ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SUMMARY
ESIA SUMMARY

Project Team
Mr. Augustin KARANGA, OITC-1
Mr. Modeste KINANE, ONEC.3
Mr. Salim BAIOD, Consultant OITC-1

Sector Director: Mr. Amadou OUMAROU
Regional Director: Ms. Marlene KANGA
Head of Division: Mr. Jean Kizito KABANGUKA
1) Introduction

This document is the summary of the Environmental and Social Impact Assessment (ESIA) relating the Batshamba-Tshikapa Road Rehabilitation – Lovua-Tshikapa Section Project in the Democratic Republic of Congo. This summary has been elaborated in accordance with the environmental and social assessment guidelines and procedures of the African Development Bank for Category 1 projects. The description and justification of the project are first outlined, followed by the relevant legal and institutional framework in the Democratic Republic of Congo.

A brief description of the main environmental conditions prevailing in the project area is presented, through its physical, biological and human (social, cultural, and economic) components, the scenarios and alternatives are compared in terms of technical, economic, environmental and social feasibility, including public concerns.

The most significant positive and negative impacts of the selected scenario on the biophysical and human environments (social and economic) are outlined. Environmental and social impacts are summarized and the unavoidable impacts identified. The descriptions cover the expected impacts during the phases of preparation, construction and use of the road. The improvement and mitigation measures proposed in order to increase profits and/or prevent, minimize, mitigate or offset the negative impacts and the monitoring program are presented. Consultations with the populations, held during the ESIA, are presented and additional initiatives related to the Project such as the required Resettlement Action Plan.

An environmental and social compliance certificate was issued by the relevant authorities in DRC for the project.

2) Project Description and Justification

The National Highway 1 (RN1) connects Matadi, in the Western DRC, to Lubumbashi in Katanga in the South, providing then an access to Zambia. The road goes across the provinces of Kinshasa, Bandundu, West and Eastern Kasai and and makes it possible, from Mbuji-Mayi, to reach the National Highway 2 linking the cities of Bukavu (Southern Kivu) and Goma (Northern Kivu) in the Eastern part of the country. Rehabilitation operations undertaken on this road are in line with the strategy set up by the Government, consisting in a progressive asphaltling of the main structuring roads in the country.

The section co-funded by the Bank is entirely located in the Western Kasai Province, more specifically in Kasai District, Kamonia Territory and Bapende and Kamonia Sectors. It covers 49 Km in a rural area, between Lovua and Katshongo, and 4 Km in urban areas, including the 160m long bridge on the Kasai River, in the city of Tshikapa. The road is the continuation of Phase 1 between Batshamba and Lovua bridge.
The level of service on the RN1 will be considerably improved after the rehabilitation of the road, especially in its area of influence. The project is designed to ensure a smooth and safe traffic, allow greater mobility of people through a better access to various economic and social centers of the provinces of Bandundu, Kasaï, and Kasaï Oriental, thus enabling to fight poverty in part of the Congolese people.

The works will focus on earthworks (cutting and backfilling), the pavement of the road including fiber optic feedthroughs and the construction of hydraulic facilities (culverts, gutters, etc.). The building of the bridge over the Kasaï River, the recovery of existing drainage system, the setting of road signs (horizontal and vertical) and the planting of trees along the crossing villages and in Tshikapa city.

The Project Area of Influence is the area in which the demand for mobility is generated. The area of direct influence comprises all settlements whose residents are using the road under its current conditions and will continue to use it for their movements, even if it is not rehabilitated. It includes several human settlements in this area including the city of Tshikapa. Four other large villages are also to be considered, namely Mukala, Katanga, Kayateshia, and Kabunlongo for which the road constitutes the nearest access to a national highway. The expanded area of influence includes geographic locations where people can use the road once rehabilitated. The road will surely be a more attractive alternative than other routes, in terms of time, cost, safety and comfort. Therefore, the expanded area of influence could be considered as encompassing all the territories of the provinces along the road covered by the project.

### 3) The Political, Legal, and Administrative Framework

#### 3.1) The political framework

DRC environment commitments are clearly set forth in the Transitional Constitution of April 4, 2003 and in the Constitution of February 18, 2006. DRC has also adopted several action and development plans at national level for better management of resources, *inter alia*: (i) the Tropical Forest Plan; (ii) the National Environmental Action Plan; (iii) the National Strategy and Action Plan on Biological Diversity; (iv) the Initial National Communication on Climate Change; (v) the Master Plan for Agricultural and Rural Development; (vi) the Master Plan for Fisheries, and (vii) the National Action Plan for Housing. These participatory planning efforts bring together all players concerned at the national level and give directions for achieving sustainable development. There are meant to ensure that a consensus is reached on environmental challenges to be met in relation with the social and economic development policy. They refer to the Social and Environmental Assessment as a key tool for environmental management.

#### 3.2) The legislative and regulatory framework

The Congolese legislative framework consists of a multitude of environmental instruments, most of which are outdated. They were complemented with an additional Framework Act No. 11/009 dated July 9, 2011 on Fundamental Principles of Environmental Protection, especially in its Chapter 1, Section 3. The Framework Act highlights, the need for: (i) a Social and Environmental Impact Survey (EIES) to be conducted for any industrial, commercial, agricultural project. which activities are likely to pose a risk of pollution or environmental degradation, and, (ii) an environmental audit and public investigation to be carried out as set forth in Chapter 3.

