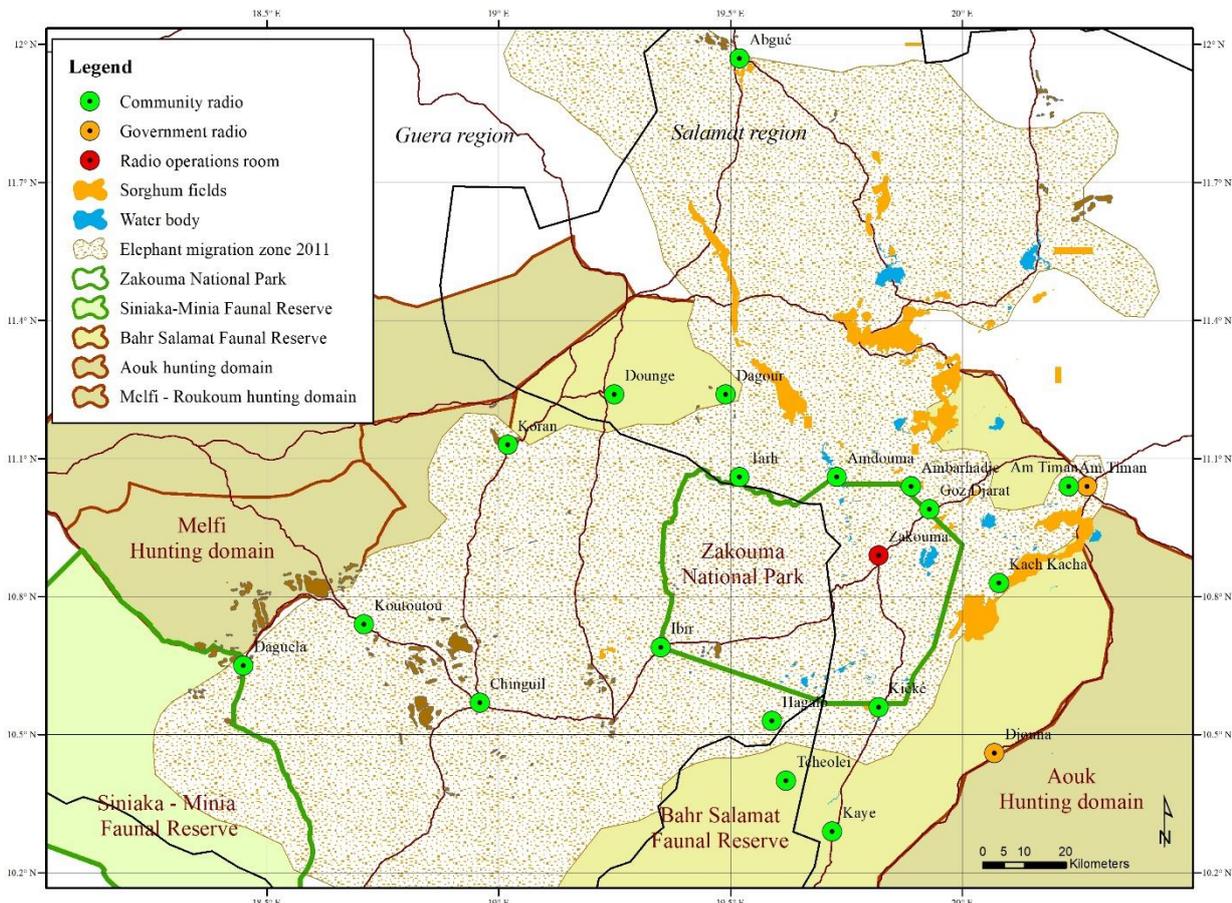


Figure 10: Map showing the radio communication points.

The map in figure 10 indicates the villages and regional offices which have radio communication with our control room at park headquarters. To ensure the radio communication network operates at its optimum the following operations / improvements are envisaged:

- ▶ Radio communication upgrade and maintenance
 - Install a new repeater at Daguela/Rim to provide coverage for SMFR and a second one at Chinguil to provide the link to ZNP.
 - Purchase additional handheld devices, base radios for vehicles and replace unserviceable batteries on existing devices
 - Replace all unserviceable airband radios. Airband radios are used to communicate from the aircraft to the ranger teams during law enforcement operations and also for similar use during elephant collaring operations
 - All HF radios in use date back from the EU managed CURESS era and are mostly unserviceable and will be replaced with VHF radios with higher antennas
 - The current main Zakouma repeater setting is at Tinga which proves to be problematic in the wet season when Tinga is inundated with water and access to Tinga camp extremely difficult. This system will be moved to the park headquarters where a mast will be erected away from the airstrip
- ▶ Satellite phones are used as back-up in cases of emergency
 - Ensure serviceable satellite phones are available in the following places; operations centre, aircraft and for the PMU
 - Ensure all satellite phones have the necessary airtime to allow for emergency communication
- ▶ Operating of the dual internet network; existing C-Band plus new V-Sat system
- ▶ To prevent unnecessary bandwidth use an intranet system allows for internal communication and storage / back up of data. This intranet should include:
 - A dedicated server with a backup system
 - Wireless communication between all stations and the server
 - Up-to-date equipment, like laptops with the necessary programs to access this system
 - A maintenance contract to maintain and repair the system

Goals & measureable outcomes

- ▶ All aspects of the integrated communications system in place
- ▶ Necessary maintenance contracts in place to provide for the smooth operation of the system

Required resources (people and other)

- ▶ Outside service provider to provide internet systems
- ▶ Outside service provider to provide radio communications system and assistance when needed (preferably on a retainer)
- ▶ Specialist IT service provider to offer IT maintenance and assistance when needed

Cost

Radio communication equipment	
HF radio replacements with VHF (8)	\$48,443
Handheld replacements and additions (18)	\$10,026

Handheld batteries (15)	\$780
Airband replacement (5)	\$2,000
HF for Aouk (radio and operator)	\$4,760
DM radios for vehicle	\$1,923
Total	\$67,932
Telephone communication annual maintenance costs	
Telephone costs - N'Djamena	\$6,316
Satellite phones airtime (\$500 x3)	\$1,500
Skype airtime	\$100
Total	\$4,207
Internet operating costs	
N'Djamena mobile internet (70%)	\$3,537
N'Djamena internet system (70%)	\$20,632
Zakouma Castor internet system	\$8,000
Total	\$32,169
Vsat installation	
Annual registration costs	\$3,341
Import costs	\$360
Flight technician	\$2,000
Unforeseen additional equipment	\$3,000
Total	\$8,701
Communication system for Siniaka Minia	
Repeaters at Daguella and Chinguil	\$8,500
Purchase BGAN and subscription	\$1,450
Annual internet data and talk-time	\$3,600
Total	\$13,550
Overhaul IT system Zakouma HQ in 2018	
Microsoft server including software	\$7,500
Hardware peripherals (LAN cabling, hard-drives etc)	\$3,000
IT consultant, remote assistance, 2 site visits and flights	\$9,000
Replacement laptops incl. software (3)	\$3,000
Annual anti-virus licenses (30)	\$750
Total	\$23,250

6.2 Law enforcement

The overall objective of the law enforcement (LE) activity is to provide an anti-poaching presence that is sufficient to protect the existing ecosystem, including all its fauna and flora, in the park and its periphery areas and to provide a secure environment for the reintroduction of new species. Effective law enforcement also has the added benefit of providing an extra layer of security for, and communication with, surrounding communities. This is perceived by local communities as one of the major benefits of the park’s activities and has resulted in improved relations with many communities.

The core law enforcement objectives and strategies are summarised in the following table, and are discussed in further detail below:

Law enforcement	
Core objectives	Core strategies
1. Provide effective security in the Greater Zakouma Ecosystem, to protect all fauna and flora species and in particular the threatened elephant population and reintroduced rhino population.	<ul style="list-style-type: none"> - Carry out an integrated law enforcement strategy and maintain a well-trained, equipped and motivated field force of around 112 guards; - Aircraft capability and wet season airstrips - Maintain a performing integrated communications system
2. To maintain efficient relations with all law enforcement and local authorities in the periphery	<ul style="list-style-type: none"> - Collaborate closely with GNNT, the local environmental authorities, etc.
3. To run a reliable information gathering system to enhance the law enforcement effort in the greater Zakouma area	<ul style="list-style-type: none"> - Maintain an Intelligence gathering system including a data base and radios in key villages - Develop a relationship with the authorities and NGO’s regarding the anti-ivory trade
4. Ensure effective prosecution of offenders	<ul style="list-style-type: none"> - Collaborate closely with the judicial authorities

Law enforcement
STRATEGY 1 – Carry out an integrated Law Enforcement strategy

Discussion

i. Integrated LE strategy

Seasonal and geographic concerns

The Greater Zakouma Ecosystem is influenced by two seasons – wet and dry. Within these two seasons there are 3 different stages or periods which are directed by the annual wildlife movements.

- The first stage is *dry season* (October – end May/June) when elephants and other wildlife utilize ZNP with some minor outward movement, usually not more than 10km from the park boundary.
- The second very distinct stage is the *mid wet season*, usually August, with many animals spending this time outside the park. (Note: previously the elephants migrated extensively into these northern and western areas towards Siniaka Minia, however since 2013 this has not

happened, and the protection strategy has thus been adjusted accordingly). This is also a time when the elephants move outside of their core dry season area within the park, thereby increasing the area needed for protection substantially. Since 2014 the elephants did undertake short excursions outside the park boundary at this time, but not further than 30km away from the park boundary.

- The last phase is the *transitional period*, which is dependent on rainfall, where the actual movement or migration of animals takes place to and from the northern and western core areas, or to areas within the park outside of their core area in the east. This takes place (i) at the beginning of the wet season when animals move away from ZNP (June/July) and (ii) at the end of the wet season when the animals return, usually September/October.

Due to this, different law enforcement strategies have to be applied during these different periods with adequate logistical support and bases to ensure the coverage needed. These strategies are continually adjusted and improved, as the elephant movements and poaching threats change. Being proactive and one step ahead of the poacher is critical. Very little is known about SMFR and the extent of animal movements so in future the SMFR strategy will change as knowledge on the system increases.

The change in behavior of the elephants, with long migrations no longer taking place, is thought to be attributed to a combination of several factors; i) the elephants having learnt that Zakouma is safe and secure, ii) with a much smaller population there are no longer density dependent drivers to their migration, iii) the elephants may be less inclined to make long migrations now that they are breeding again and have many young calves to consider, iv) the migrations were possibly driven by poaching pressure rather than environment pressure (see <https://www.youtube.com/watch?v=wn56eKvbqcs> for the tragic movements of ‘Annie’ before she was shot and killed) and, v) historical movements may have been, at least in part, a social function, where ranges would have overlapped with other (now extinct or much reduced) elephant populations.

The increase in fishing on the edge of the park as well as illegal fishing within the park is also a huge threat to the ecosystem as the park is a key breeding ground for fish and the high fish density is a key component in the food chain. Fisherman can also provide information to elephant poachers on the whereabouts of elephant herds and need to be contained.

Patrol strategy

The patrol strategy is based on the following main principles:

- a. Centralised daily deployment and control - Radio operators together with senior anti-poaching staff control all security operations 24/7 throughout the year from the Zakouma Operations Control Room with constant security awareness for the wildlife, park visitors/staff and park neighbours being the main focus.

The operations center is key to the success of the anti-poaching in the greater Zakouma area and it is from this Operations Control Room that all collared elephants are monitored, radio movement is monitored (VHF radios have built-in GPS's), weather is monitored and communication is possible with the aircraft. Patrol deployment is decided twice daily, in the morning and afternoon, on the base of known and predicted elephant distribution and movements and any threats according to season or real time information received (e.g. fishing and illegal grazing during the dry season). It is required that at least 3 people be present in the control room when the daily decision is made on patrol deployment. Further improvements have been made to the Operations Control Room with the introduction of the Domain Awareness System, a digitized map displaying all layers of interest (topographic, roads, infrastructure, etc.) as well as all variable input (elephant locations based on satellite collar data, patrol locations based on the digital radio network and all threats based on information received). The digitized data displayed on a “smart” whiteboard is duplicated with magnets on a magnet board mounted alongside the smart screen and updated 4 times per day to ensure all data is current in case of a power or systems failure.

- b. ‘Predictable but unpredictable’ system - Guard families and other staff should fully understand and

predict when and in what capacity a guard goes on duty or patrol, however the day-to-day deployment should be completely **unpredictable** and controlled by the control room on an ad-hoc basis, depending on elephant movements and all other information available to management on that day. There should be ‘routine but no routine’ and family and park neighbours should be constantly in the dark as to where patrols will appear or operate. New instructions are given twice daily which is totally feasible with good radio equipment and GPS technology. No one should be able to predict operations for longer than 2 days but all should be aware of their presence in the field. Such security thinking needs to be constantly enforced until it becomes a ‘**predictable but unpredictable**’ system.

- c. Dry season strategy – Due to Zakouma holding the only protected surface water in the entire greater Zakouma eco-system all water dependent wildlife are concentrated inside the park in the dry season. Access to the entire park is possible in the dry season and reaction times relatively quickly due to a good road network. Even though some elephant poaching has occurred in the park during the dry season in recent years the elephant poaching threat is at its lowest at this time of the year. The dry season is also the time that the nomads, migrating pastoralist from further north in the country, are present around the park. The main threats at this time of the year is illegal grazing inside the park, the poisoning of predators by nomads around the park as well as illegal fishing inside once the remaining pools start to dry out. From 2018 all anti-poaching teams will be deployed from the Zakouma park headquarters in the dry season on a rotation of 8 days on duty and 4 days on rest. With 9 teams rotating on patrol every 4 days this rotation strategy ensures a 67% effectiveness with 2 teams in the field for every 1 team on rest.
- d. Intermediate season strategy – The intermediate season strategy is very similar to the dry season strategy but access to some areas of the park becomes difficult and the threat increases with wildlife starting to move around more, nomads starting to move in or out of the area and fisherman getting access to certain parts of the park.

To prevent the illegal fishing in the park at this time of the year a boat was purchased and training given to the Mamba teams. The boat is however not ideal and will be replaced with a flat-bottom aluminium boat with a surface-drive engine to enable the park to access the areas used by the fishermen in this period. The regional authorities have also been made aware of the problem of large scale commercial fishing outside of the park and large sweeps were undertaken in the past to rid the region of these displaced Lake Chad fishermen.

- e. Wet season strategy - The western part of the Park is completely cut-off from headquarters by the Salamat River system during the wet season from June to November and the two Forward Operating Bases (FOBs), built before the 2016 wet season to the west of the Salamat River, plays an integral part in the wet season strategy. Each FOB has a stable block for eight horses, accommodation for guards, a storeroom, water collection gutters and tanks for rainwater storage, a repeater station, solar power for charging equipment and an airstrip. The roads were improved between the two posts, and to the south-western park entrance at Ibir allowing some movement of vehicles. The FOBs ensure that the horse teams can operate from the bases with a lighter load, and ensure a presence around the elephants at all times. Seeing that the elephant movements are unpredictable it is necessary for the wet season strategy to have teams based at these FOBs for the entire wet season and these teams operate on a 20 day on-duty, 10 day off-duty rotation. To give the horse sufficient rest the 20 day on-duty is divided into 8 days patrol, 4 days stand-by followed by another 8 day patrol.

An airstrip at Korom East with a temporary field base at the airstrip is manned by Government forces (GNNT) and one Zakouma group leader (Collaboration with local Government forces is discussed in detail under Strategy 2 below). This team operates with motorbikes on newly opened tracks and are very effective. This system also allows the area to be occupied and protected all year round, with benefits for the dry season strategy as well. The teams based at the park HQ ensure protection of the elephants when they are on the eastern side of the Salamat River.

Bases have also been constructed outside of the park in strategic places in case the elephants start migrating out of the park again. Contact is maintained with the villages in the far north and west, and flights are done there at times, to show support and to keep relationships in the event the elephants start to migrate again.

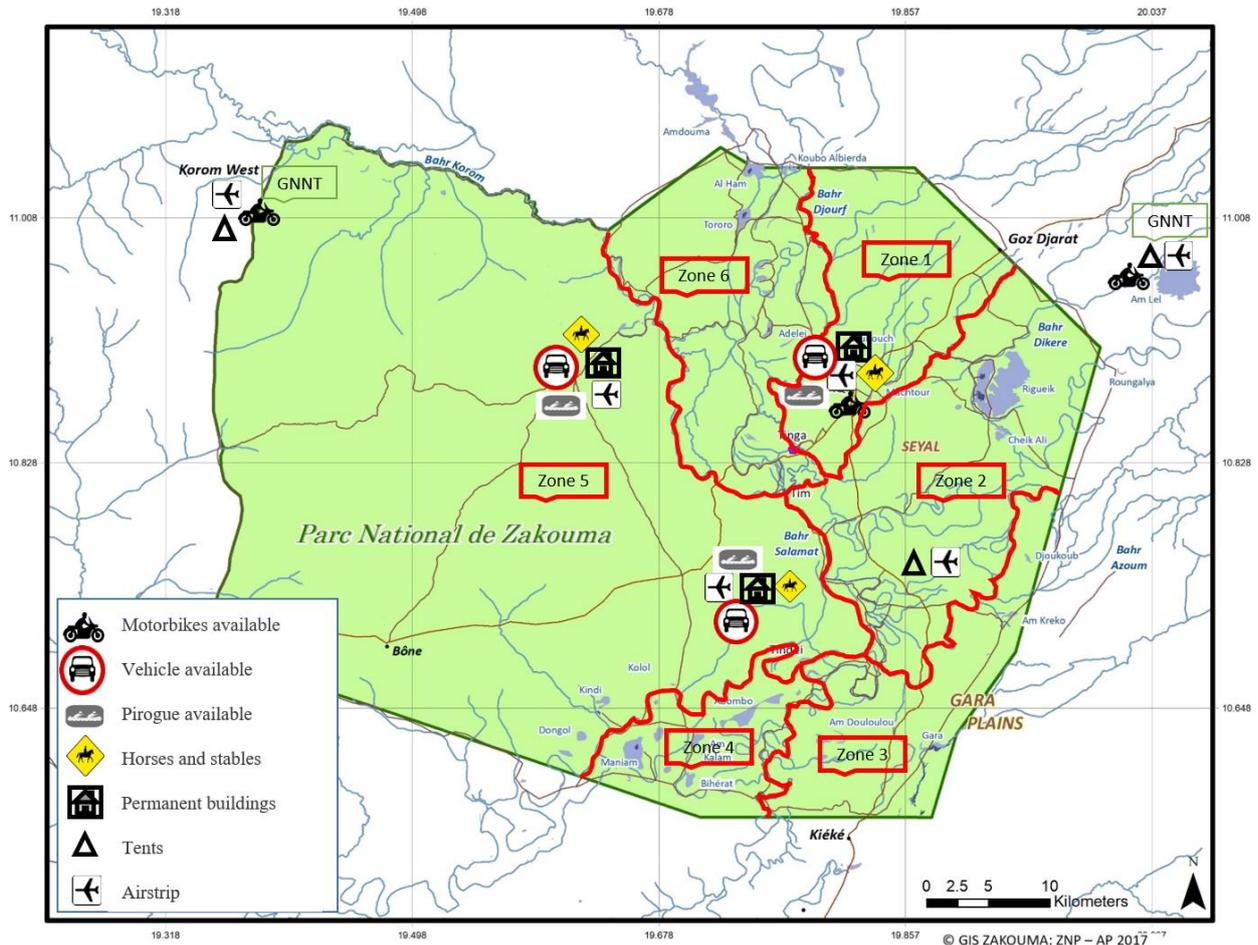


Figure 11: Map of wet season strategy.

As can be seen from figure 11, the park can be divided into 6 zones that is isolated from each other by impassable rivers and/or wetlands. The wet season strategy, per zone, is as follows:

Zone 1:

The elephants have been spending a lot of time in this zone in past years and access to most of the zone is possible.

- ▶ The following teams are deployed from the park headquarters
 - 2 alternating horse teams working on a 10 days on-duty, 5-day rest rotation
 - 1 Mamba intervention team on stand-by with a vehicle
 - Other Mamba teams rotated from Zakouma where needed depending on elephant movement and if possible using their own vehicles
- ▶ Daily surveillance flights are conducted from the all-weather airstrip at the park headquarters
- ▶ Anti-poaching logistical vehicle based at park headquarters
- ▶ Boats operated when necessary from the park headquarters on the Salamat River at Tinga
- ▶ Standby motorcycles based at the park headquarters should the elephants leave the park and motorbikes needs to be dropped in strategic areas of the park

Zone 2:

The elephants have spent a lot of time in this zone in past years and access to this zone is possible by air or

by vehicle.

- ▶ While the elephants are in this zone, daily surveillance flights are conducted from the all-weather airstrip at the park headquarters. The airstrip at Rassal Ap can be used most of the wet season to resupply or rotate teams when they are protecting the elephants in this zone.
- ▶ A storage facility will be built at the Rassal Ap airstrip to leave camping equipment, fuel and horse food for the wet season.
- ▶ When the elephants are in this area they can be protected by sending teams per vehicle via Am Timan and entering through the east of the park.

Zone 3:

Even though the elephants sometimes spend a bit of time in this zone the park does not have access to this zone in the wet season. Poachers can however reach Kiéké village by boat from the south and walk in. Possible sites for an airstrip near Kiéké village have been explored but nothing suitable found.

Zone 4:

The elephants spend very little time in this area but this zone is accessible from the Rhino FOB by horses or by pirogue / boat.

Zone 5:

The elephants have spent time in this zone in the past and the 2015 poaching incident necessitated the development of 2 Forward Operational Basis.

Wet season operations from the Rhino FOB includes:

- ▶ Ranger team – 1 horse team is posted from Zakouma (Goz Djérat based) to the FOB for the entire wet season with horses staying at the FOB while the teams rotates out for leave. This team operate on a 20 day on-duty, 10 day off-duty rotation and to give the horse sufficient rest the 20 day on-duty is divided into 8 days patrol, 4 days stand-by followed by another 8 day patrol.

Additional Mamba teams are rotated into this area if the elephants are in this zone.

- ▶ 1 Toyota land Cruiser pick-up is based at this FOB for the entire wet season to provide logistical support. In future this vehicle will undergo a coil spring conversion to allow for better ground clearance and fitted with larger mud-tyres for better performance under wet conditions. 1 Mamba patrol vehicle is also based at this FOB for the wet season to provide Mamba teams rotating through the base with transport.
- ▶ 1 pirogue is based at Rhino for the wet season. This pirogue assists with team deployments and patrolling duties, when necessary, and can also assist with logistics to the Zakouma headquarters if needed.
- ▶ Fuel and horse food (grass and millet) is stockpiled at the FOB before the start of the wet season and before the FOB is cut off from the Zakouma HQ by road due to the flooding Salamat River.

Wet season operations from the Attreidate FOB includes:

- ▶ Ranger team – The 2 Ibir based horse teams are posted to the FOB for the entire wet season with horses staying at the FOB while the teams rotates out for leave. These teams operate on a 20 day on-duty, 10 day off-duty rotation and to give the horse sufficient rest the 20 day on-duty is divided into 8 days patrol, 4 days stand-by followed by another 8 day patrol.

Additional Mamba teams are rotated into this area if the elephants are in this zone.

- ▶ 1 Toyota Land Cruiser pick-up is based at this FOB for the entire wet season to provide

logistical support. In future this vehicle will undergo a coil spring conversion to allow for better ground clearance and fitted with larger mud-tyres for better performance under wet conditions. The park's 1 4x4 tractor is also based at this FOB to assist with logistics at the peak of the wet season.

- ▶ 1 pirogue is based at Attreidate for the wet season. This pirogue assists with team deployments and patrolling duties, when necessary.
- ▶ Fuel and horse food (grass and millet) is stockpiled at the FOB before the start of the wet season and before the FOB is cut off from the Zakouma HQ by road due to the flooding Salamat River.

Wet season operations from the Korom West airstrip includes:

- ▶ A mixed patrol team made up of Regional Government forces (GNNT) and a Zakouma team leader is based at this airstrip on the parks western boundary. This team uses motorbikes for transport and are supplied with tents to protect them against the rain. Fuel and horse food are also to be stockpiled at the airstrip in case of elephant movement into this area.

Zone 6:

This zone is not accessible from the park headquarters but is accessible to poachers on horseback from the north. The current airstrip at Al Ham is not suitable and seeing that the elephants sometimes move through this zone it is important to open an airstrip near Adelei to allow for teams to be moved into this area. A storage facility will also have to be constructed to allow for the storage of horse food and motorbike fuel.

Greater Zakouma ecosystem:

A 2nd mixed patrol team, made up of Regional Government forces (GNNT) and a Zakouma team leader, is based at the Am Lel airstrip to the north-east of the park. This team uses motorbikes for transport and are supplied with tents to protect them against the rain. The main reason for the positioning of this team is to stop bushmeat poaching from Am Timan in the wet season when antelope species migrate out of the park.

Even though the elephants have not migrated out of the park since 2013 it is necessary to plan for such an event. In preparation of the elephants leaving the park into the greater Zakouma eco-system all airstrip outside of the park are inspected before the wet season. 6 motorbikes are kept on standby at the park headquarters and should it be necessary to follow the elephant out of the park teams and supplies will be flown to the nearest airstrip. Once a team is operating in a particular area outside of the park both horse and motorbike teams can be resupplied by air with rations for the rangers as well as supplementary food for the horses.

