may establish specific mitigation measures. The mitigation measures described here are those that are not already included in the preceding section and merit consideration. A good monitoring program is not fixed but is continually modified in view of the monitoring and mitigation results. It is very possible that following initial results, modifications of methodology and of the targeted species may be considered and implemented. The measures will include the monitoring of:

- Primates at Sangarédi;
- Hippopotamus at Sangarédi; and
- Atlantic humpback dolphin at Kamsar.

0.3.5 Summary presentation of the potential and residual impacts

Table 0-16 gives a summary of the potential and residual impacts by component and subcomponent. The methodology is the one described in Chapter 1. The impacts are described in more detail in Chapter 4.

The potential impact levels of the Extension Project have been re-assessed in this section assuming the application of all of the mitigation measures for each discipline and summarized in the ESMP (Chapter 10) and this according to an aggressive and sustained schedule and supported by the appropriate resources. The residual impact levels under these conditions are presented below.

For the biological impacts, the mitigation measures are particularly complex and often include, besides specific measures, additional studies and management and protection plans. The residual impacts assume these studies and plans have been carried out. If the studies are not done or if the plans are not applied, it is evident that the residual impacts would have to be reviewed.

Often there are negative and positive impacts to assess for a subcomponent and the final assessment takes into consideration these opposite impacts.

Impacts of a positive nature:

High	Medium	Low	Does not apply (n/a)

Impacts of a negative nature:

High	Medium	Low	Does not apply (n/a)

Other impacts:

None = no predicted impact

Neutral = positive and negative predicted impacts counterbalance

n/a = Does not apply

Table 0-16 Summary of the impacts on the biological environment

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Species of first priority (Critically Endangered and Endangered according to the IUCN or equivalent)						
***Hemidactylus kundaensis* – Critically Endangered lizard and endemic to Sangarédi**	High	n/a	n/a	n/a	n/a	n/a
Residual impacts	None	n/a	n/a	n/a	n/a	n/a
***Phrynobatrachus pintoi* – Endangered and endemic frog**	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Chimpanzee	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Two species of freshwater fish	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Undescribed species of African dwarf crocodile	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium		n/a
Two species of marine turtles	n/a	High	n/a	n/a	Medium	n/a
Residual impacts	n/a	Medium	n/a	n/a	None	n/a
Undescribed form of *Cynisca oligopholis* - reptile	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Red colobus	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Blackchin guitarfish – marine fish	n/a	n/a	n/a	n/a	Medium	n/a
Residual impacts	n/a	n/a	n/a	n/a	Medium	n/a
Species of vultures	n/a	n/a	n/a	Medium	None	n/a

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
(2 at Kamsar, 3 at Sangarédi)						
Residual impacts	n/a	n/a	n/a	None	None	n/a
Hippopotamus	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
***Hemidactylus albivertebralis* – recently described lizard**	n/a	n/a	n/a	n/a	None	n/a
Residual impacts					None	
Dusky grouper					None	
Residual impacts	n/a	n/a	n/a	n/a	None	n/a
Species of first priority (Vulnerable or Near Threatened according to the IUCN or equivalent)						
West African manatee	n/a	High	n/a	n/a	High	n/a
Residual impacts	n/a	None	n/a	n/a	Neutral	n/a
Atlantic humpback dolphin	n/a	High	n/a	n/a	High	n/a

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Residual impacts	n/a	None	n/a	n/a	Neutral	n/a
African golden cat	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Neutral	n/a	n/a
Smoky mangabey	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Eleven species of freshwater fish	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Rhinoptera marginata – marine fish	n/a	n/a	n/a	n/a	Medium	n/a
Residual impacts	n/a	n/a	n/a	n/a	Medium	n/a
Two species of migratory aquatic birds	n/a	n/a	n/a	n/a	Medium	n/a
Residual impacts	n/a	n/a	n/a	n/a	Medium	n/a

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Nile crocodile (likely a distinct species)	n/a	Medium	n/a	Medium	Medium	n/a
Residual impacts	n/a	Low	n/a	Low	Low	n/a
Three tree species of dry woodlands	n/a	n/a	n/a	Low	n/a	n/a
Residual impacts	n/a	n/a	n/a	Low	n/a	n/a
Three tree species of humid habitats	n/a	n/a	n/a	None	None	n/a
Residual impacts	n/a	n/a	n/a	None	None	n/a
Beaudouin's snake eagle	n/a	n/a	n/a	n/a	None	n/a
Residual impacts	n/a	n/a	n/a	n/a	None	n/a
Critical habitats according to the IFC standards						
Gallery forests	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Cogon Corridor	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Rio Nuñez Estuary	n/a	High	n/a	n/a	High	n/a
Residual impacts	n/a	Medium	n/a	n/a	Medium	n/a
Natural habitats according to the IFC standards						
Habitats naturels	n/a	n/a	n/a	High	n/a	n/a
Residual impacts	n/a	n/a	n/a	Medium	n/a	n/a
Biological resources						
Marine fish	n/a	Medium	n/a	n/a	Medium	n/a
Residual impacts	n/a	Low	n/a	n/a	Low	n/a
Bushhmeat	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Low	n/a	n/a
Firewood	n/a	n/a	n/a	Medium	n/a	n/a
Residual impacts	n/a	n/a	n/a	Low	n/a	n/a

0.4 Social Studies

0.4.1 Introduction

0.4.1.1 Generalities

Four chapters make up the social part of the ESIA of the CBG Extension Project.

The social baseline (Chapter 5) served as a reference for socioeconomic, health, and social conditions in the Study Area. Undertaken throughout the impact study, stakeholder consultation served to inform the potentially affected population on the Extension Project. This consultation also allowed individuals in the Study Area to express their concerns related to the Project.

The analysis of the Project, the study of the social environment, and the analysis of the consultations undertaken through the duration of the study subsequently allowed the identification and analysis of Project impacts on the social aspects. The direct and indirect impacts (Chapter 7) and the cumulative impacts were analyzed, as well as the risks to the enjoyment of human rights in the Project area.

0.4.1.2 Description of the social VECs

The principal VECs that were retained for this study were derived from the structural dimensions of the socioeconomic baseline study and the consultations undertaken within the framework of the impact study. The choice of these VECs must permit the presentation of the majority of potential social impacts (positive and negative) that will result by the CBG Extension Project. There are ten VECs analysed in the social studies:

- Social structure and demographics;
- Health and security of the population;
- Infrastructure and basic services;
- Economic environment and household strategy;
- Land;
- Governance and social cohesion;
- Communication and information;
- Flows and transport;

- Heritage and archeology; and
- Lifestyle and landscape.

0.4.2 Social baseline study

The baseline study was carried out in a very detailed way in the mining concession area that includes the town of Sangarédi and neighboring areas and in a less detailed way around Kamsar.

This choice was made taking account the nature and magnitude of the work in these different areas. It was considered that, given the spatial footprint of the Project, it was important to obtain detailed information on the mining concession area, that includes the town of Sangarédi.

No baseline study was done for the railroad area. Its linear form does not lend itself well to sampling that can be analyzed and most of the impacts of the Project can be assessed on the basis of stakeholder consultation.

0.4.2.1 Studies undertaken

Two major orientations have guided the study of the socioeconomic environment: a quantitative approach and a qualitative approach.

