

hogs *Phacochoerus africanus*) and Patas monkey (*Erythrocebus patas*). Most of this meat is destined for the bushmeat market in Conakry and it is smoked before shipping.

As to the smoked meat that enters the national market and passes through Sangarédi, which is an important hub for this commerce, it comes from much further, up to 48 km in a straight line from Sangarédi according to surveys. However the supply zone is certainly large and may extend to Guinea Bissau.

0.3.2.11 Firewood and charcoal

To attempt to understand the use of woodfuel (including its origin and the pattern of consumption in the town), semi-structured and often opportunistic interviews were conducted with people supplying woodfuel to Sangarédi in ten villages in the Study Area, or in the zones that might eventually be mined. In parallel, 108 households chosen randomly in the town of Sangarédi were surveyed regarding the needs and uses of wood energy, according to season. Field data were collected from 25 November to 7 December 2013.

There are two major centres for acquiring woodfuel within the town, the large Sunday market in Thiankou Naye and the central daily market at Limania.

Several significant geographical features influence the distribution and accessibility of woodfuel resources in the Sangarédi hinterland. For example, a large percentage of the area is composed of bowal grasslands that offer no potential for tree-harvesting. Active mining zones are inaccessible in terms of woodfuel harvesting. Similarly, the Cogon River is probably an important natural barrier to woodfuel resources on its eastern side, since there is only one road bridge near town which provides access (Cogon Lengué).

The configuration of the road network is another significant geographical factor shaping the accessibility of the hinterland's woodfuel resources. For example, the farthest woodfuel source areas from Sangarédi are along roads.

Tentatively, the geography of the woodfuel footprint of Sangarédi can be described in terms of three zones spreading out from the town. The inner zone is a belt only a few kilometers wide around the town's edge where some townsfolk as well as the inhabitants of the hamlets within this area exploit firewood resources. Beyond this,

spreading out to a radius of roughly 10 km from the town centre is a zone of mixed firewood and charcoal exploitation. Moving out into the furthest zone, exploitation becomes more dispersed and charcoal production dominates in this outer zone.

0.3.3 Description of the VECs for the biological environment

0.3.3.1 *Introduction*

Three VECs were retained to evaluate biological impacts:

- Important biological species;
- Important biological habitats; and
- Biological resources.

These three components were divided into several subcomponents. This is particularly the case for the important species, because the sensitivities of the species to various actions of the Extension Project vary enormously.

Other aspects could have been considered (for example ecosystemic values), however these aspects were judged either to have been taken sufficiently into account by the three main components, or been taken into account by components in the other disciplines (physical and social).

The choice of components and subcomponents and the judgment on their importance is based as much as possible on well-established and justified criteria, described in the following sections.

0.3.3.2 *Important biological species*

Introduction

The categories of the IUCN are the most complete and up to date. The IUCN categories are described in IUCN Red List Categories And Criteria - Version 3.1 Second edition (IUCN, 2012).

The most recent status reports, as well as available data, are given on species data sheets on the IUCN website (<http://www.iucnredlist.org/search> - The IUCN Red List

of Threatened Species. Version 2014.2.). The data sheets were consulted and validated between June and September 2014.

The applicable IUCN categories (IUCN, 2012) are:

- Critically Endangered (CR);
- Endangered (EN);
- Vulnerable (VU);
- Near Threatened (NT);
- Least Concern (LC);
- Data Deficient (DD); and
- Not Evaluated (NE).

Although the IUCN data and evaluations are critical in the identification of important species for the ESIA, they must nevertheless be used with caution.

First of all, it must be recognized that the IUCN evaluations do not concern all the species present. For certain groups like mammals, assessments have been done on most species, but for others the number of species assessed is restricted. For example the botanists from Kew Gardens assume that at most 5% of the Guinean plants have been assessed by the IUCN. It is therefore important to ensure that species not evaluated but demonstrably important are considered.

Even within the assessed species, an important number remain in category DD, therefore potentially important species but for which at this point there is a lack of data sufficient for the attribution to a category.