- f. Siniaka Minia extension - In the recent extension of the partnership agreement signed between the Government of Chad and African Parks the Siniaka Minia Faunal Reserve has been defined as part of the greater Zakouma ecosystem. From 2018 onwards a law enforcement compliment of 18 rangers (3 teams of 6 rangers) will be based in Siniaka Minia. A 10 day on-duty, 5 day rest rotation staggered to leave every 5 days will allow for a 67% effectiveness with 2 teams in the field an 1 team on rest at any given time.

At present there are some Government rangers based at Daguella. These rangers will be assessed for suitability and additional rangers will have to be selected and trained from nearby communities to fill the ranger complement. Initially an anti-poaching manager and radio operator from Zakouma will be posted to the Siniaka Minia FOB to be built near Daguella, to assist the Siniaka Minia Field Operations Manager. The ranger teams will be deployed by vehicle or motorbike and apart from anti-poaching patrols in the reserve the main task of these teams will be to stop nomads from entering the in the dry season. As more information becomes available on the illegal activities threatening the reserve a more detailed LE strategy will be developed. Currently the reserve has very little area integrity as can be seen from Satellite Imagery – well established cattle paths can be seen moving north to south from villages both within and without the reserve towards the permanent dry season water along the Bahr Siniaka and Bahr Minia, and agricultural expansion in the park around Rim and Daguella has greatly increased in recent years.

Primary threats to SMFR:

- i. Illegal entry and grazing - The greatest threat to the Reserve is that from nomads moving from the north (Central Chad) and south (Central African Republic) into the reserve for grazing/water. With most of the permanent water along the south-western boundary in the dry season (the park drains NE to SW) the nomads need to move from the north through the entire park to reach it. Melfi Hunting Block is north of SMFR so it is assumed the nomads mostly bypass it (They are prevented from entering by guards employed by Melfi) and move in through the NW and NE corners.
- ii. Bushmeat poaching – both for market and subsistence by both nomads and villages around the park.
- iii. It is assumed there is targeted poaching (by poison) of predators due to HWC with cattle by the Nomads as happens elsewhere.

Initial efforts will focus on early detection of trespassing nomads and mobilization of guards to stop and sensitize them before they enter the reserve. Close collaboration with Melfi Hunting Block (who are employing similar methods) will be undertaken and information sharing will be critical to keep track of external threats.

Infrastructure – this was discussed in more detail in 6.1. The first year’s operation will focus on an FOB in/near Daguella followed by further expansion as is necessary. A more detailed LE plan on SMFR will be developed during our first year on the ground but for purposes of this plan the following objectives will be targeted:

- 1) Efficient and well-managed informer network through close collaboration with nearby villages.
 - 2) Strategically placed scout camps at Daguella, Timam, Tiguli and Djember.
 - a. Observation Posts linked to camps built on key Inselbergs from year 2 onwards.
 - 3) Daily GPS managed (Cybertracker) foot, vehicle and/or motorbike patrols
 - 4) Ultralight Airplane based at Daguella informing ground patrols.
- g. Maintaining a LE monitoring database - A dedicated LE administration officer was appointed in 2016 to maintain the ZNP Law Enforcement Monitoring Database that includes data on patrols, arrested people, suspected poachers, ivory and arms registers, etc. As part of the Domain Awareness System historical data can be used to provide predictive modelling of where ranger teams should be deployed at given times of the year based on previous events.
- h. Information gathering – The information gathering system is further discussed in detail under Strategy 3 below.

ii. Teams

The table below gives an overview of rangers numbers in Zakouma.

Table 16: Law enforcements staff numbers.

Law enforcement staff employed	Remarks	2017	2018	2019	2020	2021	2022
Zakouma							
Zakouma FOM	75% of time		1	1	1	1	1
Head of law enforcement		1	1	1	1	1	1
Head of information		1	1	1	1	1	1
Administrative assistant		1	1	1	1	1	1
Radio operators		4	5	5	5	5	5

Training manager			1	1	1	1	1
Drivers (logistical)		1	1	1	1	1	1
Horse manager			1	1	1	1	1
Horse team leaders		5	5	5	5	5	5
Horse team secretaries		5	5	5	5	5	5
Horse team ranger/grooms		20	20	20	20	20	20
Grooms		6					
Mamba team leaders		3	4	4	4	4	4
Mamba team secretaries		3	4	4	4	4	4
Mamba team rangers		15	12	12	12	12	12
Mamba team drivers		3	4	4	4	4	4
Mixed patrol team leaders		2	2	2	2	2	2
Gate guards		4	4	4	4	4	4
Tourism guards		2	6	6	6	6	6
<i>Siniaka Minia</i>							
Siniaka Minia FOM	50% of time		1	1	1	1	1
Head of law enforcement			1	1	1	1	1
Radio operators			1	1	1	1	1
Team leaders			3	3	3	3	3
Secretaries			3	3	3	3	3
Rangers			4	4	4	4	4
Total			76	91	91	91	91

The law enforcement team is led by an anti-poaching manager in charge of the day-to-day management of the team. There will be a second anti-poaching manager based in SMFR. The anti-poaching manager is a sworn officer, seconded by the Ministry of Environment to the park, and is supported by an administrative officer that assists in keeping the Law Enforcement Monitoring Database up to date.

All daily anti-poaching patrol movements, as well as the management of any incidents, are done from the operations center. This center is manned by 1 of 5 radio operators 24/7, 365 days per year. The radio operators work 8 hour shifts at a time for a period of 10 days before they take 5 days rest.

4 “Mamba” teams of 6 rangers each forms the park’s rapid reaction teams. This team of specially selected guards continue to undergo stringent training in many fields from weapons handling, precision shooting, tracking, night and day reconnaissance operations, military small unit tactics, ambush tactics, communications, first aid, etc. and are deployed from specially adapted vehicles. The Mamba teams are made up of a team leader, a secretary, 3 rangers and a driver. While on patrol the teams conduct mainly foot patrols but is supported by their vehicles to allow for rapid reaction should it be necessary.

5 horse patrol teams do the bulk of the long-distance patrolling on horseback. These teams are made up of a team leader, a secretary, 2 rangers and 2 grooms. Horse teams are normally autonomous for 4 days at a time before they need replenishment. Horse team replenishment is normally carried out by the law enforcement logistical vehicle and a trailer carrying water and horse food.

With the reintroduction of black rhino into Zakouma at the end of the 2017/18 dry season 3 dedicated rhino teams will be formed to provide a permanent presence around this high-value target specie. The rhino teams will be made up of a team leader, a secretary, 2 rangers and 2 rhino monitors and will deploy from motorbikes.

An additional three teams of 6 rangers each will be based in SMFR with team leaders from the existing ZNP teams.

Through annual and bi-annual MoUs signed with the local authorities mixed team are used to provide a permanent presence along the periphery of the park. These teams, made up of soldiers from the Nomadic Guard (GNNT), are paired with a Zakouma team leader to ensure a line of communication and accountability.

There are 4 outposts guarded by “barrier guards” – Goz Djérat, Ibir, Kiéké, Kach-Kacha. These guards are responsible for information gathering around their outposts and in Goz Djérat and Ibir maintain the liaison between headquarters and rangers and their families. Goz Djérat station is the main entrance to the park (Ibir is also an entrance gate although seldom used) and requires effective access control of all visitors/people entering and leaving the park.

During the tourism season it is necessary to provide guards for tourism activities such as guided walks and self-drive game viewing. Tourism guards follow a rotation of 10 days on-duty with 5 days rest.

Each ranger is entitled to 1 month of leave a year and assistance is given in case of family issues or health evacuation to Am Timan. The system of giving entire teams their leave at the same time will be changed and in future 1 member per team will be on leave at a given time therefore allowing the normal deployment of the team.

The Team Leaders (*chef d'équipe*) are responsible for team organization, itinerary execution, intervention decisions and execution. A briefing session is undertaken before the patrol in the radio control room as well as a debriefing session after the patrol. The team secretary operates the GPS, assures radio communication and is responsible for all data collection and reporting during and after the patrol.

Each ranger is issued with a firearm – usually an AK47 though some are equipped with M14 rifles. Firearms and ammunition are mainly contributed by the Government of Chad although with the permissions received following the creation of the RRT, pistols and rifles (and ammunition) were purchased by a private donor for exclusive use in the park. One member per Mamba team is normally issued with a long-range scope equipped precision rifle while on patrol and pistols have been issued to patrol teams, radio operators, drivers and LE management.

At present a hand written patrol report is completed by the *chef d'équipe*. This system allows for human error and in 2018 an icon based digital collection system like SMART/Cybertracker will be implemented. A law enforcement monitoring report is completed at the end of each month which records various things such as available man/days, number of patrols, arrests, animals poached, etc. A detailed database of all ivory is maintained (following IUCN guidelines) with all tusks or pieces of ivory found marked and photographed and stored in the highly secure ivory store next to the control room.

iii. Training

ZNP operates its LE corps by military standards, working constantly to build a disciplined, dedicated and professional team. Motivating field staff is imperative and ZNP seeks to build long-term morale and a feeling of purpose through regular training, exercises, communication, team-building and by constantly improving equipment.

In 2018 a Rapid Reaction facility will be constructed at the Zakouma headquarters. All ranger teams will rotate through this facility and will spend 1 rotation on stand-by in case rapid reaction is needed. Teams from SMFR will rotate through this base every few months for additional training and an

opportunity to share experiences with ZNP officers. With the employment of the dedicated training manager all teams will receive refresher training while on stand-by. Refresher training will include:

- ▶ Firearm handling and shooting practice
- ▶ The use of minimum force on a force continuum
- ▶ Basic literacy
- ▶ Operation of radios, GPS and tracking devices
- ▶ Any other new technology like Cybertracker etc.

Replacement of ineffective personnel is another important aspect in the maintenance of a professional and motivated team. All guards will receive clear terms of reference at the beginning of each year and will be objectively assessed at the end of each year. These assessments will form the basis on which bonuses are awarded and all ineffective or old guards will be replaced or sent on retirement.

iv. Aircraft, vehicles and equipment

- a) The use of the aircraft is discussed in more detail in Chapter 6.1. Even though part of the aircraft's function is to provide logistical support the main reason for the use of aircraft is to provide anti-poaching support and daily aerial surveillance. Zakouma will be requesting the use of 2 aircraft in this business plan. A larger, suitable aircraft to be based in Zakouma and a smaller aircraft dedicated to Siniaka Minia.

In 2017 Zakouma operated with only aircraft but due to an incident with the parks aircraft and the subsequent unserviceability of a leased replacement aircraft the park was sometime without aerial support for weeks at a time. This did not only leave the park extremely vulnerable to poaching but also put unnecessary high tolls on the rangers operating under the difficult conditions at the height of the wet season.

As discussed the two aircrafts will primarily be used for aerial surveillance, anti-poaching and logistical support. Elephant collars provide the operations center the location of these elephant herds and even though ranger teams are patrolling around these herds it is still necessary for daily surveillance flights. During the wet season ranger teams are resupplied by air and also rotated in and out to enjoy much needed rest between patrols. These rotations require minimum of three flights in and out to move two rangers and their kit at a time.

In Siniaka Minia daily surveillance flights will initially be necessary to detect nomad groups along the periphery, or entering the reserve. The location of these nomad groups will be relayed to the teams on the ground who will have to use the opportunity to prevent the nomads from entering the reserve but also to sensitize them on the boundaries of the reserve seeing that the reserve boundaries has not been enforced in recent years. The LSA to be purchased for SMFR will be able to provide a backup for surveillance flights in Zakouma if the ZNP requires maintenance or is down for a period of time.

- b) The replacement of the specialised anti-poaching vehicles, one dedicated law enforcement logistics vehicle and the use of 2 tourism vehicles for anti-poaching logistical support at the FOBs in the wet season is discussed in Chapter 6.1.
- c) Horses are a unique and essential part of Zakouma LE operations. Horse management has undergone significant changes especially in horse care, equipment, horse training and guard horsemanship. Improvements to equipment, safety and horse stock is ongoing.

An expatriate horse manager will be employed in 2018 for 1 year to train a dedicated Chadian horse manager. It will be the duty of this horse manager to ensure that the Zakouma stables and horse are well-managed. Where necessary training will be provided to horse team leaders, rangers and grooms to ensure best practices are being implemented and adhered to. The horse manager will be supported by 9 grooms (3 for the Zakouma headquarters, 3 for the Rhino FOB and 3 for the Attreidate FOB), working on a 10 day on, 5-day off rotation ensuring that there are always 2 grooms working per post and 1 on leave.

Following a visit by a consultant in 2017 suitable patrol equipment has been designed for the horse teams. This equipment, even though practical, will also allow for the comfort of both horses and riders. Seeing that horse patrol rangers cannot carry backpacks the standard ranger patrol equipment is transported in saddle bags and the bedroll system, as used by other patrols, has been slightly adapted to fit on the saddle.”

- d) Foot patrol equipment have been standardised as per the African Parks LE SOPs. Even though foot patrols have not been a part of the Zakouma LE system in the early days it has become a key method of patrolling with the Mamba teams (generally known to be the most effective patrol method). The Mamba teams mainly do foot patrols or a combination of foot and vehicle.

Table 17: General Law Enforcement Uniforms & personal equipment issue.

Uniforms	2018	2019	2020	2021	2022	
Leather patrol boots	1	1	1	1	1	
Jungle Boots ¹	1	1	1	1	1	
T-Shirts	2	2	2	2	2	
Tactical Long sleeve	3	2	2	2	2	
Tactical Trousers	2	2	2	2	2	
Boonie Hat ²	1	1	1	1	1	
Berets	1				1	
Turban ²	1	1	1	1	1	
Combat Belt	1		1		1	
Poncho	1		1		1	
Ranger socks	3	3	3	3	3	
Insignia; AP, subdued	2	2	2	2	2	
Insignia; Zakouma, subdued	2	2	2	2	2	
Waterbottle ³	1			1		
Backpacks / Alice pack M2k ⁴	1			1		
Cantle/Saddle bags ⁴	1			1		
Duffel Bag ⁴	1			1		
Webbing/including grab bag	1		1		1	
Paracord	1		1		1	
Waterbladder - 3l ³	1		1		1	
Magazine pouches	1				1	
Tourniquet pouches	1				1	
Sleeping bags	1			1		
Sleeping mat	1			1		
Tents ⁵	1			1		
Bashe	1			1		
Mosquito net ⁶	1			1		
Mosquito net - standard white	1			1		
Bivvy Bag	1			1		
Handcuffs	1				1	
Weapon Sling	1			1		
Head torches	1		1		1	

1 – Jungle boots only issued to field going LE officers.

2 – Boonie hats or Turbans issued – not both.

3 – Water bottles only issued to Guards and Radio Control operators. 3l camelbaks to field going teams.

4 – Duffel bags to gate guards/radio control operators/tourist guards. Backpacks to all field going teams. Saddle bags to mounted unit.

5 – Tents and Bashas will be issued. Tents for wet season and bashas for dry season.

Goals & measureable outcomes

- ▶ A 24/7 functioning operations centre informed through the Domain Awareness System.
- ▶ Task specific ranger teams in place.
- ▶ Wet season strategy in place inside the park for the duration of the wet season.
- ▶ Wet season preparations in place should the elephant leave the park.
- ▶ Dedicated rhino protection teams in place.
- ▶ Dedicated Siniaka Minia teams in place.
- ▶ Up to date law enforcement data base in place and regularly updated.
- ▶ New rangers trained and existing rangers rotating through a refresher training program.
- ▶ A dedicated aircraft available in Zakouma for daily surveillance flights and anti-poaching support
- ▶ A dedicated aircraft available in Siniaka Minia for daily surveillance flights and anti-poaching support
- ▶ All ranger equipped with task specific equipment.

Required resources (people and other)

- ▶ A dedicated training manager will be employed to do all refresher training.
- ▶ New ranger selection and basic field ranger training will be done by an external consultant following the African Parks SOP training manual.

Table 18: Ranger uniforms and equipment issued per Law Enforcement division.

	2018	2019	2020	2021	2022
Stores	\$16,973	0	\$2,432	0	\$2,915
Management Team	\$116	\$9,077	\$139	\$10,878	\$5,874
Radio Operators	\$2,714	\$880	\$2,234	\$1,059	\$3,608
Rhino Team	\$25,526	\$9,191	\$20,560	\$19,561	\$26,484
Siniaka Minia	\$25,526	\$9,191	\$20,560	\$19,561	\$26,894
Mamba teams	\$34,035	\$12,254	\$27,413	\$26,081	\$35,859
Horse teams	\$47,732	\$15,549	\$34,520	\$39,466	\$45,127
Barrier guards	\$3,036	\$940	\$2,046	\$1,703	\$3,603
Tourist guards	\$4,208	\$1,410	\$3,084	\$2,379	\$5,059
Total	\$159,865	\$58,491	\$112,989	\$120,687	\$155,422

Costs

Pre-selections and BFR; Zakouma and SMFR. BFR training course with outcome of 36 new rangers (\$1,800 per graduate)	\$64,800
Refresher training SMFR	\$20,000
Anti-poaching aircraft hours (PNZ and SMFR) 300hrs	\$74,400
Ranger uniforms and equipment	\$159,865

DAS installation	
Site-visit in Liwonde for DAS set-up and implementation	\$2,000
Cost of data entry volunteer to bring the law enforcement data base up to date	
Allowance (3 months)	\$1,500
Flight	\$2,000
Wet season strategy inside the park expenses is covered under operational expenses.	
Wet season preparations outside the park is covered under operational expenses.	
Monthly subscription charges of various ops centre programs and communication:	
DeLorme	\$540
Spidertracks	\$270
Ranger team remuneration	
LE management	\$76,403
Radio operators	\$18,189
Training officer	\$5,263
Mamba teams	\$81,284
Horse teams	\$83,368
SMFR teams	\$65,305
Rhino teams	\$83,179
Ranger team allowances (in lieu of rations)	\$185,263

Horse management	
Horse food	\$34,488
Medication	\$4,308
Equipment; saddles and saddle blankets	\$16,134
Total	\$54,930

Law enforcement

STRATEGY 2 – Collaboration with local law enforcement authorities

Discussion

ZNP started the collaboration with GNNT (*Garde Nationale et Nomade de Tchad*) and the Wildlife Sector of Ministry of Environment and Fisheries (MEF) for Salamat Region (“*Secteur*”) early 2011 in order to improve the effectiveness of the conservation effort in the periphery of the park.

- ▶ GNNT has 4 bases in the Zakouma periphery, of which 3 are strategic for GEFZ protection – Kach-Kacha, Kiéké and Dagour. GNNT have been assigned to the region with the clear mandate to assist in the protection of the environment and the fight against poaching. ZNPP signed an Action Plan and collaboration protocol with the GNNT in 2011 and a renewed version has been signed each year since then. The main activities of the joint effort include undertaking anti-poaching patrols (alone or mixed with Zakouma guards), nomad camp control and displacements from boundary proximity and the securing of migration corridors. GNNT are available to augment a ZNP patrol team if a larger team is needed for any particular intervention.

ZNP contributes to the expenses of the GNNT for an amount of FCFA 21.4m/year which includes expenses for field equipment and remuneration for field work. The 2 mixed patrol teams, patrolling

along the periphery of the park have been issued with 3 motorbikes each.

- ▶ The Wildlife Sector of the MEF for Salamat Region, referred to as “*Secteur*” is a governmental institution responsible for nature conservation in the region. ZNP started collaboration with them in 2011 and has a close relationship with the *Secteur* as all arrested people are transferred to them and they are responsible for judgement procedures. In the agreement between ZNP and the *Secteur* they are supposed to give monthly feedback on the status of all prosecutions of arrested perpetrators. ZNP gives support for vehicle fuel (a good vehicle was donated to them in 2015) and some equipment and indemnities during operations. Cooperation with Wildlife Sector has been developed further, especially in the field of judiciary procedures and in 2015 the second in command of the Sector in Am Timan was sent to the Republic of Congo and Cameroon as part of this training. Total budget is FCFA 12.65m /year.
- ▶ The mixed Wildlife Conservation Brigade was created by Presidential Decree and includes the GNNT, military personnel, the gendarmerie, guards from *Eaux et Forêts* division under the general direction of Governor and Commandant of Zone 3. Each Region has a brigade. ZNP collaborates closely when specific interventions are needed in or outside the park.
- ▶ Communication is maintained with the GNNT and the *Secteur* through VHF radios operating on a Zakouma frequency to provide constant contact and exchange of information and there is also a VHF radio installed in Am Timan. The Mobile Brigade in Abou-deïa to the northwest and Djouna to the southeast have each been given an HF radio, as has the headquarters of Siniaka Minia Faunal Reserve, Daguella. The HF radio belonging to the military unit in Chinguil has been repaired also providing them with direct communication with HQ.
- ▶ With the Siniaka Minia Faunal Reserve now classified as part of the greater Zakouma area and with the Zakouma PMU taking control of the management of this reserve the guards based in the Melfi Domain de Chasse to the north of Siniaka Minia will be issued with Zakouma firearms to extend security footprint in this area.

Goals & measurable outcomes

- ▶ Provide on-going assistance to the GNNT through an agreement drawn up and signed on an bi-annual basis.
- ▶ Provide on-going assistance to the Sector with an agreement drawn up and signed on an annual basis.

Required resources (people and other)

- ▶ Zakouma team leaders to deploy with mixed patrol teams along the periphery of the park.

Costs

Annual support to the GNNT	\$39,000
Annual support to the <i>Secteur</i>	\$23,000

Law enforcement

STRATEGY 3 – Information gathering system

Discussion

A dedicated Information Manager has been employed seeing that information gathering and good relationships with key villages is a key component of an effective and pro-active law enforcement strategy. To keep the operations centre informed information gathering is tasked on a weekly basis, depending on the perceived threats, with weekly feedback given on all tasks.

As part of the Zakouma early warning system and to assist with the free flow of information from the communities to the Zakouma control room, VHF radios have been installed in key villages around the park. To date 16 villages and government stations have VHF radios (Am Timan, Amberhadje, Amdouma, Chinguil, Dagour, Dounge, Goz Djérat, Hagalo, Ibir, Kach-Kacha, Kaye, Kiéké, Koran, Koutoutou, Tarh and Tcheolei) and two villages have HF radios (Abgué and Daguela). This village radio network ensures a direct and private link between these villages and the control room which enables these outlying communities to transmit information on suspicious people in their area immediately and at any time. Additional villages will continually be added to this network over time. The threat of poaching gangs or bandits from other countries or regions is real (Sudan, CAR) and it is the villagers that will pick up their presence in the region.

An office will be provided for the Information manager in the radio control room complex at ZNP HQ which is where all information is analysed, reacted upon and stored. Dossiers for each case are built and kept open until judgement has been passed.

With the availability of funds in the EU 11th EDF Regional Indicative Fund the early warning network will be expanded into the Aouk region to the south of the park along the Sudan border.

Even though Zakouma is no longer directly involved in the Chad National Elephant Program the park will continue to cooperate with this initiative to provide support, on merit, where needed and when requested.

Goals & measureable outcomes

- ▶ Employment of an information manager
- ▶ Establishing a dedicated information office
- ▶ Maintaining the early warning village radio system

Required resources (people and other)

- ▶ External expertise should assistance to the Chad National Elephant Program be requested

Cost

Any support requested by the Chad National Elephant Strategy will fall outside the scope of this business plan and funds will have to be sourced separately.

Information manager salary	\$6,947
Village radio operator wages	\$526
Village radio operator uniforms	\$823

STRATEGY 4 – COLLABORATION WITH JUDICIAL AUTHORITIES

Discussion

Arrested offenders are handed over to the wildlife authorities for prosecution. The Park will continue to collaborate with the authorities to ensure that legal procedures are being followed to its logical conclusion, without undue interference, seeing that the authorities sometimes release arrested offenders from local prisons. This however, falls outside of our jurisdiction and we are entirely dependent on the police and judicial officers to handle our cases properly, which has not been very satisfactory to date.

ZNP will also continue to work with the Prosecutor's office in Am Timan. ZNP staff were trained in evidence collection, judicial procedures and follow-up. Currently the law enforcement manager and assistant park manager undertakes the function of the follow up on prosecutions with the court in Am Timan through the *Secteur*.

Goals & measureable outcomes

During the current five year planning period, the following specific goals and measureable outcomes will be targeted:

- ▶ Ensure that all serious offenders are taken to court at departmental (provincial) level
- ▶ Ensure legal procedures are being followed
- ▶ Receive monthly feedback on the status of all arrested poachers.

Required resources (people and other)

During the current five year planning period, the following resources will be required to effectively implement this strategy:

- ▶ Liaison with and support from the local judiciary authorities especially from the Law Enforcement Officer – prosecutor.
- ▶ Ongoing training for the law enforcement manager, his deputies and rangers in legal procedure and all law related issues relevant to LE operations.

Costs

Part of this training will be included in other LE training.

The support to feed arrested perpetrators while awaiting trial falls under the MoU with the *Secteur*.