Quantitative surveys

Quantitative surveys were undertaken only in the mine concession area (in view of the importance of the aspects at stake and the potential impacts the Project could have in this area). Their goal was to provide a statistical base for consideration of potential impacts and to evaluate, on the basis of indicators, Project impacts during implementation. The quantitative surveys include two principal components:

- An exhaustive count in the mine concession area, including the entire town of Sangarédi and about a hundred villages and hamlets of the rural communes of Sangarédi. In total, 53,789 individuals and 8,591 households were counted in Sangarédi. In the rural part of the mine concession area, 16,220 individuals and 2,258 households were counted.
- A household survey that included: the monetary revenue, the level of wealth of the household, the demography, migrations, health (notably the use of

modern and traditional medicine, the vaccination coverage), education, access to real estate, agricultural practices, non-agricultural activities (for example fishing, hunting, salaried work), natural resource harvesting, access to services, housing, comfort and food.

Qualitative surveys

Four studies were carried out in the qualitative part of the baseline socioeconomic study:

- The study of the history of the villages and powers;
- The study of land tenure;
- The cultural heritage study; and
- The archeological study.

In addition, complementary studies were carried out that touch upon:

- The infrastructures and public services ; and
- Fishing in the coastal zone around Kamsar, the mouth of the Rio Nuñez.

0.4.2.2 Generalities

In a general way the Study Area has been marked socially by the CBG. The mine and the plant at Kamsar have attracted around Sangarédi and Kamsar, a numerous population seeking to work for the company or profit from the economic opportunities created by the presence of its employees.

In spite of important social investments (schools, health centers) and a certain comfort in the town of Sangarédi for example (a much better access to electricity than in many Guinean towns), the CBG has a very bad press among the local populations, which tends to make more difficult access to information and contact with the population. This bad press seems to be the fruit of a lack of communication on the actions of the CBG and the total absence of social integration of the activities (no environmental and social management plan, no compensation system, no complaint treatment system, etc.).

This bad press is not only the fruit of the lack of integration of the CBG. It is also the result of the disengagement of the State in furnishing basic services (in spite of

a large tax on the profit paid by the CBG) and a lack of communication and organization of the rural communes.

Area of the mining concession

The mining concession area includes on the one hand the town of Sangarédi, a population of 53,000 people living principally from commercial activities and services oriented towards the satisfaction of the needs of this population, and, on the other hand, a rural population living from subsistence agriculture destined in the most part for personal consumption.

One notices in the urban area, a strong dependence on the activity of the CBG to the extent that the activities developed are geared toward the local public, itself primarily attracted by the presence of the CBG.

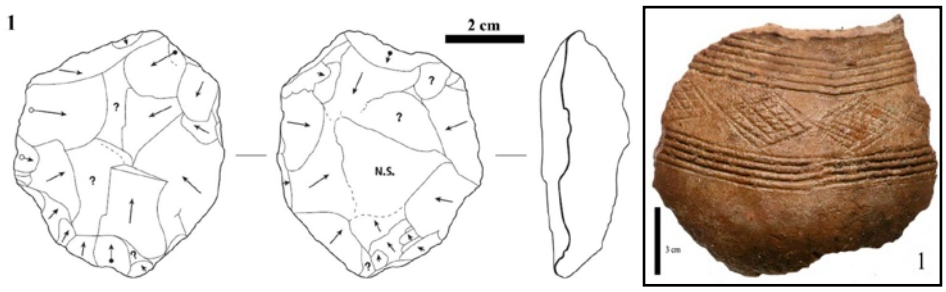
The rural population comes from the migration of Peuls that came from the Fouta at the end of the theocratic empire. There have been few subsequent migrations and its economy rests primarily on an agrarian system (slash and burn) in the process of change and reaching its end because of demographic and property pressures. The management of land still depends on common law and if all the population is muslim, animistic beliefs persist.

Archeological discoveries

Two weeks of prospecting work in the mine concession area produced the discovery of stone structures, the remains of old villages, worship areas, as well as ceramics and worked stone tools.

A discovery on Bowal Gany, after analysis, seems to date from the Middle Paleolithic, a unique find for Guinea. The study also led to the discovery of ceramics in a cave with imprinted decorations of a style previously unknown in local traditions and are also of fundamental importance.

Photo 0-22 Examples of stone tools and ceramics found



In view of the potential importance of these discoveries for the archeological heritage of Guinea, the CBG will proceed, within the framework of the Environmental and Social Management Plan (ESMP) to further archeological surveys in the mine concession area.

Kamsar and surrounding area

Kamsar and its surroundings have a very high population density. The town of Kamsar in particular has seen its demographics explode since the arrival of the CBG. There is a growing divide in terms of services between the CBG part of the town and the other part and could lead in the short-term to social incidents.

The coastal population, that lives entirely or partially on fishing, is vulnerable to any modification in the environment. The implications that the Project could have on fishing, however, largely exceed this population because of the importance of the fishing sector both in terms of finances and food security.

0.4.3 Consultations

0.4.3.1 Consultation activities during the ESIA

Within the context of the ESIA, the ÉEM team conducted three series of stakeholder consultations: scoping mission and stakeholder engagement plan, socioeconomic baseline study, and evaluation of social impacts. In addition, six information sessions were organized and led by the CBG in December 2013 to inform the authorities and the population about the Extension Project.

Figure 0-2 below locates the information and consultation missions within the framework of the ESIA.