It must also be recognized that the assessments are in constant evolution. For example the three species of endangered vultures present (hooded vulture, white-backed vulture and Rueppell's griffon vulture) were only put in the EN category in 2012, following a decline in their populations. The status of the hippopotamus is actually under revision and it is probable that the category, especially for the West African populations, will be revised upwards.

With the advances in taxonomy following the use of DNA studies, many statuses need revision. For example it is likely that the Nile crocodile in fact includes two species and that the species present in Guinea is a species that will have a higher

status once the situation is re-evaluated. The same is true of the African dwarf crocodile where the specimens from the Study Areas likely belong to a new species.

It must be remembered that the distribution of species in Guinea is still only known in a very fragmentary way. This is illustrated by the number of important range extensions of species reported in the ESIA. Nevertheless it is clear that certain species present have very restricted ranges and are endemic to very limited regions such as the Sangarédi area. These endemic species are of high importance and must be assessed as such even in the absence of an IUCN assessment.

The important species have been divided into two groups

- Biological species of first priority; and
- Biological species of second priority.

Species of first priority are defined as those identified by the IUCN as Critically Endangered (CR) or Endangered (EN), plus those species where the available data strongly suggests that they may have that status in the near future. These species are given a “High” rating in the “value of the VEC” column in the assessment of impacts.

Species of second priority are defined as those defined by the IUCN as Vulnerable (VU) or Near Threatened (NT), plus those species where the available data strongly suggests that they may have that status in the near future. These species are given a “Medium” rating in the “value of the VEC” column in the assessment of impacts.

In conclusion, the identification and classification of the important biological species is a complex topic. There will always be a relative lack of presence data and species status assessments. Nevertheless the study has shown the presence of a large number of status species that cover a good representation of the types of organisms present (plants, terrestrial and marine mammals, birds, terrestrial and marine reptiles, amphibians, freshwater and marine fish). The broad representation allows the satisfactory identification of the types of impacts and their ranges.

Species of first priority

Nineteen species present in the Study Areas have been classified as first priority. These species are described in a summary fashion on Table 0-14 and in more detail

in Annexe 4-3. As indicated on the table, the presence of all of these species was established during ESIA fieldwork in 2013. For most of these species these are the first confirmations of their presence in the Study Areas.

Table 0-14 First priority biological species

Scientific name	English name	Type	IUCN status	Presence	Notes
<i>Hemidactylus kundaensis</i>		Reptile - lizard	Critically Endangered (B2ab(iii))	Sangarédi (field work EEM ESIA, 2013)	Endemic to Sangarédi subprefecture
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Reptile - marine turtle	Critically Endangered (A2bd)	Kamsar (field work EEM ESIA, 2013)	
<i>Cynisca cf oligopholis</i>		Reptile - amphispènien	Endangered (B1ab(iii))	Sangarédi (field work EEM ESIA, 2013)	Endemic to Sangarédi subprefecture – species not yet described?
<i>Phrynobatrachus pintoï</i>		Amphibian - frog	Endangered B1ab(iii)	Sangarédi (field work EEM ESIA, 2013)	Endemic to the Sangarédi area
<i>Pan troglodytes verus</i>	Chimpanzee	Mammal - primate	Endangered (A4cd)	Sangarédi (field work EEM ESIA, 2013)	
<i>Procolobus badius</i>	West African red colobus	Mammal - primate	Endangered (A2cd)	Sangarédi (field work EEM ESIA, 2013)	
<i>Epinephelus guaza (=marginatus)</i>	Dusky grouper	Marine fish	Endangered (A2d)	Kamsar (field work EEM ESIA, 2013)	
<i>Rhinobatos cemiculus (=Glaucostegus cemiculus)</i>	Blackchin guitarfish	Marine fish	Endangered (A4bd)	Kamsar (field work EEM ESIA, 2013)	
<i>Epiplatys njalaensis</i>		Freshwater fish	Endangered (B1ab(iii)+2ab(iii))	Sangarédi (field work EEM ESIA, 2013)	