6.3 Conservation, monitoring and habitat management

The overall objective of the conservation, monitoring and habitat management activity is to, as far as possible, return the park to a pristine condition, and to restore the wildlife populations of all representative species that occurred historically. As needed, effective implementation of this activity may require special research projects, alien species removal, a fire management plan, base-line species surveys and possibly terrestrial counts.

In that regard, core objectives and strategies in relation to conservation, monitoring and habitat management can be summarised as follows, followed by a discussion below:

Conservation, monitoring and habitat management	
Core objectives	Core strategies
1. Improve understanding of all key conservation issues in the Greater Zakouma Ecosystem	<ul style="list-style-type: none"> - Employ a full team of experienced, motivated and well-equipped conservation and monitoring staff - Maintain a system of data collection collected by ground patrols, aerial monitoring flights, collaring data, satellite imagery and data gathering amongst the population - Where necessary conduct research on key species to keep park management informed of conservation priorities
2. Maintain and improve the integrity of the ecosystem through habitat management	<ul style="list-style-type: none"> - Exotic species removal - Bushfire management
3. Restoration of wildlife species that occurred historically	<ul style="list-style-type: none"> - Black rhinoceros reintroduction

Conservation, monitoring and habitat management
STRATEGY 1 – Employ a full team of experienced, motivated and well-equipped conservation and monitoring staff

Discussion

The first priority when establishing a new park, or as in the case of Zakouma when taking over the management of an existing park, is to establish area integrity. This is normally achieved by providing effective law enforcement, creating the infrastructure to support the law enforcement and park operations and, ensuring that the parks staff is remunerated and motivated to do the job at hand. Once these activities are in place community buy-in for conservation as the best form of land-use is needed and tourism revenue is needed to fund this and to ensure that the donor dollar is always the last dollar to be used. In the African Parks philosophy research and monitoring is normally the last activity once a park has reached maturity.

African Parks has never been a proponent of research for the sake of research but where research and monitoring can inform park management on how to better manage the park it does form and integral part of achieving the ultimate vision for the protected area.

To achieve this the following people will be employed over the next 5-years:

- ▶ A research and monitoring manager
- ▶ A research and monitoring assistant
- ▶ Dedicated rhino monitors in line with the rhino management plan as discussed under strategy 8 below.

Table 19: The conservation staff employed.

<i>Conservation staff employed</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
Zakouma					
Research and Monitoring manager		1	1	1	1
Monitors		1	2	2	2
Monitoring manager	1	1	1	1	1
Rhino team leaders	3	3	3	3	3
Rhino team secretaries	3	3	3	3	3
Rhino team rangers	6	6	6	6	6
Rhino team monitors	6	6	6	6	6
Total	19	21	22	22	22

The following equipment will be purchased to ensure the conservation, monitoring and habitat management department is equipped and motivate to complete the task at hand:

- ▶ Camera traps
- ▶ GPS
- ▶ Communication equipment

Conservation, monitoring and habitat management staff will be issued with Law Enforcement uniforms and equipment.

To ensure optimum performance of the conservation, monitoring and habitat management staff all staff will be given Key Performance Indicators (KPIs). These KPIs will be based on the specific terms of reference for each position. At the end of each year staff members will be assessed following these KPIs. This assessment will form the basis for bonuses and increases and will identify where training of individuals is needed.

Goals & measureable outcomes

- ▶ Employment of the necessary team
- ▶ Equipping the team with the necessary equipment to fulfil their duties

Required resources (people and other)

- ▶ No additional resources will be required.

Costs

Research and monitoring team equipment	
Camera traps (10)	\$3,000
GPS (3)	\$1,196
Radios (3)	\$1,860
Delorme (3)	\$1,471
Total	\$7,527

Conservation, monitoring and habitat management

STRATEGY 2 – Maintain a system of data collection collected by ground patrols, aerial monitoring flights, collaring data, satellite imagery and data gathering amongst the population

Discussion

ZNP will continue to monitor species, habitat and population movements by maintaining a system of data collection, visualisation and analysis using ground patrols, aerial monitoring flights, collaring data, satellite imagery data, gathering amongst the local population, etc.

This activity will initially be carried out by the research and monitoring assistant and eventually by a research and monitoring manager assist by the research and monitoring assistant. At present all data are received by the operations centre radio operators and supported by the head of law enforcement and the special projects coordinator but in future the implementation of the Domain Awareness System, as described in chapter 6.2 under law enforcement, will be receiving the majority of the data.

The current sources of data available to the park management will be discussed in more detail below:

Collared elephant

From 2000 to 2003 Dr. Dolmia Malachie's (CURESS I) research which included using satellite GPS collars, gave the first scientific confirmation of elephant migration outside the park during the wet season to the North and West. The population at that time comprised more than 4000 individuals and their range was far larger than today, but these data can serve as a prediction of possible future expansion of Zakouma elephants after population recovery.

Since the start of African Parks management of Zakouma elephants have been collared, mainly as a law enforcement tool, and this data was eventually used to inform the land-use plan implemented in the greater Zakouma ecosystem. To date 32 elephants have been collared in Zakouma; 10 in 2011, 6 in 2012, 2 in 2013, 4 in 2014, 4 in 2015 and a further 6 elephants in 2016. The normal working life of an elephant collar is 2 years.

With the success of the law enforcement operation the Zakouma elephant population is starting to grow and elephant numbers started increasing for the first time in more than a decade. With the increase of the elephant population it is crucial to anticipate that the elephants may resume their migratory movements or start splitting up into smaller groups as experienced in 2016 and 2017. Also, with the inclusion of the SMFR in the Greater Zakouma eco-system managed by African Parks, a similar elephant protection strategy will be implemented and it is reasonable to believe that the increased security of the SMFR may cause part of the migrating elephant population to remain in the area. Although the Zakouma elephants have the peculiarity of forming one large herd, dispersal into several groups has been observed and it is our duty to ensure that the entire elephant population movements are monitored and the whole herd protected. This will only be achieved by increasing the number of animals fitted with GPS collars.

Additional collared animals

Over the past 7 years under African Parks management satellite collars were also fitted on; tiang (*Damaliscus lunatus*), to closely monitor their wet season migration outside the park and decide on more effective protection of these vulnerable populations; on a cheetah (*Acinonyx jubatus*), which provided one year of data; on four lions in different zones of the park as part of the large carnivore monitoring programme described and; on a Lelwel hartebeest (*Alcelaphus buselaphus lelwel*) to closely monitor their wet season migration outside the park.

As a result, ZNP has a comprehensive data base of animal movements, but not necessarily entirely coherent or accessible. Additional research of specific species is discussed under strategy 3 below.

Rhino monitoring program

Following a request from the Chadian President to the South African President to donate black rhino to Chad a MoU was signed between the 2 countries on the management of these rhino under a custodianship agreement. The rhino will be reintroduced in Zakouma NP and will be managed by Zakouma. Clear guidelines on the monitoring of these rhino have been stipulated in a Rhino Management Plan following guidelines from the IUCN African Rhino Specialist Group. In line with these guidelines the reintroduced rhino will be monitored on a daily basis by a dedicated group of rhino monitors under the supervision of a rhino monitoring manager. The 3 rhino protection teams of 6 members each will include 2 monitors per team. These teams will rotate every 5 days on a 10 day on-duty, 5 day off-duty rotation ensuring that 2 teams will always be present to provide security and to monitor the rhinos. Rhino monitoring will include the identification of; ear-notches, and details of natural features, such as ear tears, damaged tails, horn configurations, body scars, as well as their age, sex and body condition (using standardised systems where possible). This information, together with diagrams and/or digital photographs, should be used to update the Rhino 'ID' master files. Released rhinos should also be extensively monitored in the immediate post-release settling in period to determine the extent of their movements / dispersal and use of habitat (water points, feeding areas, and habitat types) at different times since release and in the different seasons. This information and maps of kernel-estimated home ranges can help refine and improve best-practice release recommendations.

Aerial surveys

WCS assured regular aerial surveillance, SRF flights and annual aerial surveys of fauna and human activities from 2008-2011. It brought important information about animal population trends, differences in animal distribution in dry and rainy season, confirmation of elephant movements outside the park and constant information about human activities in and around Zakouma. ZNP will continue with regular aerial monitoring of key wildlife species, human activities (legal/illegal) and habitat features. Observations of illegal activities have a high importance for LE operations, deployment of patrol teams and quick interventions. Wildlife, habitat and human activity observations allow for the compilation of interactive maps for a better understanding of wildlife and human activity distribution by different seasons, habitat changes and utilisation by wildlife and humans and for future updating of the land use plans. The increase of sorghum fields is of particular importance and needs to be carefully monitored.

ZNP will continue with the biennial aerial surveys of all large mammals in order to monitor the population trends of the key animal species. The methodology must however always be the same as previous years to enable the park management to compare data and identify trends.

Survey of the Aouk Domain de Chasse

Following the availability of funds through the EU 11th EDF Regional Indicative Program, Zakouma will start with strategic camera trapping in the Aouk Domain de Chasse to identify the existence of remaining animal populations and human interference in this area to the south of the park.

Historical data

Various studies have been concluded during the EU managed era. A volunteer will be used in 2018 to organize the park's archive, search for, and file all historical research done in the park and where necessary recover data from hard copy reports.

Goals & measureable outcomes

- ▶ 30 additional collared elephant
- ▶ Rhino monitoring program in place
- ▶ Aerial survey conducted

- ▶ Aouk survey conducted
- ▶ Volunteer contracted to sort out parks scientific archive

Required resources (people and other)

- ▶ Veterinarian to assist with the elephant collaring
- ▶ The former Zakouma FOM and pilot to assist with the training of the Zakouma pilot
- ▶ The former Zakouma FOM and pilot to assist as a consultant with the design of the aerial survey as well as the processing of the data

Costs

Elephant Collaring	
Collaring of 30 additional elephants:	\$110,000
Collaring of additional wildlife: 2019 Special Project	
Rhino monitoring program will be covered under Special Projects	
Aerial survey costs	
Aircraft hours - 40 hours @ \$175/h;	\$7,000
Darren Potgieter professional time – 17 days @ \$350/d;	\$5,950
Darren’s travel and accommodation;	\$2,250
Total	\$15,200

Wetland survey costs	\$10,000
Aouk survey costs – Leon/Pierre-Armand	\$5,000
Volunteer costs	
Travel & Accommodation	\$2,500
Living allowance (1 month)	\$500

Conservation, monitoring and habitat management
STRATEGY 3 – Where necessary conduct research on key species to keep park management informed of conservation priorities

Discussion

With the necessary area integrity, constituency for conservation and revenue generation in place it is necessary to do additional research on certain aspects to enable the park management to stay up-to-date on conservation needs. The following research topics have been identified for the duration of this business plan.

Giraffe

According to the IUCN Giraffe Specialist Group the conservation status of the Kordofan giraffe (*Giraffa camelopardalis antiquorum*) in the Republic of Chad is little known, although systematic aerial surveys over the last 11 years provided a solid baseline of an increasing population from 292 in 2005 to 947 individuals in 2016. Currently, giraffe only inhabit Zakouma National Park (ZNP) in Chad, and it is now believed to conserve half of all known Kordofan giraffe in the wild (GCF 2017).

The proposed research project aims to conduct the first comprehensive census of the giraffe in ZNP, assessing the population dynamics and spatial ecology within the Park, better understanding of the historic,

current and future threats facing giraffe, assessing the viability of giraffe conservation translocations within/outside the country, and supporting the development of a National Giraffe Conservation Strategy and Action Plan in Chad for their future conservation management⁶.

Elephant

Movement data has been collected on the Zakouma elephant population since 2011, resulting in an extensive database with six years of data. In anticipation of the Zakouma elephant herd starting to migrate out of the park again in the wet season it is suggested to study environmental and behavioural factors on the Zakouma elephants to predict when elephants will migrate out of the park.

Elephant migration is known to be influenced by external factors such as water distribution (Smit, Grant & Devereux, 2007) and vegetation availability (Harris et al, 2008), as well as internal factors such as reproductive status or fear (Nathan et al, 2008). In this study, we will focus on the following:

1. Environmental factors:
 - a. Availability of water;
 - b. Vegetation type and the availability of forage; and
 - c. Carrying capacity.
2. Behavioural factors:
 - a. Feeding preferences.
3. Population dynamics.
 - a. Growth rate of the population

Anthropogenic factors, such as poaching incidents and proximity of settlements will be excluded from this study. Historical elephant movements are thought to result from poaching pressure inside the Park during the wet season, when no Law Enforcement entity was present in Zakouma.

Since October 2010, the number of poaching incidents has been reduced dramatically, so far that there is not sufficient data to correlate the elephant GPS collar data (since April 2011) with poaching incidents in Zakouma and its periphery.

African Parks will guarantee safety for the elephant inside Zakouma for the future to come, thereby excluding poaching pressure as a driving factor for future migrations.

Lion

In the early 2000s the lion population was researched and the population found to be at about 120 with 63 individuals identified. 15 years later the lion population is considered to be the same even though a very large prey base exists. 3 potential factors could have an impact on the lion numbers; lack of access to prey, high infant mortality or the illegal killing of lions outside the park. To enable the park management to manage the lion population better it will be necessary to research the lion population and find the possible cause of the relatively low lion population compared to the high number of potential prey species.

Goals & measurable outcomes

- ▶ National Giraffe Conservation Strategy and Action Plan for Chad
- ▶ Paper predicting when elephants will start leaving the park again
- ▶ Paper on the status of the Zakouma lion population

⁶ Abstract from giraffe research proposal - Dominique Rhoades, August 2017

Required resources (people and other)

- ▶ External students to do the necessary research

Cost

Land cover map of the entire elephant corridor	\$4,000
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Costs of studies will be covered by various students and no additional costs will be incurred by Zakouma.

Conservation, monitoring and habitat management

STRATEGY 4 – Removal of exotic species in the park and replace with a suitable fast-growing indigenous species

Discussion

Exotic species removal

Invasion of exotic species is widely considered as ecosystem degradation. Every exotic species introduced to an ecosystem reduces its ecological value and has an effect on indigenous species and control in an open system like this, which has extensive flooding each wet season, is difficult. Due to this ZNP will take appropriate actions, including:

- Monitoring of exotic species.
- Removal of exotic species in the park and replace them with a suitable fast-growing indigenous species. Following permission received from the Ministry of Environment, the removal of the Neem trees commenced in and around Zakouma in places where the trees are not needed for shade. 150 indigenous trees (*Khaya senegalensis* and *Ficus* spp.) are planted at the Zakouma HQ each year which will eventually enable management to remove the Neem trees completely. Coppicing is a problem therefore an acceptable herbicide is painted onto the tree stump after felling to help control regrowth. The wood is very dense (mean 646 kg/m³) and termite proof, and is being used to make seats for school benches (See Chapter 6.4), used as poles for the horse paddocks, used as poles for the rhino holding areas and temporary sanctuary and used as planks to construct tourism viewing platforms in the park.
- A species of *Datura* plant has started spreading in and around Zakouma HQ, most probably having arrived with horse feed. These will be controlled on a yearly basis to prevent further spread.

Goals & measureable outcomes

- ▶ Removal of all exotic tree species from the park.

Required resources (people and other)

- ▶ No additional resources required.

Cost

Costs of the tree cutting is covered by the park operational budget but indigenous trees are purchased and planted each year at a cost of \$3,600.

Conservation, monitoring and habitat management

STRATEGY 5 – Bushfire management

Discussion

At present the Zakouma approach to fire management is to provide adequate pasture for herbivores at the end of dry season, when it becomes scarce, through the early burning of firebreaks. The early burning and firebreak system has the primary role of preventing very hot runaway fires at the end of the dry season when good grazing is most needed by all ungulates. In the dry season the wind is predominantly from the north-east and it is therefore necessary to burn a firebreak along the northern and eastern boundaries. Initially open ended firebreaks are achieved through an aerial ignition system to access remote areas. In addition to this a road will be opened in 2018, parallel to the northern and eastern boundary roads, from where a firebreak can be put in place at the beginning of each dry season.

Dedicated firefighting equipment is available at the park HQ to enable efficient control during critical times and the field operations manager has also been sent on a bush firefighting course.

Goals & measureable outcomes

- ▶ Road in place parallel to the northern and eastern boundary roads.

Required resources (people and other)

- ▶ No additional resources required.

Cost

No additional costs. The costs of the bulldozer per kilometre to open the firebreak road is covered under chapter 6.1. The cost of firefighting is covered by the park operational budget.

Conservation, monitoring and habitat management

STRATEGY 6 – Reintroduction of the black rhinoceros

The reintroduction of the black rhinoceros will require a financial effort that falls outside the immediate budget of this plan and is therefore treated as a Special Project in Chapter 10.

Discussion

The black rhino went extinct in Zakouma around 1972. Yet, the reintroduction of the black rhino has a wide support in Chad and ZNP is convinced that the reintroduction will have extensive positive external effects on the Park and on the Chadian nation as a whole as it will allow all stakeholders to rally around a popular goal.

The Partnership Agreement specifically provides for the possibility to re-introduce certain species in Article 17 under certain conditions.

It is obvious that the reintroduction can only be considered once the park can assure adequate security. The major law enforcement effort that ZNP has put in place in recent years for the protection of its elephant population, will be an ideal security environment for the black rhino and the need to protect both species will have a positive cross functionality. Moreover, it is clear that it will also further motivate park staff in their task. The protection methods for elephant and rhinoceros are very similar and the ZNP management team has full confidence that the time is now right to reintroduce black rhino. Following the signing of an

MoU between the Governments of Chad and South Africa in 2017 and the development of a rhino management plan for Chad the rhino is planned to be reintroduced to Zakouma in May 2018.

The ecotype which originally occurred in Chad is now officially extinct (*D. b. longipes*). The ecotype which is closest geographically (*D. b. michaeli*, the East African ecotype) is usually the required ecotype to reintroduce, however in the case of Zakouma it is thousands of kilometres between the park and the nearest population of *D. b. michaeli*, which resulted in the AfRESG agreeing to the sourcing and reintroduction of the more abundant *D. b. minor*.

Goals & measureable outcomes

- ▶ Reintroduction of 6 black rhino to Zakouma by May 2018.

Required resources (people and other)

- ▶ The donation of 6 rhino by the South African Government to Chad
- ▶ The transport of the rhino from South Africa to Chad by the Chadian Government
- ▶ Wildlife veterinarian experienced in long distance translocation of rhino

Costs

Covered under Special Project.

6.4 Building a constituency for conservation

The overall objective of building a constituency for conservation is to generate support for the continued conservation of the protected area in the face of other competing land uses. Each protected area therefore requires its own customised strategy which will depend on a combination of the ecological threats and local, regional or national socio-economic conditions. The following approach has been adopted:

- a. Identify the key objectives - identify the long-term mission of the park (as set out previously in this document);
- b. Identify the key threats - identify the major threats to achieving the vision (as set out previously in this document);
- c. Mission critical activities - identify the management interventions necessary to ensure that the major threats are overcome – these are termed “mission critical activities” in that their achievement is directly linked to achieving the vision for the protected area. By definition these activities and costs should form part of the core budget.
- d. Value added activities - in addition, identify the management interventions which are “value-added” in that their achievement has no direct link with the vision for the protected area, but which are still worthwhile from a social perspective. By definition these activities will generally be treated as special projects and will be pursued only if funding is available.

In that regard, the core objectives and strategies in relation to building a constituency for conservation can be summarised as follows, followed by a discussion below:

Building a constituency for conservation	
Core objectives	Core strategies
1. To employ a full team of experienced and motivated community staff	- Employ necessary community coordinators, extension officers and teachers
2. Support for the Land Use Plan for the Greater Zakouma Ecosystem	- Validate the Land Use Plan - Enforce the Land Use Plan through community buy-in
3. A constituency in support of the conservation of ZNP and its periphery	- Continue with the Environmental Education Program - Continue to provide support to the Education Department - Sensitize the community to ongoing conservation programs as well as the benefits of these programs
4. A protected area adhering to IUCN conservation criteria	- Assist the Government where needed with facilitating the relocation of Bone village - With the assistance of the Government end agricultural encroachment on the parks south-eastern boundary
5. Promote income generation for the populations around the Park	- Provide full-time and temporary employment in the park - Maximize the sourcing from local sources including building materials, patrol horses, horse feed, supplies, etc. - Coordination with other organizations in the region to identify income generation activities and to actively support where possible

Building a constituency for conservation

STRATEGY 1 – Employ necessary community coordinators, extension officers and teachers

Discussion

The human population living around ZNP consists of different ethnic and cultural groups living on the land of 2 main administrative regions (Salamat and Guera). To maintain a good relationship with these diverse local communities it is important to employ a full complement of competent community staff. This activity is led by the assistant park manager as Community Management Department Manager and is supported by a community coordinator, a community animateur and 13 teachers.

Table 20: Community engagement staff numbers.

<i>Community staff employed</i>		<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
<i>Zakouma</i>							
Ass park manager and head of service		1	1	1	1	1	1
Siniaka Minia FOM	25% of time		1	1	1	1	1
Community coordinator		1	1	1	1	1	1
Community animateurs		1	1	1	1	1	1
Teachers		13	20	20	20	20	20
Boarding school master		1	2	2	2	2	2
Boarding school cooks (seasonal)		3	5	5	5	5	5
Boarding school assistant (seasonal)		1	2	2	2	2	2
Total		21	33	33	33	33	33

A new Community Officer was employed early 2013 and a second in 2015. They are responsible for exchanging information with local communities. These officers are based in Zakouma with much time being spent in different key villages in the periphery area during the dry season or undertaking village outreach visits in Zakouma.

All relevant information regarding ZNP is communicated to communities in view of keeping them up to date with new developments or changes in management so that they will appreciate that ZNP is the property of the Chadian people. All community outreach visitors are shown park headquarters as part of their visit. The Head of the Department of Community Management and his officers coordinate closely with other local organizations working in the park periphery. This team are responsible for keeping management updated on all developments, positive and negative, in the periphery (i.e. they play an information gathering role as well).

Community development staff will be issued with two dress shirts and a cap. The boarding school employees and teachers will be issued with two t-shirts and a cap.

To ensure optimum performance of the community development staff all staff will be given Key Performance Indicators (KPIs). These KPIs will be based on the specific terms of reference for each position.

Goals & measureable outcomes

- ▶ Employ and remunerate the full complement of community staff.

Required resources (people and other)

- ▶ No additional resources are needed

Costs

The remuneration of the community development staff	\$134,842
Uniforms for the community development staff	\$2,396

Building a constituency for conservation

STRATEGY 2 – Validate the Land Use Plan

Discussion

A critical component of the long-term protection of the ecosystem and the long-term freedom of movement for wildlife is a LUP which is well written and enforced by government. The concept of this plan is to primarily protect the two identified zones (west and north of the park), in order to provide open migratory routes for elephant and other wildlife, and at the same time allowing for the sustainable use of natural resources within these zones by the local population. All agriculture will be prohibited as well as the construction of permanent structures or new villages. The nomadic people will be entitled to utilise the areas in the dry season for grazing as will the sedentary villagers. Most houses in the rural areas in Chad are built out of wood, mud and grass. It will be possible to collect these materials in the designated zones. The people will also benefit from firewood, honey, bamboo, and Arabic gum collection in these wooded areas. The benefit of the LUP to the local communities will be the long-term protection and sustainable utilisation of ± 9200 km² for the future benefit of all.

The LUP has been accepted by local Government as well as the communities around the park. To have the plan ratified by the Chadian Government in 2018 the next steps will be:

- ▶ Ensure support of the Land Use Plan by the board of the Zakouma Foundation
- ▶ Validate the Land Use Plan through a national workshop made up of all relevant Ministries
- ▶ Obtain better conservation status for the migratory corridors

Goals & measurable outcomes

- ▶ Approval by the Zakouma Foundation board - 2018
- ▶ Validation by the Chadian Government – 2018
- ▶ Better protection status of the migratory corridors – within the next 5 years

Required resources (people and other)

- ▶ No additional resources will be needed

Costs

The cost of the workshop to get validation by the Chadian Government \$8,000

Building a constituency for conservation

STRATEGY 3 – Enforce the Land Use Plan through community buy-in

Discussion

In order to get community buy-in for the land use plan the following key points are important:

a) Develop a strong relationship with local communities and local administration

Contact with local/regional administration is maintained on different levels – governors, prefects, sub-prefects, chefs of canton and village leaders. Agreements with communities will be maintained and further developed especially for collaboration on periphery protection and help with temporary bases, airfields for anti-poaching teams and the manning of the village radios. The important role that Zakouma plays on local and regional level will always be reiterated during these meetings.

b) ZNP to actively contribute to the general security in the region

One of the factors that influence and will influence even more in the future the appreciation of the presence of national park in the region by local communities is to show that well-trained and well-managed park guards bring additional security and support to them.