Figure 0-2 Process of communication and consultation in the ESIA

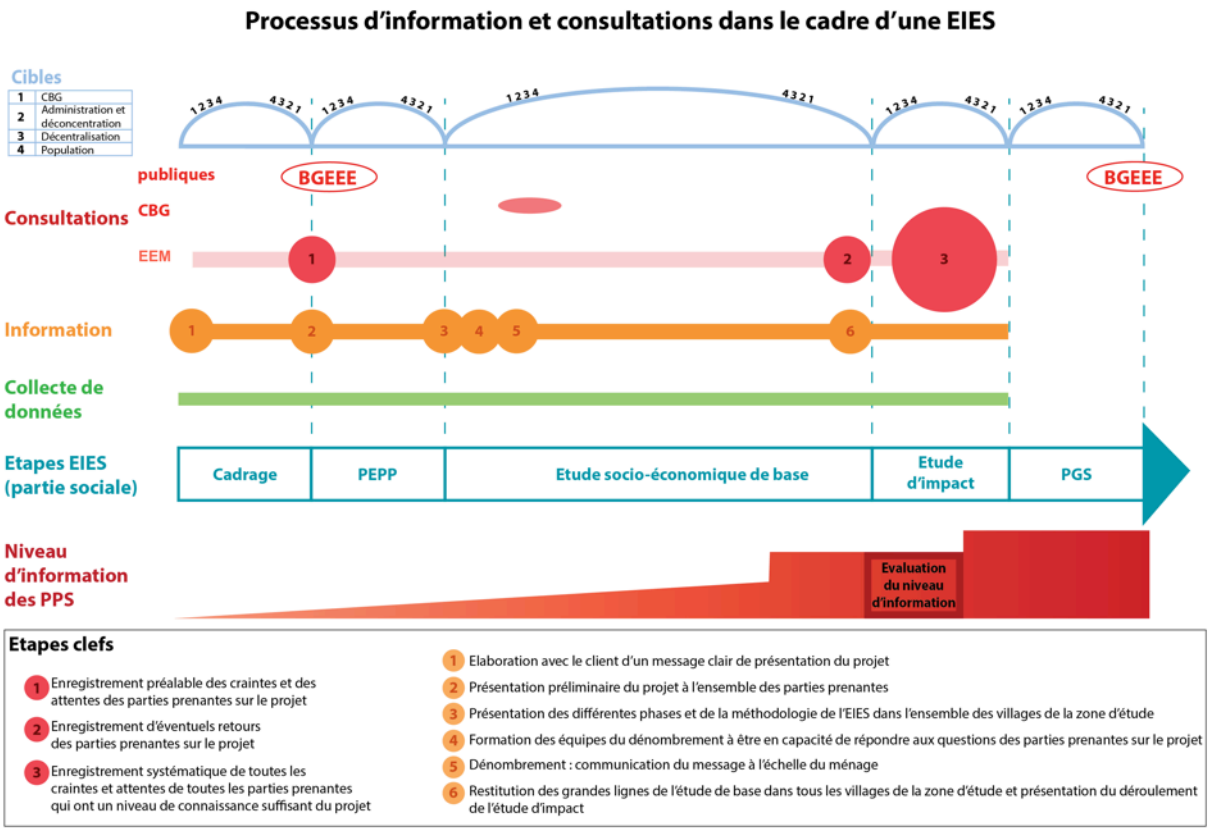
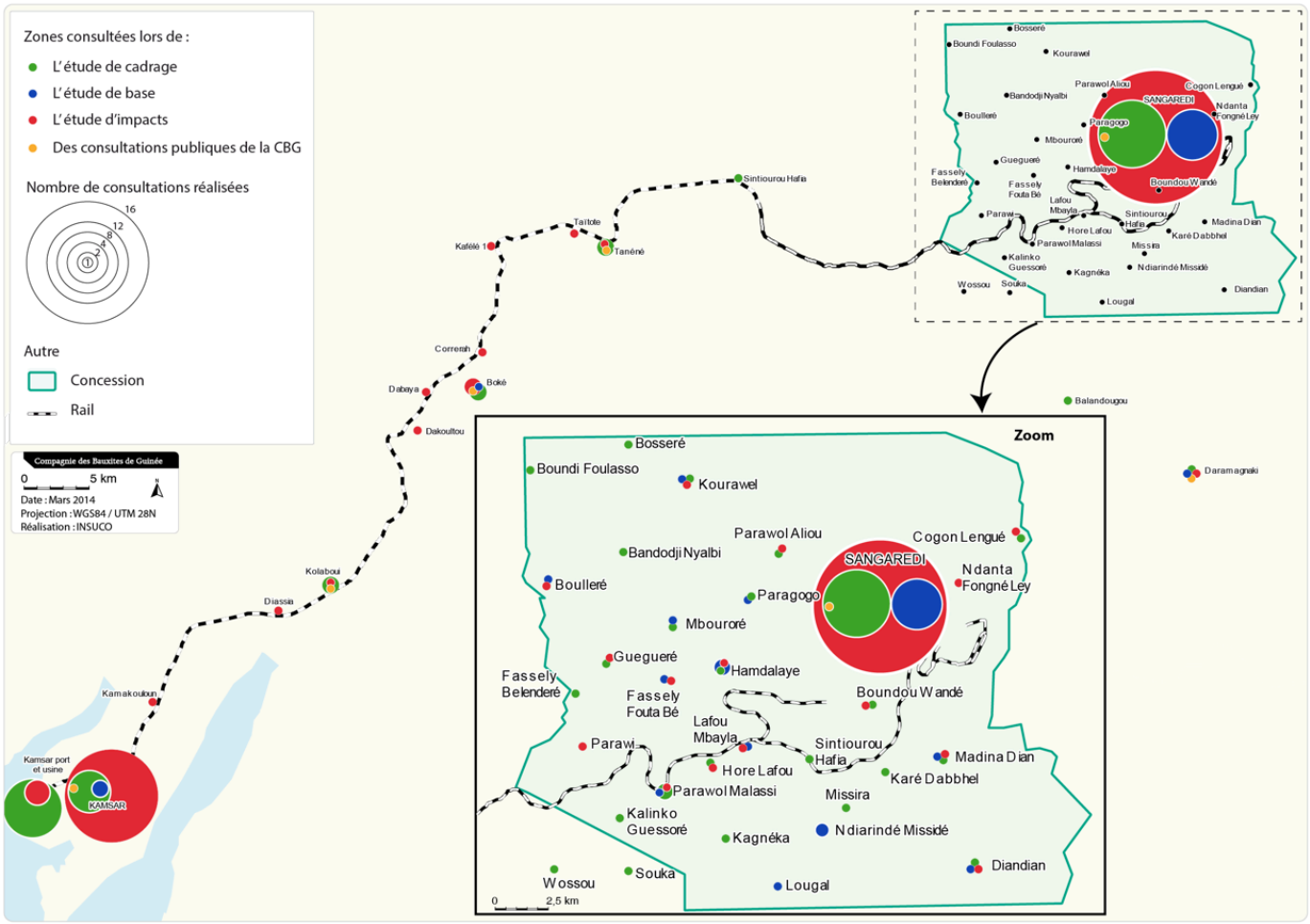


Figure 0-3 presents all of the consultations conducted for each site visited during the three field missions of the ESIA and the public consultations organized by the CBG.

Figure 0-3 Sites where consultations were held during the ESIA



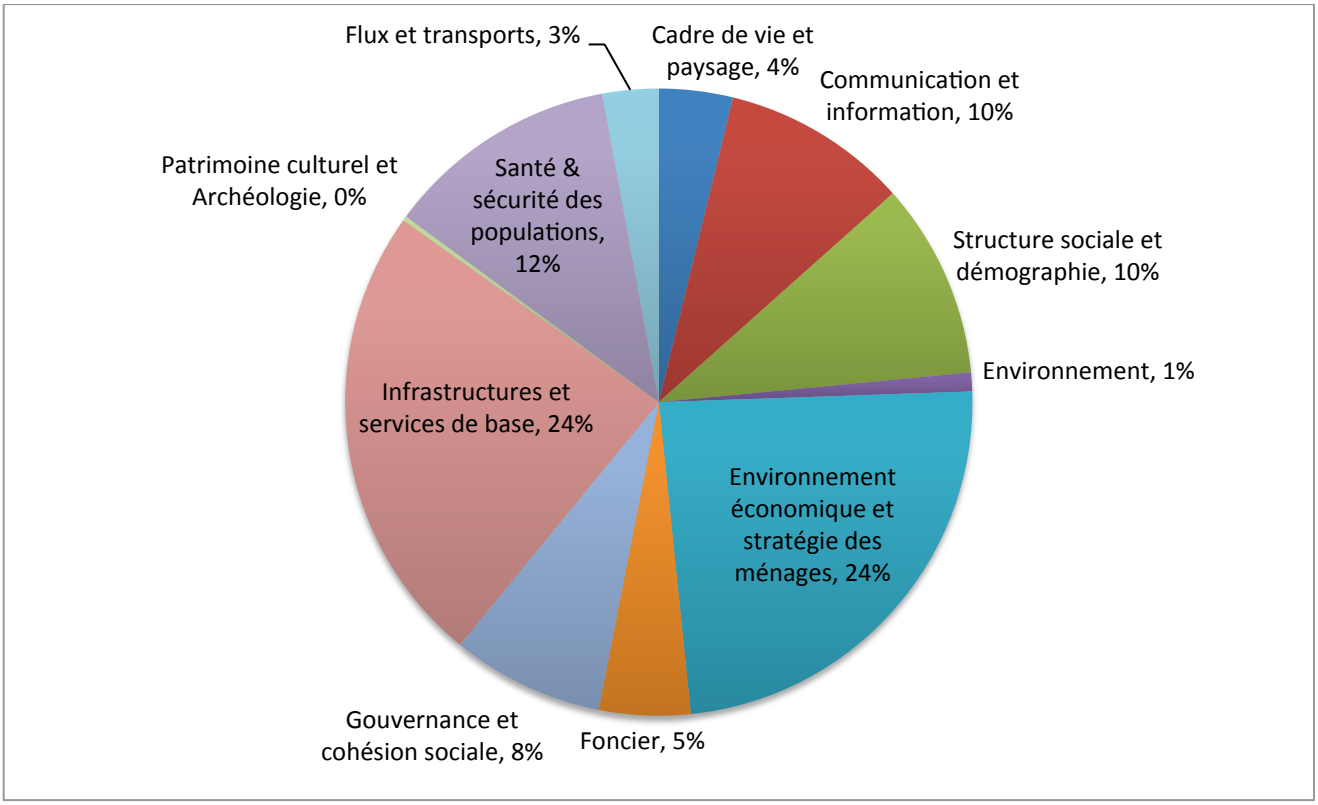
0.4.3.2 Documentation and analysis of the consultation activities