ZNP will seek to further improve this through better collaboration with regional security authorities such as gendarmerie, GNNT and the regional environmental officers. Especially useful will be extension of communication network and the ability to communicate any relevant information that can help to protect and help local communities. The village radio programme as described above provides a valuable communication link with strategic villages, on a specific community channel, to allow for the flow of information on potential threats to people and wildlife to ZNP management and with the airstrips allows park management to assist the villages during the wet season when they are cut off. Assistance is usually in the form of malaria treatment at the height of the rains. This has played a huge role in gaining the support of the communities which has in turn resulted in the prevention of poaching incidents, arrests of poachers and the recovery of stolen livestock – a benefit to the park and its neighbours.

c) Enforcement of the Land Use Plan in the entire elephant range

To enforce the land use plan it is necessary to further demarcate the corridors so as to prevent any misunderstanding and to have regular meetings with the communities to keep them informed of legal land use practices. The elephants have not migrated out of the park and used these corridors since 2013 and it could be another 5 or 10 years before the elephant numbers have increased sufficiently to start migrating and using these corridors again and therefore all the more reason to keep communities informed of the reason why these corridors are so important and why the need for the land use plan.

Another way of enforcing the corridors in the land use plan is to obtain a higher protection status, such as a faunal reserve, for these corridors.

Goals & measurable outcomes

- ▶ Frequent interaction with local communities and local government
- ▶ Meeting costs of community-based management structures for the corridors Be fully integrated in any regional planning activity that impacts on ZNP, its periphery zone of influence and the area covered by the LUP
- ▶ Maintain and broaden the cooperation with local security organizations and insure immediate action when security issues are reported through the early warning village radio system
- ▶ Install educational all-weather signboards in each of the LUP villages explaining the concept and regulations

Required resources (people and other)

- ▶ No additional resources required outside of the community budget

Cost

Install two committees for the management of the corridors	\$3,600
Cost of regular meetings to be held in corridors	\$3,600
Cost of bill boards in the corridor (\$288 x 34)	\$9,792

Building a constituency for conservation

STRATEGY 4 – Continue with the Environmental Education Program

Discussion

- a) To undertake environmental education village outreach visits

This activity, already undertaken by previous CURESS projects, has been expanded considerably and will continue, as it can bring—if properly done—valuable knowledge and support to local communities including school children, and through them the entire communities and local administrations.

The community outreach coordinator runs the village outreach environmental education visits to the park. The park continues to encourage and enable local visits to Zakouma, especially for local communities, school children, government employees and traditional representatives. Two drivers are available to show village outreach visitors the operations here, go on game drives, provide environmental talks and show wildlife videos. People wishing to visit the park submit an application and visits are then arranged, usually for one full day, with a meal included, but for groups from far away, they do also spend a night in Camp Salamat, the Camp constructed for the use of Chadian nationals wishing to visit Zakouma. The small Mercedes truck was converted into a game viewing vehicle early in 2013 and it now has easily removable seating for 40 people and a roof cover providing shade. This truck is used to transport the people from the more distant towns, such as Mongo, and they then transfer to the two game viewing vehicles which were converted for the purpose of village outreach visits, once they are in the park. Educational material has been developed and is given to each school child who visits the park as a gift. Each visitor as part of this programme also receives a t-shirt with a drawing of an elephant and the words “I have visited Zakouma” in French and Arabic, with a total of 5000 people receiving such a t-shirt annually in the dry season. Specific issues relating to the periphery and the long-term survival of Zakouma as a park are addressed, with the importance of the Land Use Plan always emphasized.

- b) Environmental education program in all the local schools.

An environmental education expert has been contracted during the 2016/17 dry season to get the environmental education programme up and running and the school teachers employed by the Park, as well as the community extension officers (animateurs) were trained by him in a new curriculum. Equipment for the library and environmental centre has been purchased (computers, projectors, etc.), and the new curriculum has been put in place. The library and environmental centre has had solar power installed and has power 24/7. Teaching aids and material have been identified by the consultant and put in place for the 2017/18 education year.

Goals & measureable outcomes

- ▶ At least 5,000 people visiting the park as part of the community outreach program

- ▶ Environmental education program in place at the schools supported by the park
- ▶ Environmental education teaching aids and material in place

Required resources (people and other)

- ▶ Follow up visit by the environmental education expert (1-week)

Cost

Cost of outreach visits	
Transport	\$9,000
T-shirt (5,000)	\$16,465
Staff salaries (ladies who cook and attendant)	\$1,404
Material and equipment (bi-annual costs)	\$758
Other consumables	\$221
Meals for outreach visits	\$17,276
Total	\$45,124
Cost of environmental education teaching aids and materials	
Foldable outreach booklets ‘Protegeons notre nature’ (7,500)	\$1,670
Environmental education workbooks for students	\$16,380
Cost of environmental expert	\$5,000
Salaries of the Animateurs	\$9,263
	\$32,313

Building a constituency for conservation

STRATEGY 5 – Continue to provide support to the Education Department

Discussion

Goz Djérat is a village at the main entrance of the park and is the home of the majority of guards, employees and their families. ZNP commenced a school building program in 2013 with the aim being to construct a small school in key villages and where ZNP will assist with educational materials while also introducing environmental education to the curriculum but without interfering in the Government schooling system. Secondary schools have been constructed in each of the two regions; Goz Djérat in the Salamat region and Chinguil in the Guera region. Four so called ‘Elephant Schools’, have already been built; a primary and a secondary school in Goz Djérat, and a primary school in Ibir and another primary school in Kiéké. A specialised block-making machine was imported from South Africa which allows for the inexpensive manufacture of environmentally friendly building blocks which do not require mortar for construction. The hot climate in Chad was considered when designing the classrooms. The aim is to target one generation of Chadian children in the park periphery area through the Elephant School building programme and to ensure environmental education at these schools as well. All school furniture (school benches, teacher’s desks, beds for dormitory blocks, etc.) is designed and manufactured in the Zakouma workshops, using steel and exotic wood. Due to the high demand for schools, and because many villages have no schools at all, an alternative temporary school was designed and six such ‘Secko’ Schools were built in the 2016 dry season. Each school consists of one big classroom made out of local grass ‘secko’ mats attached to a steel frame. Each school has a cement floor and proper school furniture. These small schools were put in villages which did not have schools, and where there was no primary education.

Following a request from the nomadic communities, a mobile Nomad School has been developed in the dry season of 2016/2017. A stretch tent was purchased and erected at Amdouma providing most of the nomad children with formal schooling for the first time in their lives. Going forward this will form part of the Elephant Schools programme and will be expanded to the western corridor.

Zakouma NP strategy for better basic education is not only linked to the building of schools but also to improve the standard of general education in these schools. This process started in 2013 through the employment of additional teachers for the schools built by Zakouma. At the end of 2017 thirteen teachers were employed by Zakouma, 1 teacher at the Nomade school, 6 teachers at the four permanent schools and 6 at the ‘Secko’ schools. The teachers are employed for the 7 months of the school year. Different educational materials, mainly books, were also bought and given to the Goz Djérat schools. The intention is that the Goz Djérat schools will serve as fine examples of schools connecting the environment with quality education.

Seeing that children have to travel from afar to attend the secondary schools, dormitories were constructed at the Goz Djérat secondary school and “house master” employed to be the head of the school complex and the boarding schools. In future better gender equality will be promoted at the secondary schools.

Following a request from the nomadic communities, a mobile Nomad School has been developed in the dry season of 2016/2017. A stretch tent was purchased and erected at Amdouma providing most of the nomad children with formal schooling for the first time in their lives. Going forward this will form part of the Elephant Schools programme and will be expanded to the western corridor.

ZNP will also investigate the possibility to finance scholarships for selected secondary school students. A scholarship system will also be introduced for the children of fallen rangers that have sacrificed their lives for Zakouma.

Goals & measureable outcomes

- ▶ Construct an additional four secko schools
- ▶ Provide an additional Nomad school in the western corridor

Required resources (people and other)

- ▶ Contractor to assist with construction of the schools.

Cost

The costs for the construction of four additional Secko schools and a Nomad (secko) school have been covered under Park Operations & Infrastructure.

Teacher salaries (20)	\$71,579
Teaching material	\$3,600
Costs of Goz Djérat boarding school	
Salaries (attendant, assistant-attendant and 3 cooks)	\$13,851
Material and equipment (bi-annual)	\$2,634
Other consumables	\$3,485
Meals	\$20,486
Total	\$40,456

Building a constituency for conservation

STRATEGY 6 – Sensitize the community to ongoing conservation programs as well as the benefits of these programs

Discussion

Apart from the environmental education discussed earlier it is necessary to sensitize the community on various issues on an ongoing basis. The ideal way to do this is in fun, exciting ways rather than giving lectures or prescribing to people what should be done. Zakouma will enter into agreement with the local “Zakouma” theatre group in Am Timan to continue to play an important part in this. Anticipated plays that the theatre group will perform in 2018 includes:

- Continuous sensitization of communities in the corridors of the importance to keep these corridors open for migratory species
- Sensitization of communities around the park in anticipation of the rhino reintroduction program
- Sensitization of communities around Siniaka Minia on the integration of the Siniaka Minia Faunal Reserve as part of the Greater Zakouma Ecosystem

In addition, Zakouma will continue to provide logistical support to the local, Am Timan based “Elephants of Zakouma” soccer team.

Goals & measureable outcomes

- ▶ Agreement signed with the local theatre group

Required resources (people and other)

- ▶ Am Timan based “Zakouma” theatre group

Costs

Cost of theatre group (incl. transport costs)	\$7,600
Support of soccer team	
(Food, transport and sports clothing/shoes)	\$3,420
Sensitization meetings in all villages along the migration corridors	\$4,500
Total	\$7,920

Building a constituency for conservation

STRATEGY 7 – Assist the Government where needed with facilitating the relocation of Bone village

Discussion

Bone village has been inside the park since the creation of the park in 1963. When the park was created there were 150 people living in Bone and today, just over 50 years later there are about 1,500 people living in 2 villages. The Government of Chad has applied for Zakouma to be recognized as a World Heritage Site. Part of the UNESCO criteria for the recognition of a National Park as a WHS is that the park boundaries will be respected and that no people will be living inside the park. Based on this the Government of Chad has had several meetings with Bone village in 2017 to discuss alternatives and in the last meeting it was decided that the Bone villagers will look for an alternative site outside of the park. Once the community

have provided possible locations and once these have been approved the Zakouma management will assist with the provision of certain key facilities at the new site as funded by the EU 11th EDF funding agreement.

Goals & measureable outcomes

- ▶ Suitable location found to relocate Bone village outside of the park

Required resources (people and other)

- ▶ Allowance made in the 11th EDF funding agreement

Cost

Cost of basic infrastructure as per 11 th EDF	\$300,000
In 2018	\$66,189

Building a constituency for conservation
STRATEGY 8 – With the assistance of the Government end agricultural encroachment on the parks south-eastern boundary

Discussion

Due to a road running inside the park along the eastern boundary having mistakenly taken as the park boundary in the past, without being corrected, these communities have started planting fields inside the park boundaries. The Government of Chad has applied for Zakouma to be recognized as a World Heritage Site. Part of the UNESCO criteria for the recognition of a National Park as a WHS is that the park boundaries will be respected and that no people will be living inside the park. In 2016 this eastern boundary has been demarcated by the Government of Chad by erecting cement beacons every 500 meters. It will be necessary in 2018 to use a grader to push a road along the actual boundary and to stop all agricultural exploitation inside the park’s boundaries.

Goals & measureable outcomes

- ▶ The actual boundary being respected by the communities in the affected areas

Required resources (people and other)

- ▶ Commitment from the Government to enforce the encroachment ban

Cost

Cost of grading the boundary road	\$2,700
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Building a constituency for conservation

STRATEGY 9 – Provide full-time and temporary employment in the park

Discussion

ZNP is one of the biggest employers in the Region of Salamat and thus give already many opportunities for income generation for local populations. This strategy will be further developed on the basis of actual needs and new activities identification and if possible support for other activities will be done in future. Main focus will be on:

- ▶ Provide full-time and temporary employment in the park
- ▶ Maximize the sourcing from local sources including building materials, horse feed, and food etc.
- ▶ Sourcing patrol horses from local communities and have the parks veterinary assistant assist with an enhanced breeding program
- ▶ Coordination with other organizations in the region to identify income generation activities and to support actively where possible
- ▶ Start a woman's group initiative at the staff village in Zakouma to provide merchandise to be sold to tourists at Tinga and Camp Nomade
- ▶ Add value to honey production and Arabic gum harvesting outside of the park in the corridor areas of the land use plan
- ▶ Start a community guide cooperative to provide guides for self-drive visitors to Zakouma (discussed in chapter 6.5)

Goals & measureable outcomes

- ▶ Full time and temporary employment for local communities
- ▶ Support all local sources
- ▶ Creation of the first pilot woman's group at the Zakouma staff village
- ▶ Identify more income generation activities

Required resources (people and other)

- ▶ Project manager to lead the woman's group initiative at the park headquarters
- ▶ External trainer to train the community guides
- ▶ External consultant to assist with the value adding initiative in the corridors

Costs

Woman's group project manager (Salary, travel, insurance etc.)	\$40,559
Purchase of material for the creation of merchandise	\$10,000
Cost of volunteer to provide community guide training (allowance, flight)	\$2,500
The APN in-house consultant will be used for the value adding initiative in the corridors	\$2,000

Building a constituency for conservation

STRATEGY 10 – Collaborate with other NGOs operating in the area as part of the 11th EDF EU funding to identify income generation activities and to actively support where possible

Discussion

As part of the EU 11th EDF Zakouma will have to collaborate with other NGO active in the area on community projects outside of the park. ZNP will cooperate with all NGOs active in the region so as to develop an efficient exchange of information on any issue that may affect the environmental status of the Park. Through this cooperation, ZNP will participate in the national and regional planning activities that may affect the Park and its periphery, with meetings regularly being held during the dry season. A document was produced (*La Stratégie de Développement d'un Groupe de Soutien pour la Conservation (2014 – 2018)*) in which our strategy and long-term vision regarding community conservation work in the periphery areas is explained. A Community Engagement Plan for ZNP was also produced in 2015.

Goals & measureable outcomes

- ▶ Collaboration agreements with other NGOs working in the area

Required resources (people and other)

- ▶ None from Zakouma

Costs

No additional costs.

6.5 Tourism and other revenue generation

The overall objective of the tourism and other revenue generation activity is to develop profitable revenue generating activities in and around the park to help with offsetting the costs of managing the park. Possible revenue streams include park fees, proceeds from tourism operations and carbon sales.

In that regard, the core objectives and strategies in relation to tourism and other revenue generation can be summarised as follows, followed by a discussion below:

Tourism and other revenue generation	
Core objectives	Core strategies
1. To generate tourism revenue while at the same time, reduce donor financing and reliance	<ul style="list-style-type: none"> - Employ a full team of experienced and motivated tourism staff - Offer affordable tourism opportunities for local Chadian Nationals - Provide a value for money, mid-market facility to cater for affluent Chadian Nationals, the local expatriate market and foreign nationals to visit the park - Provide an exclusive, high yield, low impact tourism facility
2. To better manage and coordinate the limited tourism opportunities	<ul style="list-style-type: none"> - Put in place a central reservation system - Put in place a tourism zonation plan - Through the centralized operations centre coordinate tourism movements on a dedicated tourism radio channel - Introduce a community guide cooperative to provide guides to self-drive tourists

Tourism and other revenue generation

STRATEGY 1 – Employ a full team of experienced and motivated tourism staff

Discussion

To generate tourism revenue and reduce reliance on donor financing it is necessary to employ a competent and motivated staff seeing that product alone does not ensure the return of tourists. To enable the tourism department to provide the necessary services the following staff are employed:

Tinga

- ▶ The tourism department manager is also the Tinga manager
- ▶ Tourism liaison and reservations
- ▶ Receptionists and assistant manager
- ▶ Driver / guides
- ▶ Chefs and assistant chef
- ▶ Servers
- ▶ Room attendants, cleaners and laundry
- ▶ Armed guard

Camp Nomade

- ▶ Camp manager
- ▶ Private guide liaison and reservations
- ▶ Driver / guides
- ▶ Chef and assistant chef
- ▶ Assistant camp manager and servers
- ▶ Tent attendants, cleaners and water porter
- ▶ Armed guard

Camp Salamat

- ▶ Am Timan based reservation officer
- ▶ Driver / guides
- ▶ Camp guard / cleaner
- ▶ Cooks
- ▶ Community guides for self-drive visitors

Table 21: Tourism staff employed.

<i>Tourism staff employed</i>	2017	2018	2019	2020	2021	2022
<i>Management</i>						
Head of Tourism	1	1	1	1	1	1
Tourism marketing	1	1	1	1	1	1
Private guide liaison	1	1	1	1	1	1
<i>Tinga</i>						
Tinga manager		1	1	1	1	1
Reception	1	1	1	1	1	1

Chefs		2	3	3	3	3	3
Severs		2	3	3	3	3	3
Room attendants		1	3	3	3	3	3
Laundry		1	1	1	1	1	1
Drivers		2	3	3	3	3	3
<i>Camp Nomade</i>							
Camp manager		1	1	1	1	1	1
Assistant camp manager		1	1	1	1	1	1
Chefs		2	2	2	2	2	2
Severs		2	2	2	2	2	2
Room attendants		2	2	2	2	2	2
Laundry		1	1	1	1	1	1
Drivers		2	2	2	2	2	2
<i>Camp Salamat</i>							
Am Timan reservations			1	1	1	1	1
Drivers		2	2	2	2	2	2
Guard (seasonal)		1	1	1	1	1	1
Cooks (seasonal)		3	3	3	3	3	3
Total		29	36	36	36	36	36

Where necessary the capacity of the tourism staff needs to be further developed. Capacity building can be achieved through:

- ▶ Driver and guide mentoring through volunteer guides
- ▶ Management training at the Hilton hotel in the off-season
- ▶ Service delivery training at the Hilton hotel in the off-season
- ▶ English language skill training
- ▶ Purchase additional guidebooks to better equip driver / guides

Tourism staff will be issued with the following uniforms:

- ▶ 2 Golf shirts
- ▶ 2 pairs of Chino pants
- ▶ 1 pair of shoes
- ▶ 1 cap

To ensure optimum performance of the tourism staff all staff will be given Key Performance Indicators (KPIs). These KPIs will be based on the specific terms of reference for each position.

Goals & measureable outcomes

- ▶ Employing the full staff compliment
- ▶ Well-trained staff that can provide the necessary services
- ▶ Achieve the tourism revenue target as set out in the 2018 budget

Required resources (people and other)

- ▶ Volunteer guides to mentor the driver / guides
- ▶ An agreement with the Hilton Hotel in N'Djamena to provide training in the off-season
- ▶ English language course for servers in Garoua, Cameroon

Costs

Staff salary costs (incl. Am Timan reservation office staff)	\$86,008
Staff uniform cost	\$7,411
English language course	\$4,000
Cost of guidebooks	\$1,200
Volunteer guide costs are covered under Chapter 6.4 strategy 9.	

Tourism and other revenue generation

STRATEGY 2 – Offer affordable tourism opportunities for local Chadian Nationals; Camp Salamat

Discussion

The park will continue to target community groups, collect these with park vehicles, bring these groups to Camp Salamat as a free of charge service as part of the community development and constituency building as well as environmental education programme. This will however not be considered to be a tourism activity in future.

The current practice that allows all Chadians free access to the park as well as to Camp Salamat will be stopped at the end of 2017. Outside of the targeted community groups, any Chadian wishing to enter the park and partake in its tourism activities will now be subject to a nominal park entry fee.

In cases where Camp Salamat is not fully booked with targeted community guests, Chadian visitors may stay at the camp at a nominal rate that will include accommodation and a game drive but they will still have to provide their own food.

To prevent the current overcrowding of the facility that results in spill-over to Tinga and in turn disrupts the Tinga guests, Camp Salamat is to move location to a designated and more suitable area that still allows it to be in a scenic position but where it is more manageable for Zakouma park staff.

A booking system, as well as a functional radio communications system is essential in managing this process and both would need to be implemented for Camp Salamat. The updated radio system will also be used to manage and coordinate game viewer movements in accordance with a zonation plan that the TDP will outline.

The newly introduced community guide cooperative, as discussed under Strategy 8 below, will provide guides for self-drive tourists and no private vehicles will be allowed to do game drives in future without a community guide.

Goals & measureable outcomes

- ▶ Construction of a new Camp Salamat facility along the Bahr Djourf
- ▶ Implementation of a fee system for Chadians
- ▶ Implementation of a booking system for Camp Salamat
- ▶ Implementation of a radio communication system for Camp Salamat vehicles
- ▶ Successful implementation of community guide cooperative

Required resources (people and other)

- ▶ A contractor to construct the new Camp Salamat

Costs

Construction of Camp Salamat in a new location (discussed under Chapter 6.1)

Tourism and other revenue generation

STRATEGY 3 – Provide a value for money, mid-market facility to cater for affluent Chadian Nationals, the local expatriate market and foreign nationals to visit the park; Tinga

Discussion

With a slight upgrade of décor and FF&E (furniture, fixtures and equipment), Tinga will function as a fantastic mid-market facility that can be used to target both local as well as international tourists looking for a value for money Zakouma experience.

The aim will be higher volumes of Chadian as well as local expats visitors. These will be from self-drives and there needs to be a marketing effort for fly-ins from mostly Ndjamena.

General queries for Camp Nomade from international tour operators and guides that have now been restricted to use Camp Nomade (see next section) must now be directed to Tinga, as Camp Nomade will now only function on a restricted guide list basis.

There needs to be a strong marketing drive to target budget/value for money international tourists and Europe as the closest international source should form the main focus of that marketing.

With the relocation of Camp Salamat to the Bahr Djourf the old Camp Salamat site will be converted into a camping facility for Tinga guest not wishing to pay the price of accommodation in the chalets. Chad-based missionaries have requested this option on multiple occasions in the past.

The radio communication system needs to be updated and used to manage and coordinate game viewer movements in accordance with a zonation plan that the TDP will outline.

Short walking trails from Tinga with an armed will be added to the activity list as well as a viewing/photographic hide upstream of the lodge.

In due time the old causeway across the Salamat downstream from Tinga will be removed and a permanent water hole will be put in place directly in the front of the camp.

The newly introduced community guide cooperative, as discussed under Strategy 8 below, will provide guides for self-drive tourists and no private vehicles will be allowed to do game drives in future without a community guide.

Goals & measureable outcomes

- ▶ Basic upgrade of the Tinga facilities
- ▶ Conversion of the old Camp Salamat to a campground for Tinga
- ▶ Implementation of a radio communication system for Tinga vehicles
- ▶ Successful implementation of community guide cooperative
- ▶ Construction of a game viewing hide at Tinga

Required resources (people and other)

- ▶ Contractor to do basic upgrade and changes to the camp ground
- ▶ Marketing material
- ▶ Zakouma guidebook to be sold at Tinga camp.

Costs

The Camp Tinga upgrade and costs for the camping ground at the original Camp Salamat location have been discussed under Chapter 6.1

Marketing material	\$3,000
Zakoume guidebook (1000 booklets)	\$1,015

Tourism and other revenue generation
STRATEGY 4 – Provide an exclusive, high yield, low impact tourism facility; Camp Nomade

Discussion

Due to the concentration of water in the dry season in this largely arid region, Zakouma offers a premier wildlife experience that is world class. Guests currently use Camp Nomade as a semi-mobile facility that positions each year in an area of the park that maximises the last remaining water points and thus intercepts large concentrations of wildlife.

The camp has enjoyed success in that each season it reaches a high occupancy rate (60% +) and the facility has managed to run profitably the past few years.

Typical guests are high end safari goers that book with the private guide network currently in place.

African Parks feels that the wildlife experience lends itself to a more participatory focused experience that moves away from the passive safari guest to a more involved, productive and participatory guest that grows a relationship with the park and specifically African Parks as an organisation.

The private guides model should also shift from passive wildlife guides to rather ambassadors for and of what African Parks conservation objectives are.

For this reason, it is proposed that access to Zakouma through Camp Nomade is restricted to only the top productive and consistent guides are met with to discuss a partnership relationship going forward. Guides must undergo an African Parks two-day workshop where they will be equipped with content, marketing material, AP branded shirts and receive several presentations from key AP staff to impart the African Parks model, culture and vision for conservation.

The agreeable guide companies to this approach then become restricted and exclusive ambassadors that are the only access to Camp Nomade.

The focus will then be on high end guest that would like to be more involved in participatory tourism and conservation activities and due to restricted numbers – will be involved in behind the scenes activities of the park. This may be tracking collard animals, flying activities, have access to view anti-poaching control room activities, more walking activities, etc.

Guides then become part of telling the conservation story of African Parks and guests become involved, informed, and potential supporters of the conservation initiatives of the park and the broader African Parks portfolio.

African Parks will play a more active role in targeted donor groups that will be put together by the various funding offices. These AP donor groups will contract one of the ambassador guides to accompany them.

The current camp will need a basic upgrade and improvement on some key aspects such as ablution facilities, the addition of more participatory activities, etc.

Two new vehicles will also be purchased and converted into game viewers.

In this way, it is believed that more direct financial support can be generated that will far exceed the current profitability of the lodge.

Goals & measureable outcomes

- ▶ Basic upgrade of the Camp Nomade facilities
- ▶ Implementation of a radio communication system for Camp Nomade vehicles
- ▶ Procurement of 2 new vehicles for Camp Nomade

Required resources (people and other)

- ▶ Replacement of equipment for Camp Nomade facilities

Costs

Equipment replacement and upkeep	\$25,000
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Tourism and other revenue generation

STRATEGY 5 – Put in place a central reservation system for Camp Salamat

Discussion

As part of the initial constituency building exercise Camp Salamat was made available to Chadian Nationals free of charge and was open at any time during the dry season without prior arrangements. The new Tourism

Development Plan will endeavour to separate community outreach, which is a constituency building exercise, from tourism. Vehicle operators were starting to take advantage of the free Zakouma access and was making money out of organizing trips to the park over weekends. These vehicles did not respect zonation principles or park regulations and without prior reservations would sometimes flood Camp Salamat to such an extent that it started causing littering and a disregard for basic ablutions and public health.

In cases where Camp Salamat is not fully booked with targeted community guests, Chadian visitors will be allowed to stay at the camp at a nominal rate. To counter the disorganised way in which access to the park was allowed, the park has introduced the community guide system. To counter the over exploitation of Camp Salamat, especially over weekends, and to allow for basic facilities for all visitors to the camp, any prospective visitors to Camp Salamat will need to make reservations at a reservation office in Am Timan. A reservation number will be issued to the reserved guests and only guest with a reservation will be allowed to enter the park by the guard at Goz Djerat.

ZNP has four control points in Goz Djérat, Kiéké, Ibir and Kach-Kacha. The most important one is Goz Djérat, as it is the main entrance gate and virtually all visitors (tourists and official visitors) enter the park by the Am Timan road via Goz Djérat. Ibir and Kiéké are entrances on the main West and South roads and are used mainly by the local population crossing the park in transit to other centres.

As part of the new Tourism Development Plan access control will be further improved with a permit control system where all people traveling through the park will be issued with a permit that will be surrendered when they leave the park. People in transit through the park will not be charged seeing that the roads are national roads but in future all visitors to the park will be charged a nominal fee. All incoming vehicles and persons will be registered and their arrival/departure day and time noted, as well as vehicle registration number and purpose of the visit. The secondary accesses near the Goz Djérat gate have been closed to stop people arriving into the park without being registered.

Goals & measureable outcomes

- ▶ Employing a reservations person and opening a reservations office for Camp Salamat in Am Timan
- ▶ Control park entry through a permit system and access only allowed to reserved guests at park entry gates

Required resources (people and other)

- ▶ Office space in Am Timan
- ▶ Employing a reservations clerk

Costs

Printing of permits	\$600
Annual costs for office space in Am Timan	\$4,320
Reservations person salary (already covered under strategy 1)	

Tourism and other revenue generation
STRATEGY 6 – Put in place a tourism zonation plan

Discussion

One of the key reasons for Camp Nomade’s high occupancy, apart from the excellent wildlife product, is the fact that Zakouma can offer exclusivity to the Camp Nomade guests. To guarantee this exclusivity it is necessary for a zonation plan. It is however not possible to impose a set zonation plan for extended periods

because of the evolution of wildlife activities as the season progress and waterhole dry up. The zonation plan will therefore be a short-term plan that will be determined every Wednesday before the new group of Camp Nomade guests arrive and will be in place for one week at a time. This zonation plan will be determined in the operations centre by a team made up of the following people; Tourism manager, Camp Nomade manager, Field operations manager, head of law enforcement and radio operator. The plan will be displayed in the operations centre and the radio operator will be responsible to communicate the zonation to all drivers and guides as well as to coordinate all game drives and ensure that other guests do not encroach on exclusive zones.

No entry signs will also be created that will be posted on roads leading into exclusive use zones to inform other tourists of the zonation.

Goals & measureable outcomes

- ▶ To provide exclusivity for the high end tourism facility

Required resources (people and other)

- ▶ No additional resources required

Costs

Construction of five portable “no entry” signs	\$400
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Tourism and other revenue generation
STRATEGY 7 – Through the centralized operations centre coordinated tourism movements on a dedicated tourism radio channel

Discussion

All tourism vehicles to be equipped with radio communication devices and to be in contact with the operations centre on a continuous bases utilizing a dedicated tourism channel. This tourism channel, already in place, will be used to communicate high value sightings to drivers and guides but will also ensure sighting management to prevent overcrowding of sighting thereby diluting the experience. The channel will be used in general for the following:

- ▶ Activities and sightings controlled through the operations centre to better manage wildlife sightings
- ▶ Safety and security:
 - Guides to communicate intentions or deviation from intentions
 - To call the operations centre in case of emergency
- ▶ Temporary lifting of exclusive zones
- ▶ Any other relevant information

Goals & measureable outcomes

- ▶ To better manage wildlife sightings and activities and to prevent overcrowding

Required resources (people and other)

- ▶ No additional resources required

Costs

Sufficient radios for tourism vehicles and handhelds for guides, costs are covered under Chapter 6.1 Park Operations & Infrastructure.

Tourism and other revenue generation

STRATEGY 8 – Provide guides to self-drive tourists through a community guide cooperative

Discussion

Incorporating all the aspects of the new tourism development plan will not just organize tourism better in Zakouma and provide an increase in tourism revenue but it will also provide a better tourism product for the tourists visiting the park. The planned temporary zonation plan and control of all tourism activities can only be successful if all tourists, those on park vehicles as well as those in self-drive private vehicles are in communication with the operations centre and adhere to the principles. To ensure that self-drive vehicles are in communication with the operations centre and adhere to the principles it will be necessary to provide these tourists with a guide, equipped with a radio.

The community guide idea, implemented successfully in other African Parks managed protected areas, allows for community members to be selected and to undergo training before joining a cooperative. The training received includes: principles of guiding, wildlife habits, park history and facts as well as park regulations. The community guides do not work for the park but are managed by their cooperative and are allowed to charge a prescribed fee on a rotational basis. A small portion of this fee gets paid into the cooperative “kitty” and can be utilised at the discretion of a small committee made up of the elected chairman of the cooperative, the tourism manager and the assistant park manager in charge of communities.

Goals & measurable outcomes

- ▶ To provide any self-drive visitors with a guide that knows the park regulations, zoning principles and is in constant communication with the operations centre through a VHF radio

Required resources (people and other)

- ▶ Selection and training of community guides by a volunteer

Costs

Handheld radios and chargers for community guides, these have been included under Chapter 6.1

6.6 Finance, human resources and administration

The overall objective of the finance, human resources and administration activity is to ensure that adequate funding, staff, management systems, accounting procedures and internal controls are in place. In addition, a strong and effective board of directors must be in place to provide strategic support to the project management unit.

In that regard, the core objectives and strategies in relation to finance, human resources and administration can be summarised as follows, followed by a discussion below:

Finance, human resources and administration	
Core objectives	Core strategies
1. Oversight and guidance from the Zakouma Foundation	- Bi-annual board meetings - Bi-annual steering committee meetings
2. A well-managed park with the necessary financial management and corporate governance in place	- Employ a full team of experienced park management staff - Where necessary send park management staff on related training courses - Continue to improve the general administration, store management, financial management reporting, accounting and human resource management

Finance, human resources and administration
STRATEGY 1 – Bi-annual board meetings

Discussion

After a period of an ineffective board due to various reasons the Zakouma Foundation, made up of 13 board members, held 3 board meetings in 2017. Following the assessment of the first 5 years of the delegated management of Zakouma by African Parks one of the recommendations of the assessment was to appoint a more streamlined board in line with other African Parks managed protected areas. A revised partnership agreement between African Parks and the Government of Chad was signed on 8 October 2017 and the new board structure of 7 members; 2 from the Government, 3 from African Parks, a Vice-chairman appointed by African Parks and the General Secretary of the Ministry of Environment as the chairman, supported by an advisory board made up of regional role-players, were accepted.

The role of the board is to approve annual budgets and business plans for the Zakouma PMU to implement.

The role of the advisory board is to advise the Zakouma Foundation on regional issues pertinent to the management of Zakouma.

The Zakouma Foundation board will hold bi-annual board meetings:

- ▶ October/November board meeting to approve the annual workplan. Business plan and budget for the following year
- ▶ April/May board meeting to approve the financial and operation reports of the previous year

Each board meeting will be preceded by a meeting of the advisory board.

Goals & measureable outcomes

- ▶ To approve annual budgets and workplans
- ▶ To approve annual financial and operational reports

Required resources (people and other)

- ▶ An independent chairman to lead the board

Costs

Costs of 2 board meetings per year including:	
Flights to and from the venue	\$11,900
Accommodation and meals for board members and invited guests	\$1,750
Board meeting venue costs	\$2,950
Zakouma shirts for gifts and board members	\$3,675
Total	\$20,275
Costs for hospitality:	
APN Management	\$5,000
UE Official	\$4,386
Staff meeting	\$2,105
Total	\$11,491

Finance, human resources and administration

STRATEGY 2 – Employ a full team of experienced park management staff

Discussion

The management of each department as well as the staff working in that department has been covered under the various activities. The Finance, human resources and administration staff is made up of the park manager, special projects coordinator, financial controller as well as the finance and HR staff.

Table 22: HR, Finance and Admin staff numbers.

<i>Park management, Admin & Finance staff</i>	2017	2018	2019	2020	2021	2022
<i>Park management</i>						
Park manager	1	1	1	1	1	1
Special projects coordinator	1	1	1	1	1	1
<i>Admin & HR</i>						
HR manager		1	1	1	1	1
N'Djamena house attendant	1	1	1	1	1	1
N'Djamena driver	1	1	1	1	1	1
N'Djamena logistics	1	1	1	1	1	1

<i>Finance</i>							
Financial controller		1	1	1	1	1	1
Accountants		2	2	2	2	2	2
Admin clerk - N'Djamena		1	1	1	1	1	1
Petty cash - Zakouma			1	1	1	1	1
Total		9	11	11	11	11	11

To ensure staff are performing at their optimum all staff will annually be evaluated according to Key Performance Indicators (KPIs) and this evaluation will form the basis of annual bonuses and increases.

Park management, admin, HR and finance staff will be issued with the following uniforms:

- ▶ Two olive dress shirts
- ▶ Two Golf shirts
- ▶ 1 cap
- ▶ Some of the PMU members will also receive a white dress shirt

Goals & measureable outcomes

- ▶ To employ a full complement of park management staff to effectively manage the park
- ▶ Conduct annual staff evaluation as base for bonuses and increases

Required resources (people and other)

- ▶ No additional resources required

Costs

Remuneration, travel and insurance for park management staff	\$163,920
Employment of a pettycash cashier for Zakouma	\$4,215
Staff uniforms	
Finance staff N'Djamena	\$2,698
PMU	\$3,135

Finance, human resources and administration

STRATEGY 3 – Where necessary send park management staff on related training courses

Discussion

To keep staff motivated it is important to implement the following programs:

- ▶ Capacity building through training
- ▶ Career planning

Training needs will be identified and where necessary park management staff will be sent on appropriate training courses. Some training courses identified for 2018 include:

- ▶ First aid training
- ▶ French and English tuition
- ▶ Babakar on Geographic Information Systems using ArcGIS software

Goals & measureable outcomes

- ▶ A motivated management staff through capacity building and career planning programs

Required resources (people and other)

- ▶ No additional resources required

Costs

Africa SAFE-T training and equipment	
Training (2 Essential WFA, 1 Basic WFA)	\$3,270
Medication	\$200
Equipment	\$2,851
French language tuition volunteer	
Flight	\$2,000
Allowance (1 month)	\$500
GIS course for Assistant Park Manager	\$5,500

Finance, human resources and administration
STRATEGY 4 – Continue to improve the general administration, store management, financial management reporting, accounting and human resource management

Discussion

There is a need for an even better comprehensive and timely financial and management reporting system that allows for an efficient management of equipment and resources, timely reporting and accounting and efficient human resource management. The ultimate result required is an efficient use of resources and a well-motivated and cohesive staff. Efforts are made to continually improve all financial and reporting systems and the new AP standard Serenic system will be implemented in 2018.

The InFlow stock system, that was implemented at the end of 2017, is being rolled out and improved upon to allow for accurate and timely reporting on all, stock, utilizations and needs.

An integrated and transparent human resources policy has been put in place as required by the Foundation’s rules and the APN standards. As already discussed KPIs will be given to all staff at the beginning of each year and staff members will be evaluated against these criteria at the end of the year as a basis for bonuses and increases.

All efforts are made to facilitate and provide information to external independent evaluators that are sent to the Park by the various donors to assess the progress made. A management report is prepared once a month and distributed to all stakeholders, and meetings are held and reports provided to all donors on a regular basis, as and when required.

In 2018 the Game Rangers Association of Africa will assess the park following their own set of criteria. Independent assessments and peer reviews are extremely helpful tools to better park manager seeing that park managers can very easily get caught up in day to day activities and lose track with best practices.

Goals & measureable outcomes

- ▶ Implementation of Serenic
- ▶ Annual audits as per the agreement
- ▶ Human resources policy and systems in place
- ▶ Trained Finance and Administrative staff in place to undertake this important function.

Required resources (people and other)

- ▶ AP technician to install the Serenic accounting software and train the staff on the use of the software
- ▶ External organization (GRAA) to conduct METT evaluation

Costs

METT assessment	\$4,000
Inflow licenses and maintenance costs	\$500
Serenic implementation	\$4,100

7. 2018 WORKPLAN

Table 23: 2018 Workplan.

Zakouma Strategic Focus for 2018:							
As part of the 11th FED EU funding grant and the new agreement signed between the Government of Chad and African Parks, AP will officially be managing the greater Zakouma ecosystem including the Siniaka Minia Faunal Reserve. The 5 strategic targets for 2018 will be:							
1. Continued emphasis on law enforcement with strong focus on elephant protection - Target of zero losses.							
2. Reintroduction of black rhino.							
3. Collaring of 30 additional elephants in the park.							
4. Extend park management to the Siniaka Minia Faunal Reserve.							
5. Increase park revenue generation through the implementation of the Tourism Development Plan.							
Park management and Infrastructure							
#	Objectives	#	Specific targets or outcomes	Activities	Costs	Timeframe	Responsible
1	ZNP to employ a full team of experienced, motivated and well-equipped park operations staff	1	Recruit, train, build the capacity of, and manage a competent and motivated staff	All salaries and statutory costs		All year	FC
				Staff uniforms and equipment		Q1	Chef de Service
				All training and capacity building programs		Q2 & Q3	Chef de Service
2	To complete all necessary components of park infrastructure required for the proper functioning of the park and to maintain it in such a way as to ensure its availability at minimal cost	1	Upgrade the existing Zakouma infrastructure	Upgrade existing buildings		Q1 & Q4	Chef de Service
				Construct new buildings		Q1 & Q4	Chef de Service
				Maintenance on all existing roads		Q1 & Q4	Chef de Service
				Maintenance of all existing airstrips		Q1 & Q4	Chef de Service
				Road signs for all existing tourism roads		Q1	Chef de Service
				Road along periphery for firebreak		Q1	Chef de Service
				Waste management system		Q1	Chef de Service
2	Put in place the necessary		Construct a Forward Operational Base		Q1	SMFR FOM	

			infrastructure to manage the Siniaka Minia Faunal Reserve	Daguella airstrip upgrade and maintenance		All year	SMFR FOM
				Upgrade the access road from Ibir to Daguella		Q1 & Q4	SMFR FOM
				Put in place basic road infrastructure		Q1 & Q4	SMFR FOM
				Put in place signposts along the periphery		Q1	SMFR FOM
3	To put in place the necessary transport equipment required for the proper functioning of the park and to maintain it in a cost effective way	1	Upgrade the park's existing fleet of vehicles	Purchase new vehicles		Q1 & Q2	PNZ FOM
				Comprehensive vehicle equipment		Q1	PNZ FOM
		2	Put in place the necessary vehicle management system	Vehicle tracking devices		Q1	PNZ FOM
				Vehicle maintenance		All year	Chef de Service
		3	Reinforce the park's aerial support capacity	Upgrade park's aircraft		Q1	PNZ FOM
				Purchase aircraft for Siniaka Minia		Q1	SMFR FOM
				Aircraft operational costs		All year	FOMs
4	To complete necessary communications network required for the proper functioning of the park and to maintain it for maximum efficiency	1	Upgrade the park's existing communication infrastructure	Upgrade radio communication equipment		Q1 & Q2	PNZ FOM
				Radio communication annual maintenance		All year	FOMs
				Telephone costs		All year	FC
				Internet costs		All year	FC
				Intranet costs		All year	FC
				Other electronic equipment		Q1 & Q2	PNZ FOM
Law Enforcement							
#	Objectives	#	Specific targets or outcomes	Costs		Timeframe	Responsible
1	Provide effective security in the Greater Zakouma Ecosystem, to protect all fauna and flora species and in particular the threatened elephant population	1	Integrated LE strategy	Monthly subscription charges		All year	FC
				Ranger team remuneration		All year	FC
				Ranger team allowances (rations)		All year	FC
				Updating of law enforcement data base		Q1	Volunteer
				Training costs		Q1	Consultant

				Anti-poaching aircraft hours		All year	FC
				Ranger equipment		Q1	FOMs
2	To maintain efficient relations with all law enforcement and local authorities in the periphery	1	Collaboration with local law enforcement authorities	Monthly support to the GNNT		All year	Ass PM
				Monthly support to the <i>Secteur</i>		All year	Ass PM
3	To run a reliable information gathering system to enhance the law enforcement effort in the greater Zakouma area	1	Information gathering system	Information manager salary		All year	FC
				Village radio operator wages		All year	Chef de Service
4	Ensure effective prosecution of offenders	1	Collaboration with judicial authorities	Poacher support while awaiting trial		All year	Ass PM
Conservation, monitoring and habitat management							
#	<i>Objectives</i>	#	<i>Specific targets or outcomes</i>	<i>Costs</i>		<i>Timeframe</i>	<i>Responsible</i>
1	Improve understanding of all key conservation issues in the Greater Zakouma Ecosystem	1	Employ a full team of experienced, motivated and well-equipped conservation and monitoring staff	Research and monitoring team remuneration		All year	FC
				Research and monitoring team allowances (rations)		All year	FC
				Research and monitoring team uniforms		Q1	FOM
				Research and monitoring team equipment		Q1	FOM
		2	Maintain a system of data collection collected by ground patrols, aerial monitoring flights, collaring data, satellite imagery and data gathering amongst the population	Collaring of 30 additional elephant		Q1	PNZ FOM
				Aerial survey costs		Q1	FOMs
				Aouk survey costs		Q1	PNZ FOM
				Volunteer costs		Q3	Volunteer
		3	Where necessary conduct research on key species to keep park management	No additional costs		All year	Researchers

			informed of conservation priorities				
2	Maintain and improve the integrity of the ecosystem through habitat management	1	Exotic species removal	Exotic species removal		Q2 & Q3	Chef de Service
				Planting of indigenous trees		Q2 & Q3	Chef de Service
		2	Bushfire management	Bulldozer cost		Q1	Chef de Service
				Aircraft operational costs		Q1 & Q4	PNZ FOM
				Temporary labour		Q1 & Q4	Chef de Service
3	Restoration of wildlife species that occurred historically	1	Black rhinoceros reintroduction	Reintroduction costs		Q1 & Q2	PM
				Rhino protection and monitoring costs		Q2, Q3 & Q4	Rhino manager
Building a constituency for conservation							
#	<i>Objectives</i>	#	<i>Specific targets or outcomes</i>	<i>Costs</i>		<i>Timeframe</i>	<i>Responsible</i>
1	To employ a full team of experienced and motivated community staff	1	Employ necessary community development staff	The remuneration of the community development staff		All year	FC
				The cost of uniforms for the community development staff		Q1	Comm Coord
2	Support for the Land Use Plan for the Greater Zakouma Ecosystem	1	Validate the Land Use Plan	Validation workshop costs		Q3	Ass PM
				2	Enforce the Land Use Plan through community buy-in	Cost of regular meetings to be held in corridors	
		Cost of bill boards				Q1	Comm Coord
3	A constituency in support of the conservation of the Greater Zakouma Ecosystem	1	Environmental Education Program	Cost of outreach visits		Q1 & Q4	Comm Coord
				Cost of environmental education teaching aids and material		Q1 & Q4	Comm Coord
				Cost of environmental expert		Q1	FC
		2	Provide support to the Education Department	Construction of an additional secko schools		Q1 & Q4	Comm Coord &

						CdS Operations
				Cost of an additional Nomad school in the western corridor	Q1 & Q4	Comm Coord
				Cost of scholarships	Q1 & Q4	Comm Coord
		3	Sensitize the community to ongoing conservation programs as well as the benefits of these programs	Cost of theatre group per play as well as transport costs	Q1 & Q4	Comm Coord
				Cost of logistical support of soccer team	Q1 & Q4	Comm Coord
4	A protected area adhering to IUCN conservation criteria	1	Assist the Government where needed with facilitating the relocation of Bone village	Cost of basic infrastructure	Q4	Ass PM
		2	With the assistance of the Government end agricultural encroachment on the parks south-eastern boundary	Cost of grading the boundary road	Q1	Ass PM & CdS Operations
5	Promote income generation for the populations around the Park	1	Provide full-time and temporary employment in the park	Woman's group project manager	All year	Program manager
				Cost of volunteer to provide community guide training	Q4	Comm Coord & CdS tourism
				The APN in-house consultant will be used for the value adding initiative in the corridors	Q1	Ass PM
		2	Collaborate with other NGOs operating in the area as part of the	No additional costs	Q1 & Q4	Ass PM

			11th EDF EU funding to identify income generation activities and to actively support where possible						
Tourism and revenue generation									
#	Objectives	#	Specific targets or outcomes	Costs	Timeframe	Responsible			
1	To generate tourism revenue while at the same time, reduce donor financing and reliance	1	Employ a full team of experienced and motivated tourism staff	Staff salary costs		All year	FC		
				Staff uniform costs		Q4	CdS Tourism		
				Volunteer guide travel costs		Q4	FC		
				English language course		Q2 & Q3	CdS Tourism		
				Cost of guidebooks		Q1	CdS Tourism		
2	To better manage and coordinate the limited tourism opportunities	1	Provide affordable tourism opportunities for local Chadian Nationals; Camp Salamat	New Camp Salamat construction (discussed under Chapter 6.1)		Q1 & Q4	CdS Tourism		
				3	Provide a value for money, mid-market facility to cater for affluent Chadian Nationals, the local expatriate market and foreign nationals to visit the park; Tinga	Upgrade and camp ground costs (discussed under Chapter 6.1)		Q1 & Q4	CdS Tourism
						4	Provide an exclusive, high yield, low impact tourism facility; Camp Nomade	No additional costs outside of other activities already mentioned	
2				Printing of permits		Q1	CdS Tourism		

			Put in place a central reservation system for Camp Salamat	Office space in Am Timan		Q1 & Q4	CdS Tourism
		2	Put in place a tourism zonation plan	Construction of portable “no entry” signs.		Q1	CdS Operations
		3	Through the centralized operations centre coordinated tourism movements on a dedicated tourism radio channel	Sufficient radios for tourism vehicles and handhelds for guides (already covered under 6.1)		Q1 & Q4	PNZ FOM
		4	Provide guides to self-drive tourists through a community guide cooperative	Handheld radios and chargers for community guides (covered under 6.1)		Q1 & Q4	PNZ FOM
Finance, human resources and administration							
#	Objectives	#	Specific targets or outcomes	Costs		Timeframe	Responsible
1	Oversight and guidance from the Zakouma Foundation	1	Bi-annual board and steering committee meetings	Flights to and from the venue		Q2 & Q4	FC
				Accommodation and meals for board members and invited guests		Q2 & Q4	FC
				Board meeting venue costs		Q2 & Q4	FC
2	A well-managed park with the necessary financial management and corporate governance in place	1	Employ a full team of experienced park management staff	Remuneration, travel and insurance for park management staff		All year	FC
				Park management staff uniforms		Q1	PM
		2	Where necessary send park management staff on related training courses	Language tuition volunteer		Q2 & Q3	Volunteer
				Other training (Babakar GIS)		Q2	FC
				1st aid training and equipment		Q4	PNZ FOM
		3	Continue to improve the general administration, store management, financial management	Serenic implementation		Q1	APN Consultant
				METT assessment		Q3	PM

		reporting, accounting and human resource management				
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8. OTHER ORGANISATIONAL REQUIREMENTS

In addition to the comments made above on the Park organisation, especially in Chapter 6, the following organisation requirements are highlighted:

8.1 Management structure

The principles of the management structure of ZNP are described in the 2010 and 2017 (revised) Partnership Agreement. The key provisions are:

- ▶ Board of Directors will be the final decision making organ of the Foundation. The Board of directors shall:
 - consist of 7 members; 2 representatives from the Government, 3 representatives from African Parks (including a vice-chair) and chaired by the General Secretary of the Ministry of Environment and Fisheries
 - meet at least twice per year, but more often if required
 - seek to make decisions on a consensus basis, but if voting is required it will be on a nominal basis with simple majority voting.
- ▶ The Management Unit is the executive organ of the Foundation, managed by the Park Manager, who will also function as the non-voting Secretary of the Board.

The Management Unit will be supervised by the Board and will require Board approval for the 5-year business plans, annual work plan and annual budgets. However, within this framework, the Management team will have considerable freedom of action in the management of GEFZ.

Unlike the previous organisational structures of ZNP, the present structure has the advantage to put in place (i) direct line management of the entire operation as this is a prerequisite for efficient operations both in terms of law enforcement and cost wise; and (ii) minimal N'Djamena presence.