A software program (Darzin) was used by the social study team to document the consultations and analyze the content so as to associate the phrases, parts of text or propositions contained in the reporting of the consultations with a thematic classification associated with the VECs and their subcomponents, and to identify the site and consultation activity. The statistics on the recurrence of mentions of VECs and their subcomponents helped in selecting priority themes for approaching impact analysis and enabled taking into account potential impacts that reflected the aspirations and concerns of the principal stakeholders.

0.4.3.3 Synthesis of the consultations

Today, the relations between the CBG and the communities in the Study Areas are difficult. The consultations undertaken within the framework of this impact study are often qualified as "firsts since the beginning of the CBG 40 years ago". In the rural areas, open conflicts with the CBG are rare, but their absence should not mask the frustrations of populations toward the mine project, oft repeated during the consultations.

Figure 0-4 Frequency of mention of the VECs during consultation



Nearly a quarter of the subjects raised during the consultation activities were related to the economic environment and household strategies. Among other, the people consulted raised concerns and questions regarding the subject of job creation by the Project (in particular for the youth of the region), the impacts of the mine extension on agriculture, herding, hunting, and fishing in the region, and the taxes and fees paid by the CBG, including harmonizing the tax on business income with the Mining Code.

Another quarter of the results dealt with questions of infrastructure and services in the region, including transport infrastructures (principally related to the increase of the number of train runs on the railroad), electricity, health services, water, education, and training.

The health and security of the populations was also a major concernbincluding fears brought up regarding the increased risk of accidents near the plateaus being mined and along the railroad line, the quality of the surface and groundwater, and the increased risk of diseases linked to pollution and dust put out by the CBG.

Among the results related to the social structure and demographics, there are concerns related primarily to natural growth of the population and that induced by the increase in extraction rate of the CBG (migrations towards the Project area).

The people consulted had several complaints on the subject of communication and consultation with the CBG. The principal points were related to the absence of a formal and regular dialog process between the CBG and the populations of the area and the lack of a formal complaint management system.

Consulted people also raised fears about the governance of the CBG and the social cohesion in the region, including an increased risk of conflicts in the area caused by an accentuation of the social inequalities in the region, the loss of land, and the current management mode of the CBG that requires modernization.

Finally, concerns regarding land tenure were frequently raised in the rural areas of the mining concession. The principal fears were the loss of land and goods, the evictions of the past caused by the opening of new mining areas, and the need to modernize the resettlement and compensation advocated by the CBG. The GAC and Simandou projects were frequently cited as model approaches to follow in terms of resettlement of populations.

0.4.1 Identification and evaluation of the main social impacts and prevention, improvement and mitigation measures

0.4.1.1 Zone 1 :the mine

Identification and evaluation of the major impacts

Urban zone

The town of Sangarédi, historically developed at the rhythm of the CBG project, will be permanently impacted by the Extension Project. It is a town in full expansion that shows a tendency towards an anarchic development because of lack of planning and migration into the town that is not very organized.

The Extension Project will lead to the creation of a limited number of direct and indirect jobs for all the phases of the Project. Some will be accompanied by the construction of new worker lodgings, since according to CBG policy the number of lodgings to be built is equal to the number of permanent full-time jobs. Thus an increase in surface area of the worker's town will have to be considered, or even the development of new urban areas in Sangarédi. In these areas the living conditions will remain comfortable, related to access to CBG-salaried employment, the quality of the lodgings, and the conditions of access to guaranteed basic services (water, electricity, roads, sanitation services).

Negative impacts for the town of Sangarédi will be felt in the "non-CBG" neighborhoods, which currently enjoy the benefits of the existence of water and electricity distribution networks maintained and supplied by the company. The current urban dynamics of the town of Sangarédi suggest an increasingly strong demographic growth in the decades to come, growth that will be sustained by the Extension Project. There may be an increasing influx of individuals and households looking for new economic opportunities to Sangarédi linked not only to the job prospects but also to the consequences of the Project on agricultural land in the rural zone of the mining concession.

The risk is to see, as in numerous Afican towns, rapid demographic and spatial upheaval. Sangarédi will confirm its identity as a town of "two faces" with a worker's

town whose development will be planned and maintained to a stand above that of other Guinean towns, and the larger part of town where the development will continue to be in an increasingly anarchic way.

Without jobs, resources, and advance planning on the part of the public powers, it is likely that the effects of this urban growth will lead to, as much in the central neighborhoods as in the preripheral ones, insecurity, urban anarchy, unsanitary conditions, inflation of housing prices, degradation of the conditions of access to the basic services (education, health, water, transportation) and finally a system of general impoverishment of the population. The consequences of such a process will have important repercussions on the social climate, whose degradation could lead to a destabilization of the local powers and lead to social tensions and conflict.

Rural zone

In the rural zone, the principal impacts of the neighboring communities will come from the increase in the surface and volume of bauxite extracted. The Extension Project will lead to the loss of important surface areas used for agriculture and herding, and therefore of essential revenue resources for the village communities. Several villages ultimately risk finding themselves not only dispossessed of an important part of their village territory, but also more isolated or locked in because they are surrounded by operating quarries. The daily life of the villages, most of which are situated in valley bottoms, can be preserved only if springs and streams are not affected by the mining (dust, mud, destruction of springs) and if compensation measures are put in place to alleviate the economic losses incurred.

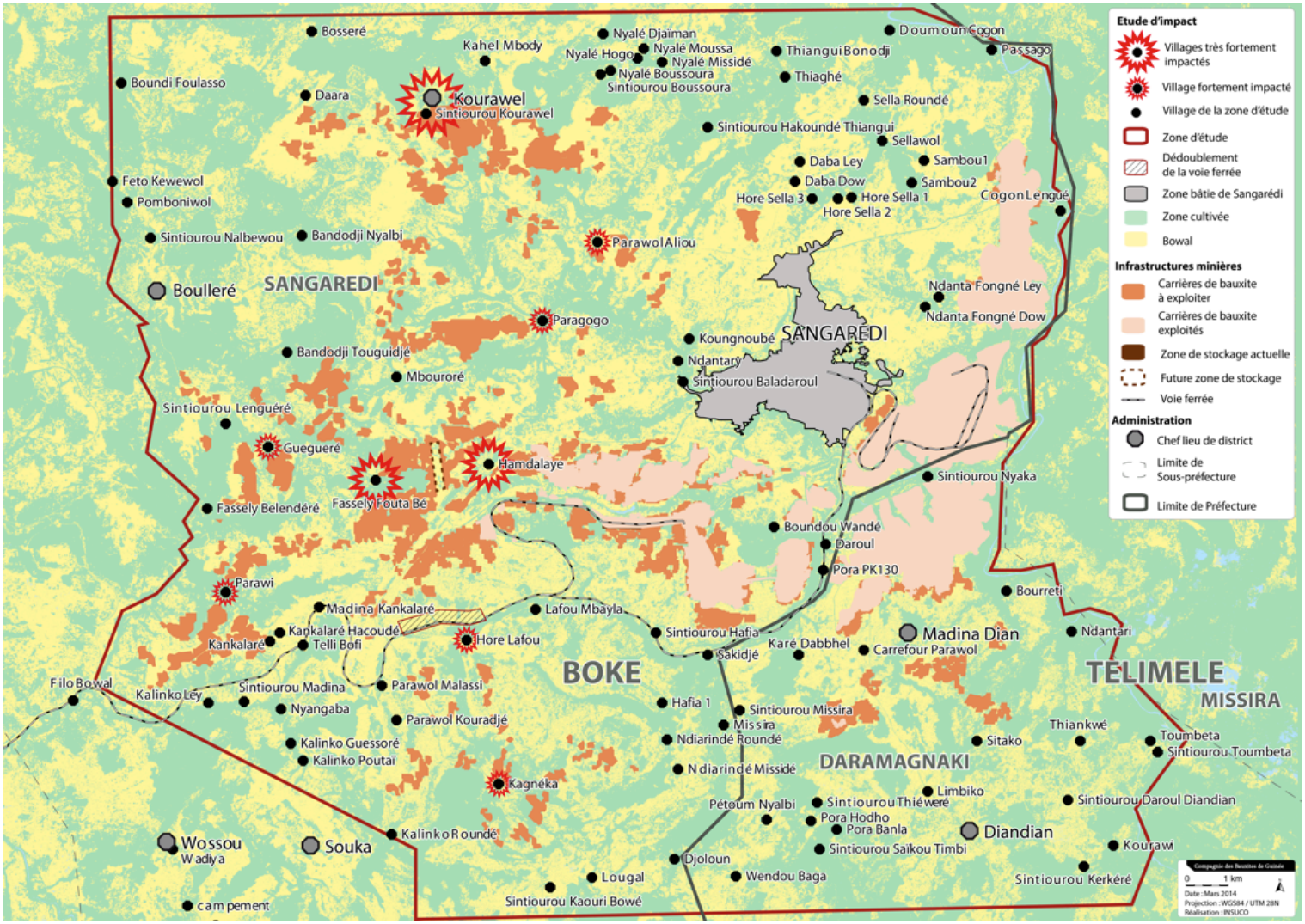
Considering the dominant agricultural techniques in the mine concession area (slash and burn requiring extensive fallow areas), the loss of land risks profound and long-term impoverishment of the communities of the concession. As is already the case, certain villagers may find themselves without land to cultivate and obliged to migrate, even temporarily. Some will go to other rural zones to find new available land to cultivate and other will go towards urban centers to try and find employment. Ultimately some villages may lose an important part of their active population.

Based on the current mining plan, some hamlets, parts of villages, or villages may have to be moved. The CBG will respect a protective buffer of 100 m between

houses and engineering works and the future zones to be mined, as required in the Code minier (Article 111, *Zones protégées ou interdites*). Based on the mining plan (October 2013 version), several houses in the mining area will have to be moved.

It should also be mentioned that there are importants risks of villages becoming isolated following the opening of new mining roads (mining roads are not open for use by neighboring communities). A relatively small base camp will be constructed within the boundaries of the N'Dangara mine during the construction phase. The impacts of this construction will be quasi-nil in terms of loss of potential loss of land.

Map 0-18 Map of villages potentially most impacted in terms of land and housing (27.5 MTPA scenario – 2022)



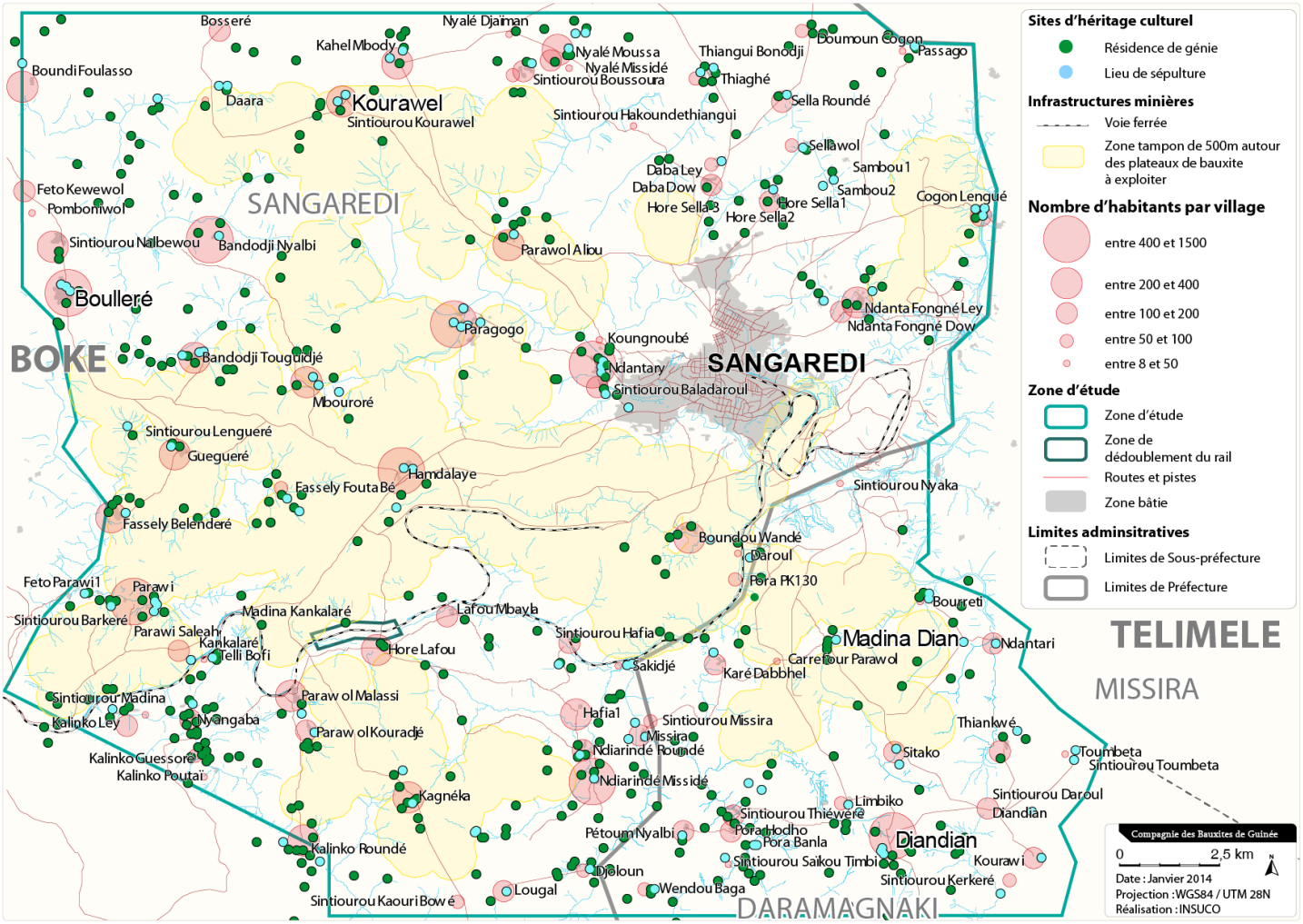
The impacts in terms of noise, vibration, and dust also risk being high for households living close to the quarries. The dust wlll essentially be generated by blasting, extracting the bauxite, and repeated passages (24 hours a day) of the mining machinery. There will therefore be a generalized degradation of the landscape, the environment, and the living conditions in the rural zones of the mining concession. The authorities consulted feel that this tendency will not be able to be compensated for in the Extension Project as long as there no negotiations with the government so that the CBG contributes substantially to the development of local communities through the taxes provided for this purpose in the Mining Code (tax on business income, tax on land surface). The current CBG community relations team is not present in the mine area and therefore does not allow the company to take into account the needs and complaints of the local communities. There is also an absence of a formal complaint handling mechanism for the CBG project.