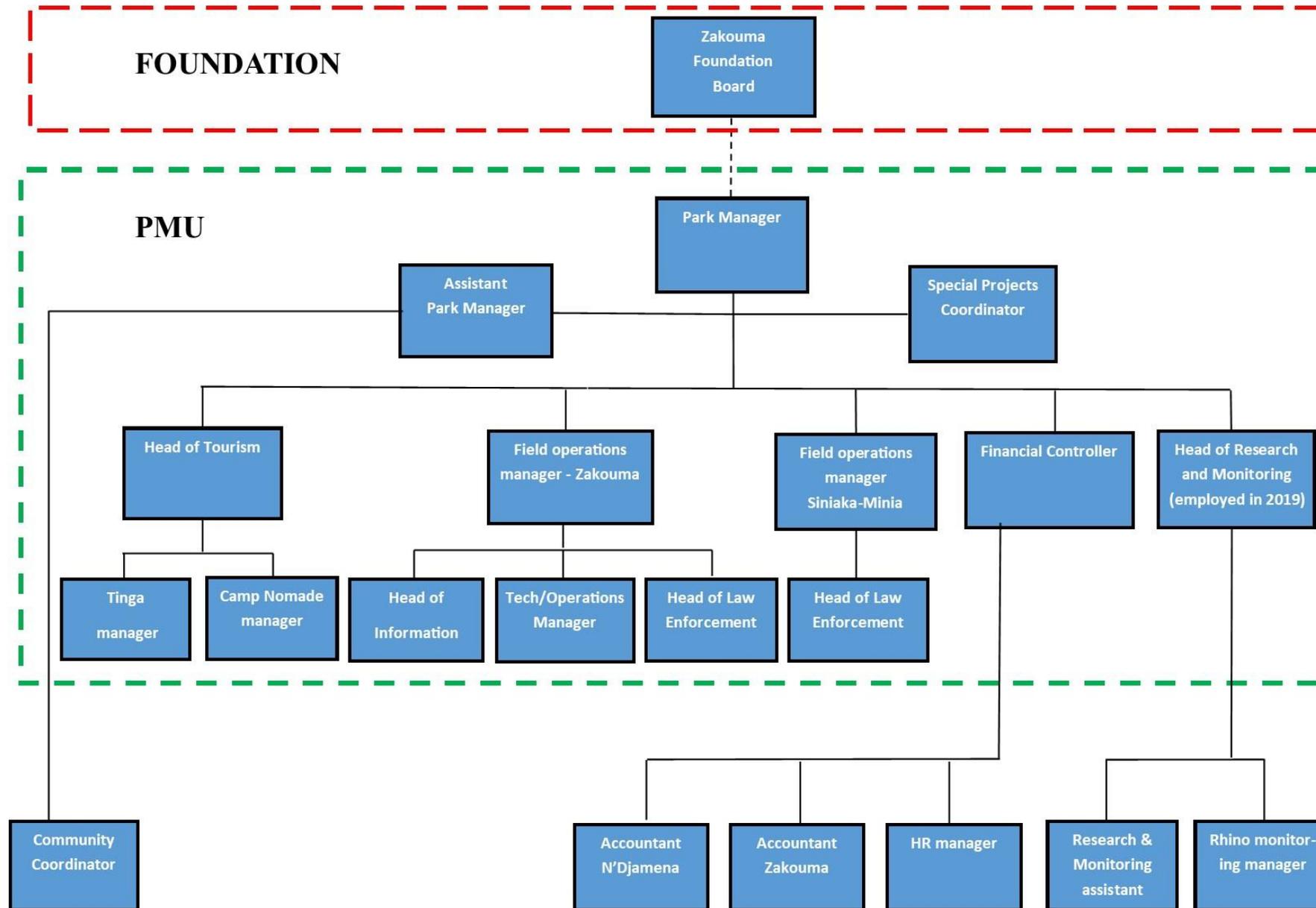


Figure 12: Management Structure ZNP.

8.2 HR principles

The human resources policy of the Foundation will be based on the following principles:

- ▶ Recruitment. Park staff will consist of contract staff recruited by the Foundation and staff seconded by the Administration to ZNP and to whom ZNP will pay a secondment premium.
- ▶ Unified management. The Foundation will establish a unified management of the Park for all staff. The Park Manager will be responsible for managing their careers and the daily organization of work, holidays and evaluation of their performance.
- ▶ Remuneration. The Foundation will be responsible for the general welfare of staff. It will pay salaries based on an identical system and unified for all Foundation staff.
- ▶ Selection of staff, including seconded government staff, will be the sole responsibility of the Park Management. The Foundation determines the number of people required to perform its obligations under its mandate.
- ▶ Disciplinary action. All staff employed by the administration, detached or posted to the Foundation, and who do not perform their tasks satisfactorily, will be subject to disciplinary proceedings. If the default continues after the procedure, they will either be punished in accordance with the disciplinary procedure, or placed at the disposal of the administration to be redeployed outside the park and its periphery in a role that will not affect the performance of the Foundation.
- ▶ Staff appraisal. Each employee will have at least one evaluation per year with his immediate supervisor. The results of these evaluations form the basis for bonuses, promotions and salary reviews.

Table 24: Zakouma staff numbers.

Operations							
	<i>Remark</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>
Zakouma FOM	25% of time		1	1	1	1	1
Siniaka Minia FOM	25% of time		1	1	1	1	1
Technical operations manager		1	1	1	1	1	1
Ass manager & electrician		1	1	1	1	1	1
Storeman			1	1	1	1	1
Drivers		1	1	1	1	1	1
Truck drivers		2	2	2	2	2	2
Driver's assistants		2	2	2	2	2	2
Heavy machinery operators		3	3	3	3	3	3
Mechanics		1	1	1	1	1	1
Apprentices		3	2	2	2	2	2
Welders		2	2	2	2	2	2
Assistant welder		1	1	1	1	1	1
Carpenters		1	1	1	1	1	1
Watchman		4	4	4	4	4	4
Labourer		1	1	1	1	1	1
SMFR Mechanic				1	1	1	1
SMFR tractor driver				1	1	1	1
SMFR driver					1	1	1
SMFR storeman				1	1	1	1
Veterinary assistant		1					
Grooms		5	6	6	6	6	6

Total		29	31	34	35	35	35
Law enforcement							
<i>Zakouma</i>							
Zakouma FOM	75% of time		1	1	1	1	1
Head of law enforcement		1	1	1	1	1	1
Head of information		1	1	1	1	1	1
Administrative assistant		1	1	1	1	1	1
Radio operators		4	5	5	5	5	5
Training manager			1	1	1	1	1
Drivers (logistical)		1	1	1	1	1	1
Horse manager			1	1	1	1	1
Horse team leaders		5	5	5	5	5	5
Horse team secretaries		5	5	5	5	5	5
Horse team ranger/grooms		20	20	20	20	20	20
Grooms		6					
Mamba team leaders		3	4	4	4	4	4
Mamba team secretaries		3	4	4	4	4	4
Mamba team rangers		15	12	12	12	12	12
Mamba team drivers		3	4	4	4	4	4
Mixed patrol team leaders		2	2	2	2	2	2
Gate guards		4	4	4	4	4	4
Tourism guards		2	6	6	6	6	6
<i>Siniaka Minia</i>							
Siniaka Minia FOM	50% of time		1	1	1	1	1
Head of law enforcement			1	1	1	1	1
Radio operators			1	1	1	1	1
Team leaders			3	3	3	3	3
Secretaries			3	3	3	3	3
Rangers			4	4	4	4	4
Total		76	91	91	91	91	91
Conservation							
Research and Monitoring manager				1	1	1	1
Monitors				1	2	2	2
Monitoring manager			1	1	1	1	1
Rhino team leaders			3	3	3	3	3
Rhino team secretaries			3	3	3	3	3
Rhino team rangers			6	6	6	6	6
Rhino team monitors			6	6	6	6	6
Total			19	21	22	22	22
Community							
Ass park manager and head of service		1	1	1	1	1	1
Siniaka Minia FOM	25% of time		1	1	1	1	1
Community coordinator		1	1	1	1	1	1
Community animateurs		1	1	1	1	1	1
Teachers		13	20	20	20	20	20

Boarding school master		1	2	2	2	2	2
Boarding school cooks (seasonal)		3	5	5	5	5	5
Boarding school assistant (seasonal)		1	2	2	2	2	2
Total		21	33	33	33	33	33
Tourism							
<i>Management</i>							
Head of Tourism		1	1	1	1	1	1
Tourism marketing		1	1	1	1	1	1
Private guide liaison		1	1	1	1	1	1
<i>Tinga</i>							
Tinga manager			1	1	1	1	1
Reception		1	1	1	1	1	1
Chefs		2	3	3	3	3	3
Severs		2	3	3	3	3	3
Room attendants		1	3	3	3	3	3
Laundry		1	1	1	1	1	1
Drivers		2	3	3	3	3	3
<i>Camp Nomade</i>							
Camp manager		1	1	1	1	1	1
Assistant camp manager		1	1	1	1	1	1
Chefs		2	2	2	2	2	2
Severs		2	2	2	2	2	2
Room attendants		2	2	2	2	2	2
Laundry		1	1	1	1	1	1
Drivers		2	2	2	2	2	2
<i>Camp Salamat</i>							
Am Timan reservations			1	1	1	1	1
Drivers		2	2	2	2	2	2
Guard (seasonal)		1	1	1	1	1	1
Cooks (seasonal)		3	3	3	3	3	3
Total		29	36	36	36	36	36
Park management, Admin & Finance staff							
<i>Park management</i>							
Park manager		1	1	1	1	1	1
Special projects coordinator		1	1	1	1	1	1
<i>Admin & HR</i>							
HR manager			1	1	1	1	1
N'Djamena house attendant		1	1	1	1	1	1
N'Djamena driver		1	1	1	1	1	1
N'Djamena logistics		1	1	1	1	1	1
<i>Finance</i>							
Financial controller		1	1	1	1	1	1

Accountants		2	2	2	2	2	2
Admin clerk - N'Djamena		1	1	1	1	1	1
Petty cash - Zakouma			1	1	1	1	1
Total		9	11	11	11	11	11

8.3 Training needs

As per the partnership agreement African parks appoints the park manager as head of the Park Management Unit and the park manager appoints the park management unit. Where expatriate management are appointed the capacity building of local staff will take place. Where training needs are observed or where training is requested the opportunity for training will be provided. Training can be provided in many areas, both technical and general, both formal and informal and can include in-house training courses, foreign training courses, online courses or on-the-job training. The following training needs have been identified for 2018:

- ▶ Assistant park manager
 - The assistant park manager has requested GIS training.
- ▶ Rangers
 - Refresher training of all existing guards through appointing a training manager and a dedicated refresher training rotation of all teams.
 - On-the-job training / mentoring of ranger teams through external consultants.
 - A selection and Basic Field Ranger training course of new rangers for the rhino protection as well as for the Siniaka Minia Faunal Reserve.
- ▶ Drivers
 - No driving on park vehicles is allowed without a valid driver's license. Some staff members have been identified, or have requested, to undergo formal driver's training.
- ▶ Tourism staff
 - Through an agreement with the Hilton Hotel in N'Djamena tourism staff are receiving on the job training at the hotel in the wet season when the park does not have tourism operations. Training is offered for the following positions: tourism manager, chefs and room attendants.
 - Guides receive a month guides training course by a volunteer consultant on professional guiding.
 - A volunteer consultant is also providing training for the Tinga hospitality staff.
- ▶ Community guides
 - In line with the new Tourism Development Plan that does not allow for self-drive tourists without a guide community guides are being trained by the volunteer consultant for the community guide cooperative.
- ▶ Community education officers
 - An environmental education consultant provided training in 2016 / 2017 and will return to assess the progress and advice on additional training if needed.
- ▶ Financial and Administrative staff
 - Administrative staff is receiving training in the implementation of the InFlow stock system software.
 - Accounting will be receiving training in the new Serenic accounting software.

8.4 Reporting and audits

Through continuous reporting all stakeholders will be kept informed of what is happening in the park. The following reporting procedures are in place:

- ▶ Monthly reports per service / department to the park manager

- ▶ Standard African Parks monthly report circulated to all stakeholders (including Government partners, the board and donors)
- ▶ Informal monthly feedback meeting to the Ministry of Environment and Fisheries
- ▶ Annual report to be consolidated in the African Parks annual report
- ▶ Annual operations report to the Zakouma Foundation board (first board meeting of each year)
- ▶ Annual financial report to the Zakouma Foundation board (first board meeting of each year)
- ▶ Monthly financial report and fund request to African Parks
- ▶ Donor reports as per donor requirements
- ▶ Annual tourism report to the Ministry of Tourism
- ▶ African Parks request audits of all parks from time to time
- ▶ Donors sometimes request audits at the end of funding periods
- ▶ External organizations are sometimes invited to do audits of the park management
- ▶ The partnership agreement gets evaluated every 5 years.

8.5 Volunteers

The following volunteer needs have been identified for 2018:

- ▶ A person to sort out the parks archive to ensure all historical data, research, etc. is available in both soft and hard copies
- ▶ A data entry person that can capture all historic hand-written post patrol reports in digital format
- ▶ Somebody to provide refresher training for the parks permanent driver/guides as well as the community guides
- ▶ A teacher to provide both French and English language tuition.

9. MANAGING PARTNERSHIPS

9.1 Stakeholder relations

Below is a summary of NGOs operating in the periphery of Zakouma National Park and already working with AP in Zakouma (in Salamat, Moyen Chari and Guera Regions).

Table 25: Overview with NGO's operating in the region.

NGO Name	Focus area	Areas where they can help or implement an additional activity
<p>Islamic Relief World (IRW)</p> <p>Office: Am Timan</p>	<ul style="list-style-type: none"> - Implementation of an Arabic Gum Sector Support Project (<i>Projet d'Appui à la Filière Gomme Arabique - PAFGA</i>) - Implementation of Hydrology and Sanitation Projects - Implementation of projects for fight against AIDS 	<ul style="list-style-type: none"> - Implementation of community works / water points for villages along the migration corridors - Management of Arabic gum extractors along migration corridors - Mapping
<p>Organisation pour le Développement Local et la Protection de l'Ecosystème (O.D.L.P.E)</p> <p>Office: Am Timan</p>	<ul style="list-style-type: none"> - Rational and sustainable management of ecosystems (community structure, establishment of structures for protection and conservation development plans for <i>cantons</i>, awareness on the elephant migration corridors and protection, etc.) - Fight against poverty 	<ul style="list-style-type: none"> - Sensitization of communities on wildlife conservation including elephant conservation, protection of areas and migration corridors - Environmental Education
<p>UICN</p> <p>Zone d'intervention : périphérie du PNZ</p> <p>Office : Am-timan</p>	<p>Implementation of the grant « <i>Projet d'Appui au Développement Local II et Gestion des Ressources Naturelles PADL II- GRN</i> »</p>	<ul style="list-style-type: none"> - Work together with Zakouma to provide a cooperative action plan as part of the management and development of natural resources, community support and development of bee-keeping; - Work in synergy with AP for the development of the Land Use Plan; - Work in synergy with AP by building awareness in outlying communities - Support to the initiative of the education program
<p>Projet : Millenium Village</p> <p>Zone of intervention : Canton Salamat 2 /périphérie Est et nord-est du PNZ</p> <p>Office : Am-timan</p>	<p>Infrastructure, Health, Education, Agriculture, environment, water and sanitation</p>	<ul style="list-style-type: none"> - Working in synergy with the PNZ to support schools and health centres in the periphery, the flow of information and awareness and management of natural resources.
<p>PAPAT (Projet</p>	<ul style="list-style-type: none"> - Providing Structure to communities 	<ul style="list-style-type: none"> - Structuration of communities

d'Appui à la production) Zone of intervention : régions of Salamat and Guéra Office : Am-timan	- Natural Resource Management	- Elaboration of PDL - Financing village brigades (game scouts)
Union Fautière de la ZP (UF/ZP) Zone of intervention : ZNPP – Office : Goz Djarat	- Providing Structure to communities - Natural Resource Management	- Community awareness for the implementation of the Land Use Plan
UNICEF	- Health and education	- Working in synergy with PNZ to support schools and health centres in the periphery.
ATPGA	- Implementation of an Arabic gum project	- The development and commercialisation of Arabic gum as alternative income generation.

9.2 External Communications and Public Relations

This task is important since the Foundation, being an independent entity, will have multiple contacts with the Chadian authorities and donors to ensure good management and adequate funding of the Foundation. Public relations are also intended to enhance the reputation and image of the park with the Chadian population and even internationally on an ongoing basis. This is important to attract financing and increase tourism revenues. Regular feedback will be given to donors.

The Director of the Foundation will be fully responsible for public relations and external communication of the Foundation. The Director will support members of the Board, the Park Director and African Parks Network. The following activities are planned:

- ▶ Networking. With support from APN head office, members of the Board and donors behind the Foundation, the Foundation will be responsible for the international development strategy of the Park and its periphery, to seek funding necessary for its operation and the establishment of a trust fund and research partners, both technical (research, tourism development, rural development, etc..) and financial.
- ▶ A monthly report. Sent by email to all parties directly and indirectly involved in the Park (mainly the local authorities and other interested parties).
- ▶ Website. Although the Zakouma web site will be managed by APN head office, regular updates and contributions will be needed. Assistance with this will also be provided by other department heads.

Social Media. Zakouma actively manages a Facebook page for the park, that includes coverages on both Camp Nomade and Tinga camp. The park also uses Instagram as a platform to promote the work being done and at the time of writing has 1577 followers, many of whom are Chadians.

10. SPECIAL PROJECTS

SPECIAL PROJECT – ZAKOUMA BLACK RHINO TRANSLOCATION
Description / discussion
Reintroduction of locally extinct species: Black Rhinoceros
Goals / measureable outcomes
<p>The reintroduction of black rhino to ZNP is an essential component of the long-term goal to improve the biological integrity of the Greater Zakouma Area. Black rhino are known to have occurred in Zakouma and therefore the Chadian Government has officially requested a donation of black rhino from the South African Government. The publicity that such a reintroduction will produce will go a long way in improving the image of Chad and attracting tourists to the park (essential for the future sustainability of the park). The boost to moral that such a monumental event will give to the park staff, local population and government is immeasurable.</p> <p>The ecotype which originally occurred in ZNP is now officially extinct (<i>Diceros bicornis longipes</i>) therefore the most abundant ecotype found in Southern Africa will be reintroduced (<i>D. b. minor</i>).</p>
Required resources (people and other)
<p>The rhinos will be donated (or provided under a Custodianship Agreement) by the South African Government and the transport for these rhino will be provided by the Chadian Government. African Parks today is in the fortunate position to have management in place with extensive rhinoceros re-introduction experience. Yet, an experienced wildlife veterinarian and a caregiver for the period in the holding pens will be required during the reintroduction.</p>
Minimum pre-requisites for the project to proceed
<p>It is felt that because there are Intensive Protection Zones already in place around the elephant population it will not be difficult to extend the security to include black rhino.</p> <p>Following the favorable outcome of an assessment of the security situation and habitat in Zakouma by the South African Government they have agreed to enter into an MoU with the Chadian Government to provide 6 black rhino.</p> <p>Habitat and water: it is known that black rhino previously occurred in ZNP. Personal observations and the findings of the AfRSG confirm that the habitat is good and water is permanent in the proposed release area.</p> <p>Detailed ‘Road map and Work plan’ to be in place prior to translocation.</p> <p>Staff experienced in rhino relocations and rhino management to be in place.</p> <p>Only animals of the right age, sex and condition to be considered.</p>
Cost
<p>It is anticipated that the relocation will cost African Parks about \$ 466,000 (including the first year of operations) if the 6 rhinos and air transport are donated. A small sanctuary will need to be erected, as per recommendations of the AfRSG, with material not available in Chad. This will increase the cost substantially. Fence posts are already being stockpiled from the exotic Neem trees which are being removed. \$ 50,000 of this budget has already been received from the Don Quixote Foundation and the majority of these funds has already been utilized.</p>

SPECIAL PROJECT – SAVANNAH LIGHT SPORT AIRCRAFT
Description / discussion
Purchase of Savannah LSA - new
Goals / measureable outcomes
<p>The inclusion of Siniaka Minia Faunal Reserve under the GEFZ will bring an additional 470,000ha directly under GEFZ, and with the Melfi hunting block and corridors between the two being so important to the success of the GEFZ, this size increases to over 1 million ha. The most suitable aircraft for the current SMFR application will be a two-seater Savannah ULM – used with great success in Chinko. It has a slightly larger carrying capacity and fuel load than the Foxbat as well as an all aluminium body (unlike the foxbat), important in wet humid conditions. With the backup of the C206 from Zakouma for logistics the Savannah will be used primarily for aerial surveillance. The threat of nomad incursions from the south, west and east is very real from October onwards and in the late dry season aerial support in finding these nomadic groups in the thick Siniaka bush and sending in quick response teams will be critical in securing this landscape. When back in Zakouma, particularly in the wet season when the nomadic threat to Siniaka has reduced it will also be used to assist where possible on Zakouma surveillance operations to cut down on C206 flying hours.</p>
Required resources (people and other)
<p>The Savannah needs to be purchased most probably from South Africa and flown up to Chad with a ferry pilot. The resident pilot for Siniaka has over 400hrs on LSA aircraft in conservation flying. Airstrips will be cut open in Siniaka and to some degree in Melfi for the plane.</p>
Minimum pre-requisites for the project to proceed
<p>A donor for the purchase price and ferry cost.</p>
Cost
<p>The purchase price of the aircraft is approximately \$46,000 (R600,000) excluding the ferry flight, which is a nominal amount. Operating expenses are \$75/hr (including replacement engine/prop costs).</p>

SPECIAL PROJECT – ZAKOUMA CESSNA 206 TURBINE
Description / discussion
Purchase of Cessna 206 Turbine – second hand
Goals / measureable outcomes
<p>The size of the ecosystem to be covered and its remoteness render the use of a small aircraft mandatory in the Greater Zakouma Ecosystem. With the inclusion of Siniaka Minia and Salamat Faunal Reserves there will be considerably more logistical flights required to support work in these areas (most notably SMFR due to a base being built in the park). Additionally, with elephant collars now used to assist with the location of the animals a large portion of flying is logistics flying to provide both support to the anti-poaching teams on the ground as well as the actual deployment/extraction of these teams. Without a suitable plane the park will struggle to not only fulfil its operational needs but also maintain area integrity.</p> <p>Although the current Cessna 182 is an excellent aircraft, the lack of availability of AVGAS in Chad, and the prohibitive cost of AVGAS if it can be imported, does not make this aircraft the most suitable option for Zakouma.</p> <p>Although the initial purchase price of a turbine driven plane is high there are substantial benefits to having a 6-seater. Due to the turbine engine only needing replacement after 3,500hrs the costs/hr (excluding purchase price) are not that much more of a C182 (even though it uses twice the fuel/hr). We would also be using less hrs/year due to faster operating speeds, having a larger load capacity (two trips per scout team as opposed to several) as well as a far safer (via the more powerful engine) platform to operate off short bush strips in high temperatures. With the popularity of Camp Nomade and the possibility of it expanding further a more suitable aircraft is also needed for the scenic trips provided as part of the package.</p>
Required resources (people and other)
A suitable plane has already been identified in the USA with 900hrs on the engine. It will need to be ferried over from the USA.
Minimum pre-requisites for the project to proceed
<p>Finding a willing donor for the purchase price.</p> <p>Selling/donating our current C182 with P.Ponk engine to an AP project where the availability of Avgas is not an issue.</p> <p>All the landing strips in and around Zakouma are already suitable for this type of aircraft.</p> <p>Both GZS pilots would need to do the required (minor no of hours) conversion onto the C206.</p>
Cost
The purchase price of the aircraft is \$559,000 excluding the ferry flight, which is a nominal amount. Operating expenses are \$248/hr (including replacement engine/prop costs) but with less hours being required there will be an overall saving. Refer to Strategy 6 on page 53 for a more detailed breakdown of options and costs.

11. FINANCIALS

To be added by Samuel and Alberto.

APPENDIX I – KEY ACHIEVEMENTS

The Zakouma National Park has received European Union funding since 1989, with about €20 million having been expended for park management (CURESS I and CURESS II projects). The latest EU financed project (CURESS II) was particularly inefficient in terms of law enforcement and the poaching of elephant reached catastrophic levels between 2006 and 2009.

In 2009, it became clear to the government and donors alike that a drastic change in management was required. The AP model of managing national parks caught the attention and in May 2009 a Memorandum of Understanding was signed between AP and RAPAC (*Réseau des Aires Protégées en Afrique Centrale*) to test the AP model with the support of the EC. The result was that the Chadian government agreed to delegate the management of ZNPP to a Public Private Partnership Foundation with AP. The Partnership Agreement was agreed in June 2010 and in April 2012, a ministerial decree nominated the parks first *Comité de Direction*. The Zakouma Foundation was established by the end of 2015.

AP took over management of Zakouma in October 2010 and introduced an integrated park management system under a Park Manager. Below are the key achievements, given annually, which have been undertaken.