The potential impacts of the Extension Project in terms of public health includes an increase of problems linked to respiratory diseases for the most vulnerable populations (children, old people, sick people). However, the impacts on public health in this zone deserve to be analyzed through a more thorough long-term epidemiological study, especially in the mine area where aluminum concentrations in the surface water and air will increase. It is likely that the increase in dust levels and erosion will contribute to degrade in a general way the health conditions of the villages (air quality and water quality). Concerning the security of people, the opening of new quarries and mine roads close to inhabitated areas will increase the risk of accidents in the area. The future mine road plan is not known at the time of writing this report. These conditions risk to degrade given the generalized lack of health care centers in the rural zone. The increase in the number of ore trains as well the increase in the length of the trains will impact villages located near the railroad, leading to insomnia, stress and an increase in the risks of accidents to people and livestock.

As far as employment is concerned, the majority of impacted villages are waiting for the CBG to compensate the loss of agricultural and livestock revenue by the creation of permanent jobs for the youth of the village. Concerning the development of infrastructure and services, the expectations are on the one hand major (schools, health centers) and tinged with distrust: "A pump cannot replace a spring and the

forest it allows to live" (sage, village of Hamdallaye). The mechanisms of traditional governance risk getting weakened, given that their legitimacy is essentially based on the preservation of the integrity of the village territory, the collective management of natural resources and links with animist practices.

Map 0-19 Distribution of cultural heritage sites



In this regard, among the numerous sacred sites that dot the mining concession, several may be destroyed. The Project will thus have important negative impacts on the tangible (sites) and intangible (practices) cultural heritage in the area. The archaeological mission allowed the discovery of the presence of a rich archaeological

heritage in the mining area. The artifacts were harvested to be protected and, given their exceptional nature, deserve to be studied more specifically.

Important cumulative impacts are equally anticipitated given the high number of other mining projects that could soon enter into production. For example, the GAC mning project should soon start on the periphery of the CBG concession. Cumulative impacts generated by these projects could have consequences on migrations, health, economy, security, sources of revenues, isolation, etc. for the communities of the concession.

0.4.1.2 Zone 2: the port

In the port area, the Extension Project will involve primarily a series of works to modernize and increase the capacity of the treatment plant and the port and to house newly recruited employees. Depending on the phase, the Project will correspond to a gradual increase of the tonnage of ore shipped to Kamsar, treated at the plant and loaded onto ore carrier ships for export.

The impacts in socioeconomic terms will initially be the creation of about 275 direct permanent jobs (22.5 MTPA phase, in 2017) and a few hundred contractual temporary jobs during construction (600 jobs in the 18.5 and 22.5 MTPA phases, construction). This creation of jobs, as in the town of Sangarédi will correspond to an increase, albeit small, in the number of households that will see their living conditions improve in a direct and significant way in the long-term.

The new employee housing would be built in an already populated area (limit of the Bas-fond and Balanta sectors). The households, businesses, even certain infrastructures already in place will have to be displaced and compensated for. This area also covers a surface occupied by mangrove rice culture and it will have to be compensated. In the railroad loop some cultivated lands will be displaced for the creation of sidings, however the surface in question is fairly small. The challenges of relocating displaced populations in a town as densely populated as Kamsar, where all the households aspire to live in the center to benefit from access to services offered by the CBG (water, electricity), should not be underestimated.

The creation of a base camp that can house nearly 600 employees will be situated in the CBG industrial zone in Kamsar. Therefore there will be no losses of land for the population. However the concentration of a very large number of employees (a

majority of them single men) in this camp assuredly implies some impacts in terms of public health.

At the level of the port, the increase in size of the turning basin to allow loading two ships at once will require the dredging of the bottom of the Rio Nuñez (albeit over a reduced area compared to the initial plans). This dredging, essentially during the construction phase, will have limited and local impacts on the fishing economy (Chapters 2, 3 and 4), which is an important source of revenue in Study Area 2 of the Project. During the operations phase the doubling of the number of ore ship movements will impact the security and activity of people fishing in the area. To the extent that fishing takes place primarily with motorless boats, the presence of ships generating big waves at each passage is a potentially important danger factor. In addition, the cumulative impacts in the estuary associated with the startup of other mining projects (barges, dredging, construction of other ports, increase in numbers of ships in the estuary, accidental spills of toxic substances) in the area could put into danger artisanal fishing as currently practiced.

Concerning the phenomenon of urbanization of the town of Kamsar, the impacts will be basically the same as for Sangarédi. However, a larger migratory movement might be considered, taking into account the fact that the town is already more densely populated, more spread out, and that it is known as the main employment "counter" for the CBG and its subcontractors. Without the intervention of the public authorities, one might expect that here, even more than in Sangarédi, the living conditions in the parts of the town not managed by the CBG might become degraded (access to basic services). The problems of insecurity, the degradation of the state of health of the population, and the impacts of dust put out by the plant are already at the center of people's preoccupations. The propagation of HIV/AIDS (and other epidemic diseases) in the impact zone of Kamsar (and Sangarédi) could also increase, taking into account the acceleration of migrations and of the risky behaviors frequently found in mining and port areas.

Risks linked to governance depend on the evolution of the internal organization of the CBG. Research carried out in this study lead to the conclusion that if the CBG continues to function with a very small (four persons) community relations team and with very limited means, while benefiting from very important fiscal exemptions guaranteed by its mining convention, the Extension Project will not contribute to a significant improvement of the development of the local communities in the Kamsar

area. In a general way, the Extension Project will not be able to get support from pre-existing community governance within the CBG to lay down a specific local community development project. Indeed, within the existing project, this governance is currently deficient and needs to be renewed.

This situation, combined with expectations, sometimes exponential, of the populations to benefit from the positive effects of the Project, could, as in the past, participate to create a tense social climate, favorable to to the development of conflicts in the area.

0.4.1.3 Zone 3: The railroad

In terms of the railroad, the first series of impacts will be linked to the construction of a siding around PK 14. Three village territories (Kamakouloun, Toumbeta, and Katomou) will be directly impacted though the loss of lands and the displacement of houses and other infrastructures to consider (Katomou and Toumbeta).

Otherwise, on the whole railroad area, the main source of impacts of the Extension Project will be the increase in the number of train runs (from 12 runs currently to 24 runs per day by 2022) and the increase in the length of the trains. From this intensification of the train traffic there will follow a slowdown or blocking of movement of people and merchandise, an increase in the risks in terms of the security of people and livestock, and finally, an increase of the level of stress (insomnia) for people living close to the railroad. Expectations in terms of job creation could be unfulfilled in that the CBG plans the creation of jobs primarily at the mine and the port. This area will have to receive particular attention on the part of the CBG so as to limit the increase in social inequalities between the three Study Areas.

0.4.1.4 Prevention, improvement and mitigation measures

In the three Study Areas of the Extension Project, certain mitigation and enhancement measures, if they were put into action in the framework of the ESMP could markedly decrease the levels of perturbation. It is expected that these measures will permit the prevention, the mitigation, or the compensation of negative impacts and to enhance positive impacts of the Project.

Below are listed the principal measures proposed for the entire Project:

- Compliance to the applicable national legislation and the international standards associated with social aspects (including the IFC Performance Standards);
- Development of a strategy and putting into effect of a communication plan for the entire Extension Project (clarification of communication channels, choice of interlocutor, and information content);
- Reinforcement of the community relations team of the CBG with a renewal of its mode of governance and locating part of the team in Sangaredi to cover the mine area;
- Initiation, in collaboration with the State, of a review of the taxes paid by the CBG in favor of local development (business revenue tax and surface area tax);
- Development and putting into practice of an ESMP for the Extension Project (or even for the entire CBG operations) and a Resettlement Action Plan (RAP) specific to the Extension Project;
- Adoption of a global policy to ensure that villages do not become isolated both in the mine area and along the railroad by the construction of alternate roads in the mine area and by providing rail crossings above the railroad;
- Adoption of a formal policy for the whole Project to respect a minimum 100 m buffer around inhabitated and used areas (agriculture, springs, livestock, etc.) based on the Mining Code;
- Policy of respect for cultural heritage sites and practices, minimizing their disturbance or destruction and conforming to the recommendations of the baseline study (Performance Standard 8 of the IFC);
- Compensation management plan oriented in priority towards the promotion of community development with consideration of the shortfall brought on by a significant loss of land and therefore of revenue sources, the perturbation of the fishing economy, the loss of goods, associated with adapted compensation measures;
- Production of a thorough and independent public health impact study (to complement the one done by the CBG in 2014) along with a mechanism for monitoring and control in the mine area;

- Application of all of the mitigation measures recommended in the environmental study (Chapters 2 and 4), notably setback ditances from villages;
- For the protection of public health, establishment of an environmental monitoring plan with compilation of the data and correction measures in the case of exceedance of standards (water, dust, noise, vibrations);
- Adoption and putting in place of an effective and transparent complaint management and monitoring mechanism, managed by the CBG;
- Technical and financial support and collaboration with the decentralized and deconcentrated powers for the elaboration of plans to direct and manage the expansion of the towns of Sanagaredi and Kamsar; and
- Systematic involvement of the population and the local authorities in the implementation of the various phases of the Project, of the ESMP, and of the RAP: consultations, participatory decision-making process, etc. (Performance Standard 1 of the IFC).

0.4.1.5 Summary presentation of the potential and residual impacts

The implementation of the mitigation measures is summarized in Table 0-17 and is detailed in Chapter 7 (social impact study). It implies a major change in the operational practices of the CBG in terms of environmental and social management and will be a major challenge for the company. The potential impact levels of the Extension Project have been re-assessed in this section assuming the application of the totality of the mitigation measures and this according to an aggressive and sustained schedule and supported by the appropriate resources. The residual impact levels under these conditions are presented below.

Impacts of a positive nature:

High	**Medium**	**Low**	**Does not apply (n/a)**

Impacts of a negative nature:

High	**Medium**	**Low**	**Does not apply (n/a)**

Other impacts:

None = no predicted impact

Neutral = positive and negative predicted impacts counterbalance

n/a = Does not apply

Table 0-17 Summary of the impacts on the social environment

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
DEMOGRAPHICS AND SOCIAL DYNAMICS						
Rural exodus (towards other rural areas)	High	n/a	n/a	High	n/a	n/a
Residual impact	Medium	n/a	n/a	Medium	n/a	n/a
Migration towards urban centers	High	High	Medium	High	Medium	Medium
Residual impact	Medium	Medium	Low	Medium	Medium	Low
Modification of the social and family structure	High	Moyen	n/a	High	Medium	n/a
Residual impact	Medium	Low	n/a	Medium	Low	n/a
HEALTH AND SECURITY OF POPULATIONS						
Degradation of sanitary conditions (access to basic services)	High	High	Low	High	High	Low
Residual impact	Medium	Medium	Low	Medium	Medium	Low

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Degradation of sanitary conditions (increase in pollution sources / impacts on health)	High	Medium	Low	High	Medium	Low
Residual impact	Medium	Low	Low	Medium	Low	Low
Risks related to passage of trains	Low	Low	Low	High	High	High
Residual impact	Low	Low	Low	Medium	Medium	Medium
Risk of road accidents	Medium	Medium	Low	Medium	Low	Low
Residual impact	Medium	Medium	Low	Medium	Low	Low
Risk of marine accidents	n/a	Low	n/a	n/a	High	n/a
Residual impact	n/a	Low	n/a	n/a	Medium	n/a
Risk of accidents in or at the edge of quarries	High	n/a	n/a	High	n/a	n/a
Residual impact	Medium	n/a	n/a	Medium	n/a	n/a
Degradation of public security	Medium	Medium	Low	Medium	Medium	Low

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Residual impact	Low	Low	Low	Low	Low	Low
CONDITIONS OF ACCESS TO INFRASTRUCTURES AND BASIC SERVICES						
Degradation in the conditions for access to water and sanitation	High	High	Low	High	High	Low
Residual impact	Medium	Medium	Low	Medium	Medium	Low
Degradation in the conditions for access to electricity	Medium	Medium	Low	Medium	Medium	Low
Residual impact	Low	Low	Low	Low	Low	Low
Conditions for access to education and training	Medium	Medium	Low	Medium	Medium	Low
Residual impact	Low	Low	Low	Low	Low	Low
Degradation in the conditions of access to health services	High	High	Low	High	High	Low
Residual impact	Low	Low	Low	Low	Low	Low
Conditions of access to leisure and culture	Medium	Low	n/a	Medium	Low	n/a
Residual impact	Medium	Medium	Medium	Medium	Medium	Medium

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Improvement of access to housing for CBG employees	Medium	Medium	n/a	Medium	Medium	n/a
Residual impact	Medium	Medium	n/a	Medium	Medium	n/a
LAND						
Loss of lands	High	Medium	Low	High	n/a	n/a
Residual impact	High	Medium	Low	High	n/a	n/a
Weakening of the traditional land management system / modification of land rights and the relationship to the land	High	Medium	Low	High	Medium	Low
Residual impact	High	Medium	Low	High	Medium	Low
Displacements to consider	High	High	Medium	High	n/a	n/a
Residual impact	High	High	Medium	High	n/a	n/a
ECONOMIC ENVIRONMENT AND HOUSHOLD STRATEGIES						
Increase in social inequalities – impoverishment of rural and urban areas	High	High	Low	High	High	Low

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Residual impact	High	High	Low	High	High	Low
Job creation (direct and indirect)	Medium	Medium	Low	Medium	Medium	Low
Residual impact	Medium	Medium	Low	Medium	Medium	Low
Job creation (direct temporary)	Low	Medium	Low	Low	Medium	Low
Residual impact	Low	Medium	Low	Low	Medium	Low
Disturbance of fishing activity (in the estuary)	n/a	Medium	n/a	n/a	High	n/a
Residual impact	n/a	Low	n/a	n/a	High	n/a
Support to community development projects	Low	Low	Low	Low	Low	Low
Residual impact	Medium	Medium	Medium	Medium	Medium	Medium
FLOW AND CIRCULATION						
Village isolation	High	n/a	Low	High	n/a	n/a
Residual impact	Medium	n/a	Low	Medium	n/a	n/a
Ending village isolation	Low	n/a	Low	Low	n/a	n/a