2010 key achievements

- ▶ Funding was secured for the transition period and a temporary Park Manager was in place in Zakouma towards the end of October for two months.
- ▶ Anti-poaching guards were seconded to the project and patrols were organised again. Additional horses were purchased, guards were sent to the 4 outposts (Ibir, Goz Djérat, Kach-kacha and Kiéké), urgent guard equipment was purchased and the VHF radio repeater was moved to Bone hill to try and improve the coverage.
- ▶ Aerial surveillance of the park was done in collaboration with the Wildlife Conservation Society (WCS).
- ▶ The roads were opened up again after the wet season as well as the Zakouma airstrip.

2011 key achievements

- ▶ A full time Park Manager was employed who commenced work on 1 February 2011.
- ▶ An additional aircraft was brought to Zakouma to assist with logistical flying.
- ▶ The VHF radio system was upgraded which included two repeaters and a microwave link which now provides radio coverage throughout the park and periphery and a 24/7 manned control room was built and installed from where all anti-poaching activities are monitored, planned and controlled.
- ▶ Ten elephants were fitted with satellite/VHF collars in order to track their movements more closely.
- ▶ An aerial wildlife count was done in conjunction with WCS.
- ▶ The Zakouma airstrip was weatherized and was in use throughout the wet season (unlike previous years, all the staff stayed at Zakouma HQ during the wet months).
- ▶ The Ibir airstrip was lengthened and an additional airstrip was prepared in the north-western corner of the park (Korom West), while an additional four airstrips were built within the greater ecosystem to assist with logistical support during the wet season (two in the west; Koutoutou and Zan and two in the north; Abgué and Daral-eche).
- ▶ Wet season guard posts were built at Darasna, Daral-eche and Koutoutou to facilitate the wet season law enforcement.

- ▶ A new patrol system was initiated towards the end of the dry season to improve patrol coverage as well as for the wet season protection of the elephants within their extended range of $\pm 9,000\text{km}^2$. Guard equipment was procured for the wet season such as tents, ponchos, gumboots, waterproof GPS's, satellite telephones, etc.
- ▶ The horse programme was improved upon; work commenced on the construction of stables at Zakouma for the patrol horses. A veterinary assistant was employed to care for the health of the horses. Improved equipment was procured, including saddles and saddle pads to alleviate the continual problems with saddle sores. Larger and more suitable horses were purchased.
- ▶ The opening up of roads in Zakouma following the wet season commenced in October and an additional grader driver was employed to assist in getting the roads open again as quickly as possible.
- ▶ General clean-up and improvements made to Zakouma headquarters, buildings repainted and repairs and improvements made to houses.
- ▶ The number of elephants poached during the year was greatly reduced with 7 known deaths compared to 39 in 2010.

2012 key achievements

- ▶ Ongoing improvements to the communication system in Zakouma with additional radios purchased and power supply systems upgraded; in the radio control room, at the two repeaters stations and in Ibir and Goz Djérat detachments. Regular repairs and maintenance to ensure 24/7 communication throughout the ZNPP. Radios donated to GNNT and Sector.
- ▶ 6 elephants were fitted with satellite/VHF collars in order to track their movements more closely, including a herd identified by villagers in the northern elephant range. A total of 16 elephants have been collared to date. Two have died with a remaining 14 collared elephants being monitored daily with either 4- or 8-hourly readings.
- ▶ 5 tiang and 1 cheetah were fitted with satellite/VHF collars in order to track their movements more closely and understand their movements in the wet season.
- ▶ An aerial wildlife count was done in conjunction with WCS.
- ▶ A steering committee was formed with individuals who will eventually become board members of the Zakouma Foundation.
- ▶ Efforts were continued to improve upon relationships with local and central government officials. At year end our relationship with both is better than it has been in past.
- ▶ An additional two wet season guard posts were built to facilitate wet season LE, one at Domoti and the other at Heban, each with temporary huts and an airstrip.
- ▶ Two more airstrips were constructed in the wet season range. Maintenance of the other 7 airstrips was done.
- ▶ Two motorbike LE teams were created, each with 5 men. The motorbike teams patrol the park periphery and will also be used for patrols along the park boundary in the dry season.
- ▶ The anti-poaching patrol system was continually upgraded and improvements made throughout the year. This included improving equipment; new uniforms and boots were given to each guard. The ranger corps was divided into 9 teams instead of previous 6 teams.
- ▶ A new anti-poaching strategy was prepared which includes the recruitment, training and equipping of a dedicated intervention team for Zakouma and the region. Proposals were submitted to government requesting permission for the recruitment of 25 more guards, purchase of arms, ammunition and special equipment for the Intervention Team as well as the acquisition of more ammunition for the ZNP LE team.

- ▶ Additional guard houses were constructed at Goz Djérat and Ibir following the disbanding of the Kach-kacha and Kiéké guard posts (except for one guard at each). All guards were relocated to Goz Djarat and Ibir with Zakouma being the base during the dry season from where all patrols depart.
- ▶ Each anti-poaching guard together with 8 sector guards underwent 1 month weapons training at Zakouma.
- ▶ A new strategy for information gathering was prepared and work commenced on this new phase. This includes placement of VHF and HF radios in key villages in the periphery with a secure channel and the creation of toll free telephone numbers to which information can be sent.
- ▶ The daily deployment of guards was centralised in the radio control room. A team was identified to make joint decisions on the placement of patrols on a daily basis based on elephant collar or informer information.
- ▶ Law enforcement investigations and preventative operations were undertaken as necessary throughout the year.
- ▶ The stables in Zakouma were completed and staff trained in horse care and management. Two riding arenas were constructed as well as a holding camp. Improvements to equipment are ongoing.
- ▶ Training of horses and riders was undertaken. Training of horses concentrated on hands-free riding which allows for more control during contact situations. Horses were also trained to halt on a voice command.
- ▶ Training of the veterinary assistant, also in the diagnosis of disease. A laboratory was built at the stables, also equipped with a microscope which assists in the better management of the herd.
- ▶ Tinga camp was upgraded; landscaping was done and the unsightly and unsafe visitors centre was removed. 8 rooms were fully refurbished with alterations made to internal layout ensuring more comfort. General improvements were made to the main bar/lounge area; the ceiling was raised, new furniture was constructed at the park workshops, the parking area was changed, a new store built, all buildings repainted, etc. New linen, pillows, mattresses, towels, etc. were procured as well as new equipment for the kitchens. The tourist shop was revamped.
- ▶ The power supply system in Tinga was redone which will allow for a more efficient power supply greatly improving the guest experience and ensuring the more effective running of the camp and at the same time making it more environmentally and aesthetically friendly.
- ▶ New staff housing was constructed in Tinga and provided with electricity. This includes stores and a laundry. A washing machine was purchased.
- ▶ A 'star-bed' camp was assembled for use at Reguiek during the height of the dry season.
- ▶ Work commenced on the Salamat Camp which will be for day visitors and for campers.
- ▶ The Tinga game-viewing vehicles were completely rebuilt, allowing for more comfort and space. The vehicles were panel beaten, spray painted and repaired. Canvas seat covers were made and a canvas roof was added.
- ▶ The data gathering for the Land Use Plan commenced.
- ▶ Advertisements for community personnel were posted, interviews undertaken and some staff employed. Links with local NGOs working in the communities surrounding ZNP were built up and improved.
- ▶ Four school teachers were employed and temporary classrooms constructed in Goz Djérat. A joint decision was made to assist with the provision of schools and teachers in the key villages in the periphery and fundraising commenced as well as preparation of materials, sourcing of equipment, etc. Two educators were employed as part of our outreach programme.

- ▶ The disputed demarcation of the park was investigated and a working group was formed to endeavour to end the uncertainty which has been ongoing for years. A final meeting was held and a joint report prepared which will be submitted to government for deliberation.
- ▶ A new Finance/Administration director was employed as well as a logistics officer.
- ▶ Ongoing general clean-up and improvements made to Zakouma headquarters, buildings repainted and repairs and improvements made to houses. Road maintenance and improvements ongoing.
- ▶ All vehicles in ZNP were panel beaten, sprayed painted and stickers applied.
- ▶ A fundraising trip was undertaken to the USA and a donor has committed to purchase a dedicated aircraft for ZNP.
- ▶ The elephant numbers for the ecosystem have remained stable although the park population shows a decrease of 10 animals. Within the ecosystem however there has been an increase of 3 elephant. The recruitment to the population is still at almost 0%.

NOTE:

The consequence of one of these achievements resulted in the murder of 6 ZNP guards at Heban. This was because of the expansion of the ZNP protection activities into areas not previously patrolled in the wet season.

The Heban killing was a huge blow for us; however the outflow of actions following the killing will hopefully have several long-term positive effects on the protection of the Zakouma elephant herd, especially through the wet season. The Heban case also for the first time gave strong evidence of Sudanese military involvement in elephant poaching in Chad.

2013 key achievements

- ▶ A new armory/ivory room was constructed adjacent to the radio control room.
- ▶ Six rows of seats were constructed and fitted on the small Mercedes truck to allow for seating for 30 people for visits of school children and villagers to Zakouma. A roof was also constructed. These seats are easily removed for when the truck is needed for other work.
- ▶ The site was identified and work commenced on the day visitor cum camping area; named the Salamat camp this camp was used by school groups during the dry season when temporary grass huts were built. The main relaxation area was half complete when the rains started.
- ▶ The refurbishment of Tinga camp was completed and the final improvements made to the Reguiek Camp.
- ▶ The recruitment of 30 new young guards took place and two training sessions were undertaken. 13 of the best of these new recruits were selected to form the Rapid Response Team, called Mamba.
- ▶ Two elephants were fitted with satellite/VHF collars in Zakouma. A total of 18 elephants have been collared to date. Two have died and a further two collars have stopped working with a remaining 14 collared elephants being monitored daily with either 4- or 8-hourly readings.
- ▶ 1 tiang (collar retrieved after the death of an animal) and 4 lions were fitted with satellite/VHF collars in order to improve our knowledge of rare animal movements.
- ▶ The steering committee met twice during the year, once in Zakouma and once in Ndjamen.
- ▶ Two Ministers of Environment visited Zakouma as did the new Governors for the Salamat region. The relationship of AP and the government, both local and central, is the best it has ever been with the President's office now also involved in assisting the park where necessary.

- ▶ An additional two wet season guard posts were built to facilitate wet season LE, one at Koran in the west and the other at Abouich in the north, each with temporary huts.
- ▶ Two more airstrips were constructed in the wet season range at Koran and Abouich. Maintenance of the other 9 airstrips was done.
- ▶ Bicycles were introduced as an additional patrol method and after initial trial period folding bicycles were purchased from France.
- ▶ The anti-poaching patrol system was continually upgraded and improvements made throughout the year. This included improving equipment; new uniforms, boots, backpacks, tents, mosquito domes, etc. were given to each guard as well as to the sector guards and GNNT.
- ▶ Specialist equipment was purchased including pistols, sniper rifles, night vision, bullet proof vests, etc. as per the proposal submitted to government in 2012 for a new anti-poaching strategy.
- ▶ A new aircraft was purchased for Zakouma in America and flown to the park. A pilot was employed on a one year contract and a second pilot, a Chadian, was identified and will undergo additional training early 2014 to be able to take over the piloting of the C182.
- ▶ A block making machine was imported from South Africa and two weeks training given in the use thereof. The machine was bought specifically for the construction of schools in the periphery.
- ▶ A feed store was built at the stables as well as an additional enclosure for the patrol horses.
- ▶ Indigenous trees were planted to replace the exotic neem trees which are being removed.
- ▶ A primary school was constructed in Goz Djérat and work commenced on the secondary school. Temporary classrooms were constructed for use prior to the completion of the permanent buildings.
- ▶ A third repeater station was put up on Heban hill to ensure radio communication in the northern elephant range. Due to problems with the people in Bone village the repeater was removed from Bone hill and put on Ibir hill. The repeater housing was rebuilt and the solar power setup improved during this relocation.
- ▶ As part of the new strategy for information gathering a toll-free telephone system was put in place with a smartphone which records all phone calls – this is to enable the free flow of information from the population to the park HQ. Six radios were also installed in villages in the park periphery and villagers trained in the use thereof as part of this strategy.
- ▶ The daily deployment of guards was centralised in the radio control room. A team was identified to make joint decisions on the placement of patrols on a daily basis based on elephant collar or informer information.
- ▶ An intelligence control centre was put in place and dossiers opened on all open cases.
- ▶ A LE consultant was brought in to assist with ongoing training of the new recruits, put in place and intelligence system and to identify and train the anti-poaching management team.
- ▶ Training of the eco-guard in mapping (GIS) and database management was undertaken.
- ▶ The initial extensive survey for the Land Use Plan was undertaken and the data analyzed and maps prepared.
- ▶ A large carnivore monitoring survey was undertaken. The final report written indicated that the Zakouma lion population is at least 117 individuals. ID cards were prepared for 53 lions.
- ▶ Two collaring operations were undertaken in the greater Chad with 10 elephants from 7 populations being collared.
- ▶ Equipment was purchased and donated to the Ministry of Environment for use in protecting elephants in the rest of Chad.
- ▶ An Elephant Protection Centre at the AP office in Ndjamena was set up for use of Ministry.

- ▶ A meeting was held with the President of Chad to update him on work being done and request assistance with special permissions.
- ▶ Two VIP groups were hosted during the year including a group of donors.
- ▶ A fundraising dinner was held in New York with the President of Chad and Ministry of Environment and African Parks.

The elephant numbers for the ecosystem have remained stable with no elephants poached in the ecosystem to date in 2013. However due to the growth rate still being just above 0%, with only 3 known calves born in the first quarter of 2013, the numbers are still going down even though there is no more poaching. However, from March more and more calves were seen and by the end of the year the tide had changed and a photograph taken on 19 December 2014 showed 21 newborn calves – the much awaited turning point for the Zakouma elephant population.2014 key achievements

- ▶ No elephants poached in the park or the ecosystem. Newborn elephant calves continue to be seen on a regular basis.
- ▶ The 50th anniversary of Zakouma National Park was celebrated in Zakouma with the President and full parliament attending. An additional 30 temporary accommodation huts were built in Tinga and further 17 at HQ. Two thousand 50th anniversary t-shirts were distributed in the communities to celebrate this big event.
- ▶ The ivory stockpile of Chad was burned by the President.
- ▶ Three monuments were built at Goz Djérat: one in memory of the guards slain on duty, a second to commemorate the centenary and a third for the opening of the two ‘Elephant Schools’ in Goz Djérat.
- ▶ General maintenance work was done in park headquarters and in the various anti-poaching outposts.
- ▶ Work commenced on improvements to the Darasna outpost. This will be completed by year end.
- ▶ A new road was made between HQ and Goz Djérat. Routine road grading and maintenance was undertaken.
- ▶ A new fabrication workshop was constructed using the old ULM hangar.
- ▶ A roof was constructed between two 20’ shipping containers with one section walled off to provide new storage for the ULM and under-roof storage for steel.
- ▶ The hangar was extended to properly accommodate both aircraft.
- ▶ A new engine, propeller, controls, exhaust, etc. was purchased for the C180 and fitted. Major maintenance work was done to both aircraft, also on the avionics.
- ▶ Repairs and maintenance was done to all airstrips in the ecosystem.
- ▶ A visit was made to Dubai to purchase 3 Toyota Prado vehicles for the RRT. Other equipment (spare engine, rims and tyres, 12v batteries) not available or very expensive in Chad were also purchased.
- ▶ An aerial survey together with a ground survey was undertaken in the Ennedi Plateau area in the Sahara Desert of north-eastern Chad, following a request from government to become involved in the area. A proposal is being written which will be finished by year end.
- ▶ A trailer system to supply water, horse food and food for the guards in the field was implemented, with two trailers constructed.
- ▶ Improvements were made to the stables and equestrian equipment. Saddle bags were purchased in America and provided for better distribution of weight carried by the horses. The programme to continually improve the horse stock is ongoing.

- ▶ Further improvements were made to the anti-poaching strategy of the park. An additional patrol method was introduced using a combination of foot patrols and vehicles, to allow for greater mobility and area coverage.
- ▶ The then assistant head of LE participated in two training courses in America and Cameroon.
- ▶ The one assistant head of LE was promoted to head of department.
- ▶ A training officer from the French army spent 9 months in Zakouma doing further training with the RRT and other guards.
- ▶ Guard equipment (uniforms, boots, mosquito domes, etc.) was purchased and issued to each ranger.
- ▶ Support to the local environmental law enforcement officers continued with an agreement and financial aid to each.
- ▶ One hartebeest and one tiang were collared in Zakouma.
- ▶ Routine firebreak and early burning was undertaken. An aerial ignition system has been purchased to test lighting fires from the air in inaccessible, remote areas where burns are needed before the end of the wet season.
- ▶ Elephant collaring took place in Zakouma where 4 elephants were fitted with collars. A further 6 elephants were collared in 3 elephant populations in the rest of the country.
- ▶ An Aerial Total Count was undertaken in Zakouma.
- ▶ Aerial Total Counts were undertaken in the Binder Léré and Chari River elephant areas as well as in Manda National Park.
- ▶ Liaison commenced with the International Crown Foundation to assist them with information gathering on Black Crowned Crane breeding in Chad.
- ▶ Discussions commenced with the IUCN/SCCSs Cheetah and African Wild Dog Conservation Program in Northern, Western and Central Africa as they would like to hold their annual meeting in Zakouma in 2016.
- ▶ A poster was made for the Ministry of Agriculture & Environment to initiate an information campaign on cheetah and African wild dog in Chad.
- ▶ Awareness of the toll-free telephone numbers continued with posters and business cards printed distributed.
- ▶ A National Elephant Conservation and Management Strategy for Chad was written with the first draft complete at the time of writing. A workshop with all stakeholders to discuss this strategy and have it accepted is scheduled for early December 2014.
- ▶ A temporary coordinator for the Chad Elephant Project was employed and a full time coordinator sought to commence the next phase for two years. Employment will be finalized before year end.
- ▶ Further improvements were made to the National Control Room in Ndjamen and assistance provided to MAE as and when needed in the greater Chad elephant populations.
- ▶ The first documents and maps for the Land Use Plan were completed and sensitization meetings held with central and regional government representatives in N'Djaména, Am Timan and Mongo. Sensitization meetings in the relevant villages with the village leaders have commenced at time of writing.
- ▶ A substantial donation was received for the school building programme. The primary school at Goz Djérat was completed and a secondary school was also constructed together with 12 teachers' houses and ablution blocks with a library/study room as well as an environmental centre.

- ▶ A chainsaw milling system was imported from Sweden and set up to cut invasive alien Neem trees to make planks for school desks. The design of an economical school desk was finalized and plank cutting commenced.
- ▶ Discussions commenced with a candidate to undertake the introduction of environmental education and the setting up of the environmental centre.
- ▶ The nomadic community of Amdouma on the parks northern boundary was provided with a village radio and 5 horses to augment their village security programme.
- ▶ The large racehorse, Horus, spent the dry season in the park periphery and was used by the nomads for breeding. This 'service' was provided free of charge.
- ▶ Environmental awareness and educational visits to the park of school children and local village elders continued with groups staying in Camp Salamat.
- ▶ Park management continued communication with the communities on the park boundary including the nomadic communities on Gara Plains. Illegal livestock grazing, fishing and wood collection remain an issue and meetings were held to reiterate the park rules.
- ▶ A Strategy for Building a Constituency for Conservation for the greater ecosystem was completed and presented to all stakeholders.
- ▶ Tinga Camp provided accommodation for 15 United States Marines who used ZNP as a training ground for the training of Mobile Brigade Guards. The park provided accommodation and food for the 100 Chadian recruits trained by the marines.
- ▶ A second borehole was drilled in Tinga Camp due to insufficient water from the present borehole when the camp is busy.
- ▶ Funding was secured for an upmarket mobile camp and Camp Nomade was designed and built.
- ▶ The initial arrangements were made for 3 visits in 2015 of private guides to promote Camp Nomade.
- ▶ All necessary procedures for the creation of the Zakouma Foundation were completed with the final stage expected to be complete by year end.
- ▶ Steering Committee meetings were held as well as the required meetings with the EU and Ministry of Agriculture & Environment and the Ministry of Planning.
- ▶ Contact with TV Tchad continued throughout the year with various items related to Zakouma being televised i.e. 50th anniversary event and the first LUP meetings. A link was also developed with **Tchad Environnement** a magazine produced by MAE. Contributions to this magazine will continue to be made.
- ▶ An EU monitor assessed the project as per the agreement with the European Union.
- ▶ The annual audit was completed and the next tranche of EU funds was received in full.
- ▶ Various film crews and journalists were hosted and shown around during the year (about 10 in total).
- ▶ The Zakouma section of the AP website was updated.
- ▶ A Field Operations Manager, Tourism Liaison Manager and new Finance and Administration Director were employed.

2015 key achievements

Park Management and Infrastructure

- ▶ A visit was made to Dubai to purchase 1 Toyota Prado vehicle for Camp Nomade and one small tipper truck for the school building programme. Other equipment (spare engine, rims and tyres, 12v batteries) not available or very expensive in Chad were also purchased.
- ▶ General maintenance work was done in park headquarters and in the various anti-poaching outposts.
- ▶ The Darasna outpost was completed and used during the wet season of 2015.
- ▶ Several new game viewing roads were made. Routine road grading and maintenance was undertaken. New tyres were purchased and installed on the grader.
- ▶ Major repairs were done to the tractor and it was used extensively with the disc plough on road maintenance to break up dry clods of black cotton soil, and to demarcate game viewing roads.
- ▶ Major repairs were done to the Zakouma-Goz Djérat road after serious erosion caused by flooding. Several gabions were built to prevent future flood damage.
- ▶ The ULM was stripped and packed away as it is no longer airworthy and too costly to repair.
- ▶ A new engine, propeller, controls, exhaust, etc. was purchased for the C182 and will be fitted early 2016. The required annual inspection was done to both aircraft in conjunction with required maintenance work. Both aircraft have been fitted with a fuel flow meter to ensure economical flight. Each aircraft also had an engine monitor fitted, which greatly improves engine management and safety, especially in these hot conditions.
- ▶ Repairs and maintenance was done to all airstrips in the ecosystem. A further two airstrips were made inside the park in the core elephant range in the east of the park.
- ▶ Nzi tsetse fly traps were made and deployed in the worst hit areas, to control tsetse numbers for tourism and rhino reintroduction purposes.
- ▶ The removal of exotic Neem trees in and around Zakouma HQ continued chainsaw milling system was imported from Sweden and set up to cut invasive alien Neem trees to make planks for school desks. The design of an economical school desk was finalized and plank cutting commenced.
- ▶ A second borehole was drilled in Zakouma HQ due to the ongoing cloudiness of the original borehole water following the severe flooding of 2014.
- ▶ Assistance was given to the Ennedi project with the translocation of 6 ostriches to Ennedi. Crates were built and help was given during the capture operation.
- ▶ Major changes and improvements were made to all of the stores in Zakouma, with stock-taking done at the same time.

Law Enforcement

- ▶ There have been two poaching incidents in the park in the past few months, with 3 elephants killed. To our knowledge, only two tusks have left the park with poachers.
- ▶ A repeater was installed on the water tank in Tinga camp to improve communication. Improvements continued on the radio system and the Control Room. A HD television screen was installed and a new monitoring system was put in place to aid with the decision relating to daily patrol deployment (although this is still not functioning fully and needs more input).
- ▶ The pistols, precision rifles and ammunition arrived in Chad and the RRT underwent training in the use of these weapons. The radio operator, head of LE and LE drivers also received training in

the use of pistols. Training in night vision equipment was also given. All guards were also trained evidence collection and the preparation of a good court case. This will continue.

- ▶ The 3 Prado vehicles arrived from Dubai and were rebuilt to LE field operation standards.
- ▶ Five Zakouma rangers took part in the Le Treg marathon in Ennedi, northern Chad. The run was done in memory of the 6 rangers killed in Heban. They took positions 1, 2, 3, 4 and 6.
- ▶ EAGLE Network spent time in Chad to assist with legal matters and two Chadians underwent training in Cameroon and Congo in wildlife trafficking, investigation methods, etc.
- ▶ Guard equipment (uniforms, boots, tents, etc.) was purchased and issued to each ranger.
- ▶ Support to the local environmental law enforcement officers continued with an agreement and financial aid to each.
- ▶ 6 new motorbikes were purchased and donated to GNNT for use by the GNNT guards patrolling the periphery areas.
- ▶ The judge from Am Timan, court staff and prison directors visited the park and spent a night in Tinga. Meetings were held while they were here.
- ▶ A boat with outboard motor and life jackets was purchased to assist with wet season deployment of guards. It however arrived too late for use, and will be tested in 2016.