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Residual impact	Medium	n/a	Low	Medium	n/a	n/a
Disturbance to transport and flows (increase in number of trains)	n/a	n/a	n/a	High	High	High
Residual impact	n/a	n/a	n/a	Medium	Medium	Medium
Frequency of passenger trains	Medium	Medium	Medium	Medium	Medium	Medium
Residual impact	Medium	Medium	Medium	Medium	Medium	Medium
Degradation of traffic conditions in the estuary (passengers or fishing)	n/a	Medium	n/a	n/a	High	n/a
Residual impact	n/a	Low	n/a	n/a	High	n/a
GOVERNANCE AND SOCIAL COHESION						
Tensions related to modes of local governance	High	High	Medium	High	High	Medium
Residual impact	Medium	Medium	Low	Medium	Medium	Low
Impacts to modes of governance of the CBG	High	High	Medium	High	High	Medium

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
Residual impact	Medium	Medium	Medium	Medium	Medium	Medium
Potentialm conflcits and social tension	High	High	Medium	High	High	Medium
Residual impact	Medium	Medium	Low	Medium	Medium	Low
Impacts related to communications and information	High	High	High	High	High	High
Residual impact	High	High	High	High	High	High
CULTURAL HERITAGE AND ARCHEOLOGY						
Risk of affecting the integrity of sacred sites and ritual practices	High	Low	Low	High	Low	Low
Residual impact	Medium	Low	Low	Medium	Low	Low
Risks of affecting the integrity of the archeological heritage	High	Low	Low	High	Low	Low
Residual impact	High	Low	Low	High	Low	Low

VEC/impacts by subcomponent	Construction Phase			Operation Phase		
	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3
LIVING CONDITIONS AND LANDSCAPE						
Increase in noise levels	High	Medium	Medium	High	Medium	Medium
Residual impact	High	Medium	Medium	High	Medium	Medium
Increase in levels of dust / mud	High	Medium	Medium	High	Medium	Medium
Residual impact	Medium	Low	Low	Medium	Low	Low
Increase in vibration levels	High	Low	Low	High	Low	Low
Residual impact	Medium	Low	Low	Medium	Low	Low
Visual impacts (degradation of the landscape)	High	Medium	Medium	High	Medium	Medium
Residual impact	Medium	Medium	Medium	Medium	Medium	Medium

0.4.2 Impacts on human rights

Human rights are the essential rights and the fundamental liberties to which all human beings are entitled without discrimination. The human rights are:

- Universal: they apply to all without distinction of nationality, residence, sex, race, ethnicity, religion, or culture;

- Inalienable: they can only be removed or restricted under certain conditions stipulated by the law;
- Indivisible: they are of equal importance and must be considered according to the principle of equality; and
- Interdependent and linked: they reinforce each other mutually. The violation of a right affects the respect of other rights. In the same way, the enjoyment of a right favors the realization of other rights.

The principle of non-discrimination in terms of human rights and liberties is fundamental. It applies to all persons and forbids all discrimination based on a list of characteristics including sex, race, religion, nationality, etc.

The evaluation of the risks to human rights related to the Project uses the methodology developed by the "Guide d'évaluation et de gestion de l'impact sur les droits de l'homme" (EGIDH) of the IFC (2010) and the "Forum international des chefs d'entreprise". The normative framework of human rights adopted for this assessment, as per the methodology of the EGIDH, is the one of the International Charter of Human Rights, which is composed of:

- The Universal Declaration of Human Rights;
- The International Covenant on Economic, Social and Cultural Rights; and
- The International Covenant on Civil and Political Rights.

On the basis of the 35 human rights contained in the International Charter of Human Rights, the human rights report prioritized 19 rights according to the criteria of the likelihood and gravity of impacts generated by the activities of the Project. The real and cumulative impacts generated by the activities of the CBG were also taken into account for this assessment.

Following specific consultations in the field with several stakeholders in the Sangarédi area, the study has identified that the Project will a potentially high and grave effect on the enjoyment of the human rights listed below:

- The right to life;
- The right to free circulation of people;
- The right to the protection of children;

- The right to a sufficient standard of living;
- The right to health; and
- The right to self-determination.

Table 0-18 gives a summary of the potential and residual impacts of the Project on human rights in the Study Areas. The potential impact levels of the Extension Project have been re-assessed in this section assuming the application of the totality of the mitigation measures described in Chapter 8 and summarized in the ESMP (Chapter 10) and this according to an aggressive and sustained schedule and supported by the appropriate resources. The residual impact levels under these conditions are presented below.

- Potential of the impact (negative)

High	Medium	Low	Does not apply (n/a)

- Potential gravity of the impact

High	Medium	Low	Does not apply (n/a)

Table 0-18 Summary of the impacts on human rights

Human rights	Potential	Gravity
Right to life Right to libery and security	High (pollution and accidents)	High (loss of lives; irreparable degradation of the environment)
Residual impact	Medium	High
Right not to be held in slavery, in servitude or submitted to forced work	Medium (forced work)	Remediable

Human rights	Potential	Gravity
Residual impact	Low	Remediable
Right to not be subject to torture and other cruel, inhuman, or degrading punishment or treatment	Medium (bad treatment of suppliers and subcontractors)	High (physical and psychological aftereffects of inhuman or degrading treatments)
Residual impact	Low	High
Right to equality before the law, to non-discrimination	High (discrimination against women)	Remediable
Residual impact	Medium	Remediable
Right to effective recourse	Medium	Remediable
Residual impact	Low	Remediable
Right to the free movement of people Right to liberty of information	High (potential relocation of several villages)	High (badly managed involuntary resettlement)
Residual impact	Medium	High
Right to assemble Right to the liberty of expression and opinion	Medium	High (loss of human lives)
Impact résiduel	Low	High
Right to work Right to just and favorable work conditions (rest and leisure included)	High (recruitment among suppliers and subcontractors)	Remediable
Residual impact	Medium	Remediable

Human rights	**Potential**	**Gravity**
Right of association Right to form and join unions and right to strike	Medium	Remediable
Residual impact	Low	Remediable
Right to the protection of children Right to education	High	High (accidents, disease, lowering of standard of living having irreparable consequences on the development of children)
Residual impact	Medium	High
Right to a sufficient standard of living (food, housing, clothes, drinkable water, sanitation) Right to property	High	High (involuntary resettlement, irreparable degradation of the environment)
Residual impact	Medium	High
Right to health	High	High (proliferation of diseases, irreparable degradation of the environment)
Residual impact	Medium	High
Right to auto-determination	High	High (badly managed involuntary resettlements)
Residual impact	Medium	High

0.5 Cumulative impacts

The Government of Guinea seeks to increase in a significant way the bauxite production of the country. Boké prefecture, possessing bauxite resources, infrastructure, and experience in the mining sector will be the principal area of bauxite production in Guinea. With numerous projects proposed and in development and given that the realization of these projects will transform the region in significant and irreversible way, it is strongly recommended that the Government of Guinea undertake a strategic study on the environmental and social impacts of the mining sector in the region, in collaboration with the mining companies, the authorities, and the population of the region. Such a development plan for the region could have as objectives:

- Ensure the regularization of the mining sector during its expansion;
- Maximize the benefits for the population of the region and the country; and
- Protect its rich environmental and cultural heritage.

The study could notably incude the following questions:

- The protection of what is left of natural habitat in the plateau region, notably the gallery forests;
- The promotion of green corridors in the large valleys between the plateaus, notably the Cogon River;
- The protection of the populations living off agriculture and pasture in the bauxite extraction areas;
- The provision of infrastructures and services in all of the region (for example water, electricity, health services, sanitation);
- The free circulation and the security of populations along the railroad;
- The protection of the critical natural habitat of the estuary of the Rio Nuñez; and
- The protection of the fisheries resources and fishing in the estuary of the Rio Nuñez.

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