Conservation, monitoring & habitat management

- ▶ Newborn elephant calves continue to be seen on a regular basis with a second peak of births in December 2014/January 2015. It is estimated that at least 45 calves have been born since mid-2013.
- ▶ An elephant cow and her calf died of natural causes following an illness.
- ▶ Improvements to the horse programme continued primarily with regards improving the horse stock. A hay store was built in Zakouma and a smaller one in Ibir to protect the hay from rain.
- ▶ Routine firebreak and early burning was undertaken using a new system of aerial ignition for lighting fires from the air in inaccessible, remote areas where burns are needed before the end of the wet season.
- ▶ Elephant collaring took place in Zakouma where 4 elephants were fitted with collars.
- ▶ There was close collaboration with the Coordinator for the Chad Elephant Project and all administration of his project was handled by the N'Djaména office. The first draft of the National Elephant Conservation & Management Strategy for Chad was finalized with the final version being submitted to government in December 2015.
- ▶ The Chairman of the AfRESG visited Zakouma to make an assessment of the security, habitat, logistics, etc. for the proposed black rhino reintroduction. He endorsed the operation, as well as the introduction of *D. b. minor* instead of *D. b. michaeli*.
- ▶ A letter of request and a preliminary Sequence of Events was submitted to Chadian government for the reintroduction of black rhino to Zakouma. This motivation resulted in the Chadian President requesting a donation of 6 black rhino from the South African President.
- ▶ Zakouma NP assisted the Sahara Conservation Fund with an aerial survey in the desert area of western Chad.

Creating a constituency for conservation

- ▶ Billboards demarcating the northern elephant migration corridor on the main N'Djaména-Am Timan road were erected. This includes a billboard, in French and Arabic, advertising the toll-free number.

- ▶ Sensitization meetings with regards the Land Use Plan in all relevant villages continued and were completed. A Land Use Plan report was written once all meetings had been completed.
- ▶ The Grand Imam from Am Timan visited Zakouma and he has committed to providing his full support to the work being done through preaching and awareness visits to neighbouring villages.
- ▶ The school building programme continued with the Goz Djérat primary and secondary schools being completed. Two dormitory blocks and a supervisor's house were also constructed, and the school was fenced in. A primary school was built in Ibir.
- ▶ An economical and simple school bench was designed and manufactured at HQ. A bunk bed for the dormitory blocks in Goz Djérat was also designed and manufactured using material easily available in Chad. The equipment will be installed before the new school year commences.
- ▶ Environmental awareness and educational visits to the park of school children and local villagers continued with groups sometimes staying in Camp Salamat. 2653 people visited the park during the 2014/2015 season as part of this programme with a further 734 independent visitors utilizing Camp Salamat.
- ▶ Park management continued communication with the communities on the park boundary including the nomadic communities on Gara Plains. Illegal livestock grazing, fishing and wood collection remain an issue. A horse was donated by a community on Gara Plains and a request was made for mobile schools for the nomads.
- ▶ The boundary issue was resolved by government and beacons put in place. The Kiéké communities will continue with planting of millet within the disputed zone for one more season. The boundary demarcation has caused tension between the park and the Kiéké communities.
- ▶ A Community Engagement Plan for Zakouma National Park was prepared, and submitted to the relevant authorities.
- ▶ The authorities were made aware of the illegal village in the northern corridor Hilélé. It was agreed to build a post there for future control.
- ▶ A borehole was financed by Camp Nomade in Kach-kacha village because numerous guests from Tinga and Camp Nomade visit the Saturday market.

Tourism and other revenue generation

- ▶ Camp Nomade had its soft opening, mainly to expose the camp to the specialist private guides who will market the camp. 3 guide recce visits were undertaken. Some improvements were made following these visits. Some paying guests also made use of the camp.
- ▶ A camp manager and food and beverage manager for Camp Nomade were employed for the next season.
- ▶ Tinga Camp did well the past season and further improvements were made the wet season of 2015.
- ▶ The camp manager of Tinga was sent to an upmarket tourism facility in Rwanda for training.
- ▶ A tourism report was prepared to summarise the activities, revenue, visitors, etc. for the 2014/2015 season.

Finance, human resources & administration

- ▶ All necessary procedures for the creation of the Zakouma Foundation were completed with the foundation receiving legal recognition at the time of writing. There are however a number of issues which still need to be rectified.
- ▶ Steering Committee meetings were held as well as the required meetings with the EU and Ministry of Agriculture & Environment and the Ministry of Planning.
- ▶ Two EU expert's visited the park to assess and review the next EU funding grant.

- ▶ The annual audits were completed (APN and EU) and the next tranche of EU funds was received in full.
- ▶ Various film crews and journalists were hosted and shown around during the year, with Camp Nomade getting good publicity.
- ▶ The Park Manager gave a talk in the Royal Geographical Society auditorium on the work in Zakouma and another in Amsterdam to the Dutch board and investors.
- ▶ The Zakouma section of the AP website was updated.

The elephant population is now finally on the increase after more than 10 years of decline. The >45 calves born in the past 2 years means that even though 7 elephants died in 2015 (5 as a result of poaching - 3 adults shot and 2 calves - and 2 natural deaths), the population is on the increase. The >45 is very a conservative estimate and the aerial survey of 2016 will give a more accurate total.

It is worrying about the apparent increase in demand, and the resultant two poaching incidents in the past 2 months after 4 years of no incidents inside the park (NOTE: 1 group left with only 2 small tusks and the 2nd left with no ivory). An extra effort will need to be put in to further expand our information gathering/intelligence and maneuverability in the wet season. Many calves get left behind after a stampede, resulting in more elephants dying than just the animals shot by the poachers. Following the successful return of one calf to the herd in October 2015, all efforts will be made to return stranded calves to the breeding herd in future, and not try and raise them at HQ.

2016 key achievements

Park Management and Infrastructure

- ▶ General maintenance work was done in park headquarters.
- ▶ The Control – Intelligence Room complex was refurbished with extra offices built, to enable all LE staff to work together. A high wall was built between the main office block and armory to provide better security.
- ▶ Battery power was installed at the main office complex to allow for 24/7 power, not only for the control room but for the entire building.
- ▶ Two Forward Operating Bases were built, each with a storeroom, guard accommodation and stables for eight horses. Water collection gutters and tanks were put in after unsuccessful drilling for water. Each FOB has an all-weather airstrip, a 42m mast for the radio antennas and a repeater station.
- ▶ New game viewing roads continued to be made. Routine road grading and maintenance was undertaken and several all-weather roads were made for the 2016 wet season to allow for better coverage of anti-poaching teams.
- ▶ The old MF tractor continued to require maintenance, with all spares having to be imported. It was decided to purchase a new tractor, but to keep the old one running to ensure earlier preparation of roads for the tourism season and park management.
- ▶ A 40' shipping container was purchased in South Africa and filled with equipment for the Park. This includes solar equipment, fencing and electrification equipment for the FOBs and stables, the new tractor and implements mentioned below, spare parts for the Caterpillar machines, tyres, t-shirts for the village outreach programme, uniforms, etc. etc.
- ▶ A tractor driven slasher was imported to ensure good maintenance of the Zakouma airstrip in the wet season. A pull-grader was purchased which will be used with the new tractor to do the game

viewing roads early in the next season. This will enable two road maintenance teams to work consecutively in the future.

- ▶ The annual major repairs and maintenance was undertaken on all of the park vehicles during the wet season. Two trainee mechanics from Am Timan worked in the Zakouma workshop again for their long holiday.
- ▶ A 30-ton second-hand truck was purchased locally to enable park management to move the bulldozer efficiently.
- ▶ Repairs and maintenance was done to all airstrips in the ecosystem. A further two airstrips were made inside the park in the western core elephant range, and another was made north-east of Reguiek outside the park.
- ▶ The removal of exotic Neem trees in and around Zakouma HQ continued. The chainsaw milling system imported from Sweden continued to be used to cut planks for school desks.
- ▶ The big storeroom in Tinga was refurbished, with cupboards and wired-off sections installed to ensure secure storage of all equipment from Tinga and Camp Nomade for the wet season. The laundry in Tinga was also expanded and improved, for use by both camps.
- ▶ Both aircraft were resprayed and the C182 had a new engine and propeller installed.

Law Enforcement

- ▶ Following the two poaching incidents in the second half of 2015, the park was hit with a further, far worse incident in January 2016. A known 4 adults and two calves were killed. All ivory was recovered by the LE teams. This incident was a blow especially as information had been received that the poachers were heading into the park.
- ▶ Following the three poaching incidents, the LE strategy was evaluated and some changes were implemented, also as a result of the change in elephant movements in the wet season. These changes included the construction of two FOBs, an extra repeater station and airstrip, and all-weather roads to the west of the Salamat River.
- ▶ A fourth repeater was installed at Attreïdate FOB and the repeater from Tinga was moved to Rhino FOB to ensure better coverage in the south of the park. A link system was installed to allow for the tracking of the radios.
- ▶ A consultant was brought in to introduce an improved LE monitoring system which includes the use of a smart phone installed with Google Earth for navigation and planning, the use of personal trackers to ensure improved real-time monitoring. A Google Earth based mapping system was introduced for the guard deployment team to use when planning patrol deployments. All LE staff were trained.
- ▶ Guard equipment (uniforms, boots, tents, etc.) was purchased and issued to each ranger. Red-dot sights were purchased for the AK47s used by the guards. The sights were fitted on their rifles and training given in the use thereof. The sights result in much better accuracy when shooting.
- ▶ Ranger training continued with the focus being precision rifle and pistol training to 2 members of each horse patrol team, night shooting tactics when using an AK47 and night scope shooting with the precision rifles. All rangers were trained in the correct procedures to follow when collecting evidence and preparing for a court case.
- ▶ Support to the local environmental law enforcement officers continued with an agreement and financial aid to each. The costs of the drilling of a borehole and the installation of a pump at the GNNT detachment in Am Timan was carried by the Park.
- ▶ The regional law enforcement authorities undertook a major law enforcement operation in the Amdouma wetland to remove the illegal Lake Chad commercial fishermen. The fishermen have

caused a lot of problems in the region; apart from reducing the important fish population in the ecosystem, they also upset the local fish trade which has resulted in inflated fish prices.

- ▶ The boat with outboard motor purchased in 2015 was mobilized and training was given to some of the Mamba team in piloting the boat. It was used on the Salamat River during the wet season.
- ▶ Improvements to the horse programme continued and the new pilot employed is also a veterinarian. Further training will be given to the Chadian veterinary assistance that has been managing the stables to date.

Conservation, monitoring & habitat management

- ▶ An aerial survey was undertaken and the results were encouraging with most species showing an increase in numbers. 483 elephants were counted, with 81 being calves of under 3-years of age. This is more than was expected. This figure denotes a definite increase in population, the first in a decade.
- ▶ Routine firebreak and early burning was undertaken using the aerial ignition system introduced in 2015.
- ▶ Elephant collaring took place in Zakouma where six elephants were fitted with collars. The Zakouma aircraft and team also assisted IUCN with the deployment of two elephant collars in south-western Chad on the Cameroon border.
- ▶ There was close collaboration with the Coordinator for the Chad Elephant Project and all administration of his project was handled by the N'Djaména office. All field work was completed in order for the final plan of action to be prepared.
- ▶ Regular meetings were held with the South African Ambassador, to review the efforts to persuade the South African government to donate six black rhino to the government of Chad, as requested by President Déby in 2015.
- ▶ Zakouma NP provided the use of the C182 to the Ennedi Project for an aerial survey in the Ennedi project area.
- ▶ Cheetahs were suddenly regularly seen with fourteen sightings of at least 4 groups having been made, with tourism guests also seeing them regularly. An identification database was started and all sightings mapped.
- ▶ An anti-ivory trafficking banner, in French, Arabic, English and Chinese, was designed and printed for display at mainly the international airport, but also at the regional headquarters around Zakouma.

Creating a constituency for conservation

- ▶ Sensitization meetings with regards the Land Use Plan in all relevant villages continued and were completed. A Land Use Plan report was written once all meetings had been completed.
- ▶ The school building programme continued with a primary school being built in Kiéké. Solar power was installed in the study centre at the Goz Djérat Secondary School. Block making commenced for the construction of another primary school in 2016.
- ▶ Over 650 school desks were manufactured during the year.
- ▶ Six 'secko' schools were built, and a teacher employed for each school. The idea with these schools is that they can be built quickly, at a low cost, for villages which currently have no schools, in order to speed up the Elephant School programme.
- ▶ An environmental education instructor was identified and he will commence his three-month contract at the end of October to put in place an environmental education syllabus for the schools and to further train the extension officers (animateurs).

- ▶ Environmental awareness and educational visits to the park of school children and local villagers continued with the groups from afar (i.e. Mongo) staying in Camp Salamat. 5033 people visited the park during the 2015/2016 season as part of this programme, with each receiving a ‘I have visited Zakouma’ t-shirt.
- ▶ Park management continued communication with the communities on the park boundary including the nomadic communities on Gara Plains with a big meeting being held with the nomads on Gara. The correct park boundary was also explained to them at this meeting. Illegal livestock grazing, fishing and wood collection remain an issue.
- ▶ The boundary issue had been resolved by government and beacons put in place in 2015, however additional and stronger beacons were installed this year on the correct south-eastern park boundary in order to make the boundary more visible. Further extensive meetings were held with the local communities. The boundary will now be enforced, and no more planting of crops will be allowed after the 2016 wet season. The community of Goz Djérat acknowledged the correct boundary immediately and did not plant crops inside the park after the wet season of 2015.
- ▶ As part of our efforts to assist the communities in the disputed south-eastern corner, it was decided to build a dam east of Kiéké for the nomadic communities to use. Previously the only standing water at the end of the dry season is in a dam on the boundary. The boundary dam will now be for wildlife and the newly constructed dam will be for the communities.
- ▶ Although the authorities have been aware of the illegal village, Hilélé, in the northern corridor and agreed to initiate the relocation, the village is still there and is growing. It is hoped that it will be moved before the end of 2016.
- ▶ The government has agreed to move Bone village but this is being driven by them and ZNP will only provide technical support for the actual move.
- ▶ A joint bee-keeping project was undertaken, together with IUCN. Bee-keeping kits were handed out and training given. This is primarily an IUCN project, and ZNP’s assistance was once off.
- ▶

Tourism and other revenue generation

- ▶ Camp Nomade had its official opening. Unfortunately there were some cancellations due to the bombings which took place in Chad and Ivory Coast, however regardless it was a very good first season. A further two familiarisation trips were held for the private guides and a donor group, hosted by the APN CEO, stayed in the camp.
- ▶ The Tinga Camp season was not as good as hoped due to travel restrictions imposed on expatriates living in N’Djamena. Camp Salamat had a total of 1231 local Chadian visitors staying free-of-charge.
- ▶ A new road was opened between Aboudeia and Amdouma which much reduced the travel time from N’Djamena.
- ▶ A tourism report was prepared to summarise the activities, revenue, visitors, etc. for the 2015/2016 season. This was translated into French and distributed.
- ▶ The Tourism Manager attended a travel market in Paris, together with OTT.
- ▶ Two tourism staff members attended a month long guide training course in South Africa.
- ▶ Two tourism staff members attended a month long intensive English training course in Cameroon.

Finance, human resources & administration

- ▶ The first official meeting of the Zakouma Foundation board was held in January.
- ▶ All meetings as required by the EU and Ministry of Environment Fisheries were held.

- ▶ Several meetings were held with the EU delegation in Chad with regards the next EU grant for Chad. Planning meetings were also held, and an expert was employed by African Parks in Johannesburg to assist with the preparation of the application proposal.
- ▶ Preparations were made for the two official evaluations to be undertaken by EU appointed evaluators of 1) the PPP and 2) the project.
- ▶ The achievements of ZNP over the first five years of AP management were presented to officials in the Salamat and Guera regions. The meetings were broadcast on local television.
- ▶ The annual audits were completed (APN and EU) and the next tranche of EU funds was received in full.
- ▶ The Park Manager attended The Giant's Club Summit in Kenya in April 2016, as a member of the team of conservationists participating in a panel-led discussion on the frontline protection of elephants, and the way forward. It is hoped that President Déby will become a member of The Giant's Club in the next year.
- ▶ Jerome Starkey, the Africa Correspondent for The Times (UK) spent a week in park.

2017 key achievements

Park Management and Infrastructure

- ▶ General maintenance work was done in park headquarters. One of the visitor's houses was renovated for the Siniaka Minia FOM and the Zakouma SPM.
- ▶ A 40' shipping container was purchased in South Africa and filled with equipment for the Park. This includes fencing material for the rhino boma's, workshop equipment, linen, towels and other equipment for Camp Nomade, staff uniforms and 5000 community outreach shirts. The container purchased in 2016 was received in the Park in March.
- ▶ A Toyota 100-series station wagon was converted to a Law Enforcement wet-season vehicle, and a second vehicle will be converted at the end of 2017. The leaf spring pack of one of the Land Cruisers was replaced.
- ▶ The C182 had a new firewall installed after it was broken during a rough landing.
- ▶ The boat with outboard motor purchased in 2015 was mobilized and three staff members were trained in piloting the boat. The boat was used intensively on the Salamat River during the wet season, when the aircraft required repairs.
- ▶ 'No Speeding' and 'No littering' signs were placed at the Goz-Djarat entry gate and road markers were placed on the Abou-deïa – Amdouma road.
- ▶ The construction of an all-weather road from FOB Attreidate to Ibir was started during the dry season, using the Zakouma bulldozer and grader, and finished in June 2017.
- ▶ A small evacuation bridge on the Ibir road was constructed.
- ▶ The preparation for the construction of a secondary school at Chinguil started. The foundations were laid before the wet season, blocks have been prepared at Goz-Djérat and school benches have been constructed and painted in the Zakouma workshop. The construction of the school will commence when the dry season allows for access to the village.
- ▶ Fifteen ranger houses were built in Goz-Djérat.
- ▶ An airstrip was opened at Al Ham in the north of the Park, to assist with anti-poaching support in this area.
- ▶ In preparation for the rhino reintroduction, the start has been made with the construction of the rhino boma's and a sanctuary at Rhino FOB. The fence line has been opened and the material is

being shipped to N'Djamena, the actual construction will start once Rhino FOB is accessible again by vehicle.

- ▶ The Renault truck, which was broken down for the entire tourism season, was repaired in N'Djamena and will return to Zakouma mid-October.
- ▶ Three employees obtained their driver's license in N'Djamena. An additional four staff members received internal training. Once they have reached the acquired level, they will be examined in Am Timan.

Law Enforcement

- ▶ No poaching incidents have been recorded in 2017. Five elephant carcasses have been found, all elephants died from natural causes. The ivory was recovered and stored in the armoury.
- ▶ Five rangers completed a Basic Combat Tracking course in Akagera, Rwanda..
- ▶ A Basic Field Training course was held to select rangers to supplement the Mamba and horse patrol teams. Nine rangers graduated in March 2017 .
- ▶ Following the three poaching incidents, the LE strategy was evaluated and some changes were implemented, also as a result of the change in elephant movements in the wet season. These changes included the construction of two FOBs, an extra repeater station and airstrip, and all-weather roads to the west of the Salamat River.
- ▶ Guard equipment (uniforms, boots, tents, etc.) was purchased and will be received at the end of 2017. Unexpected delays on the supplier side unfortunately delayed the uniform and equipment issuance for the Law Enforcement teams.
- ▶ Refresher ranger training continued with the focus being medical and rifle training. The training was given by a team from the US embassy, supported by US-AFRICOM, during a field visit to Zakouma.
- ▶ Support to the local environmental law enforcement officers continued with an agreement and financial aid to each.
- ▶ The park's Intelligence Officer received training in Garamba National Park. Subsequently, Naftali Honig, the Garamba Anti-poaching Information Coordinator visited Zakouma in July to continue the training and implement an intelligence database in Zakouma.
- ▶ A consultant visited Zakouma in June to assess and improve the ergonomics of the equipment carried on horse patrols. New saddles and saddle blankets have been designed and will be purchased in 2018.
- ▶ An additional three horses were purchased to supplement the horse patrol teams.

Conservation, monitoring & habitat management

- ▶ Using photographic material, 526 elephants were counted in early 2017.
- ▶ Routine firebreak and early burning was undertaken using the aerial ignition system introduced in 2015.
- ▶ Following African Parks' assistance in establishing the Chad National Elephant Strategy, the coordinator of the strategy presented on his work of the past two years and also presented the draft Chad Elephant Strategy at an occasion held in N'Djamena. All elephant strategy equipment managed by African Parks has been returned to the Ministry of Environment, and going forward African Parks will only be involved in the implementation of the strategy in protected areas managed by African Parks within Chad.

- ▶ Preparations for the rhino reintroduction in 2018 are taking place, as requested by President Déby in 2015. The MoU between the Chadian government has been signed in October, and a rhino management plan is being written by Dr Richard Emslie. A delegation made up of representatives of the South African Department of Environmental Affairs, South African National Parks, the Chadian Ministry of Environment and Fisheries and the South African Embassy in Chad visited the park in May to look at the suitability for the planned rhino introduction.
- ▶ Zakouma NP provided the use of the C182 and pilot to the waterbird survey in Chad.
- ▶ The removal of invasive Neem trees (*Azadirachta indica*) in Zakouma NP continues. For every tree that is removed from the Park, two African Mahogany (*Khaya senegalensis*) are planted.

Creating a constituency for conservation

- ▶ Sensitization meetings with regards the Land Use Plan in all relevant villages continued and were completed. A final Land Use Plan report was written once all meetings had been completed.
- ▶ A community outreach programme was started to plant African Mahogany in Goz-Djarat. All 73 sites have been prepared and the trees will be planted during the last months of 2017.
- ▶ The school building programme continued with the secondary school in Chinguil. The foundation for this school has been laid, blocks have been fabricated for the walls and construction material has been purchased. The construction of the school will continue after the wet season.
- ▶ Six ‘Secko’ schools continue to be supported by Zakouma, and a teacher employed for each school. The idea with these schools is that they can be built quickly, at a low cost, for villages which currently have no schools, in order to speed up the Elephant School programme.
- ▶ An environmental education consultant visited Zakouma at the start of this year to put in place an environmental education syllabus for the schools and to further train the extension officers (animateurs).
- ▶ Environmental awareness and educational visits to the park of school children and local villagers continued with the groups from afar (i.e. Mongo) staying in Camp Salamat. 3,546 people visited the park during the 2016/2017 season as part of this programme, with each receiving a ‘I have visited Zakouma’ t-shirt. The number of visitors through the outreach programme decrease slightly in comparison to previous years, resulting from logistical difficulties with the Renault truck dealing with mechanical problems for the entire season, the two Camp Salamat game viewers being regularly used to support Camp Tinga and the groups coming from further away from the Park, thereby increasing the travel time.
- ▶ The boundary issue had been resolved by government and beacons put in place in 2015, however additional and stronger beacons were installed this year on the correct south-eastern park. The boundary has been enforced, and no more planting of crops are allowed after the 2016 wet season. Upon flying over Kiéké in October, two fishing villages and clearing of land for agriculture has been observed. The region is difficult to access during the wet season; the enforcement of the land use plan will be prioritized as soon as this area is accessible on the ground.
- ▶ The village of Hilélé was has not yet been moved by the regional government. The government agrees that this illegal village should be moved, following several meetings, the community suggested two other sites for the village. Unfortunately, both of these sites are still within the elephant migration corridor. The matter will be followed up after the wet season.
- ▶ A meeting was held with the nomads, farmers, local Government and other stakeholders to discuss the corridors to be used by the nomads for their return north at the end of the dry season. A meeting was held with the leaders of a large fishing village (2,500 inhabitants) that started to the south-east of the park to catch fish as the water sources are drying up at the end of the dry season.

Tourism and other revenue generation

- ▶ The second season for Camp Nomade was very successful, the camp generated a profit of \$201,698,-
- ▶ The Tinga Camp had a good season with the highest number of visitors coming from the French and US nationals working in N'Djamena. It was observed that Chadian guests now mostly use Camp Salamat for their visits to Zakouma.
- ▶ The Tourism manager, Ting camp chef and several waiters and house-keepers received intensive hospitality- and management training at the Hilton hotel in N'Djamena.
- ▶ Camp Salamat received 1,685 tourism visitors, an increase of over 400 guests compared to the previous year.
- ▶ The tourism report was prepared to summarize activities, revenue, visitors, etc. for the 2016/2017 season. This was translated into French and distributed.
- ▶ Private guide Kyle de Nobrega will visit Zakouma in November 2017 to provide training for the drivers and guides, and assist with the design and construction of two game viewing hides.
- ▶ Ms Rachel Nuwer visited Zakouma in January and subsequently wrote an article on the park for National Geographic.

Finance, human resources & administration

- ▶ On 8 October 2017 a new Partnership Agreement has been entered into between African Parks and the *Ministry of the Environment and Fisheries*, that recognizes the "Greater Zakouma Functional Ecosystem" (GEFZ), comprising of the Zakouma NP, the Bahr Salamat and Siniaka Minia Faunal Reserves. It also recognizes the need to continue and strengthen the operational management of the Zakouma NP and to extend it to the adjacent conservation areas (Siniaka Minia FR, Bahr Salamat FR, Great Wildlife Migration Corridors) as funded by the EU 11th EDF finance called the "Support to the Concerted Management of Protected Areas and Fragile Ecosystems of Chad" (APEF).
- ▶ Two successful board meetings of the Zakouma Foundation were held in January and June 2017. The last board meeting of the year will be held in November.
- ▶ All meetings as required by the EU and Ministry of Environment Fisheries were held.
- ▶ Several meetings were held with the EU delegation in Chad with regards the next EU grant for Chad.
- ▶ The two official evaluations to be undertaken by EU appointed evaluators of 1) the PPP and 2) the project are taking place; the reports will be finalized by October 2017.
- ▶ The annual audits were completed (APN and EU).
- ▶ A donor group of the Dutch and Swedish Postcode Lottery visited Zakouma in January.