Pending the promulgation of relevant specific decrees, the framework consists of :
i) Decree-Act dated August 22, 1969 on nature preservation and the creation of preserved areas which defines the constraints to be addressed as part of impact surveys in specific areas such as integral nature reserves and "preserved areas" in which industrial activities, public or private works or use water, *inter alia*, are prohibited.

ii) Decree 75-231 dated July 22, 1975 which sets out the responsibilities of the Ministerial Department in charge of Environment ;

iii) Decree 75-232 dated July 25, 1975 which establishes the Interdepartmental Committee on Environment.


v) Ministerial Decree of June 25, 1998 which establishes a National Environmental Information Center (CNIE) in charge of collecting, analyzing and disseminating information on the status of the countrywide environment.

vi) Act No 011-2002 dated August 29, 2002 on the Forestry Code. This Act is of general application and encapsulates the will to better organize environmental management of forestry resources. It prohibits any deforestation action in areas exposed to risks of erosion and flooding, and imposes a clearing a distance of 50 meters on either side of streams and within 100 meters of their sources ;

vii) Decree-Act No 007-2002 dated July 11, 2002 relating to the Mining Code that sets the conditions to be fulfilled for digging and operating minerals deposits. Provisions of the Code include environmental aspects.

viii) Decree-Act No 71-016 dated March 15, 1971 on the protection of cultural property ;

ix) Act No 75-04 dated July 22, 1975 on the establishment of preserved areas ;

x) Decree No 75-232 dated July 2, 1975 on the establishment of the Inter-ministerial Committee for the Environment, Nature Preservation and Tourism ;

xi) Decree 76-252 of September 22, 1976 relating to the organization of specific services within the Department in charge of the Environment, Nature Preservation and Tourism ;

xii) Ministerial Decree No. 037/CAB/MIN/ECN-EF/2004 dated June 2, 2004, which was promulgated as part of the organizational framework for the environmental and social components of the Emergency Minimum Program for Rehabilitation and Reconstruction (PMURR).

xiii) The Congolese regulatory framework on compensation in case of expropriation of property for public use shall be governed by the Act No. 77/01 of February 22, 1977 on expropriation for public interest. The terms of land tenure are governed by the Act No. 073-021 dated July 20, 1973 on the general arrangements for property and real estate and land tenure safety arrangements as amended by the Land Act No. 80-008 dated July 18, 1980. Under these laws, the sole owner of the soil and subsoil is the State. Article 53 of the Land Act No. 73-021 dated July 21, 1973 stipulates that the soil and subsoil are the exclusive, inalienable and imprescriptible property of the State. This principle was reiterated in the Transitional Constitution of April 3, 2003 (Article 9) and also appears in the Constitution of February 2006. They are now considered as reference provisions in this field.

The procedure consists of two phases: (I) The first phase is administrative, where specified characteristics for expropriation, the extent of public interest, the holders of the power to expropriate, the rights coming under expropriation are precisely referred to. It includes public consultation especially the public inquiry process and/or public hearing, (ii)
It is followed by the legal proceeding phase and includes, finally, compensation and other rights granted to the expropriated. Courts are in the capacity - only a posteriori - to settle disputes and claims arising from unsuccessful settlement between expropriating and expropriated persons.

3.3) The institutional and administrative framework

The main intervening institutions are the Ministry of Infrastructure, Public Works and Reconstruction (MITPR) and the Ministry of Environment, Nature Preservation and Tourism (MECNT). The MECNT was established by the Decree No. 75-231 of July 22, 1975 and includes nine normative directorates and eight specialized services. According to its prerogatives (as referred to again in the Decree 03-025 dated September 16, 2003 on practical arrangements for the organization of Ministries of the Transitional Government, and Decree 03-027 on remits of various Ministries), the Ministry of Environment is in charge of: (i) developing safety standards on environment, (ii) ensuring the implementation of environmental impact surveys, and (iii) monitoring the industrial pollution and environmental sanitation.

Decree 044/2006 of December 2006 provides for the establishment, organization and functioning of the Congo Environmental Survey Group (GEEC). Under the authority of the Minister of Environment, GEEC's mission consists in leading and coordinating the social and environmental assessment of projects. The group is headed by an Executive Director, assisted by two officials responsible for assessing ESIAs and Environmental and Social Management Plans (ESMP) of projects, respectively categorized into class A and Class B (categories 1 and 2 for the ADB). GEEC is responsible for preparing the social and environmental compliance certificate to be signed by the Minister of Environment for projects granted with no objection to implementation within the context defined in the ESIAs and ESMPs. In addition to GEEC, environmental officers are appointed in every Ministry and technical services involved in the Social and Environmental Assessment of projects. They are responsible for ensuring the implementation of laws aiming at protecting the environment. An Environmental Unit is set up within the Infrastructure Unit, as the Owner’s Representative and charged with ensuring the elaboration and effective implementation of the ESMPs. This Unit has the following responsibilities: (i) ensure the coordination and monitoring of environmental guidelines; (ii) centralize information on environmental and social issues related to road projects; and (iii) liaise with contractors companies and various services that may provide technical solutions for the mitigation of environmental impacts.

4) Description of the Project Environment

4.1) Physical environment

i) Climate: The following types of climate prevail in the Western Kasaï Province: (i) equatorial climate in the North, and (ii) Sudan-like climate in the South. The equatorial climate, which is an extension of the climatic influence of the neighboring province of Equateur, is characterized by the absence of dry season observed in the far north of the province. It combines with a transitional climate to the south of Demba and across the center of Dekese territory. The Sudan-like climate is characterized by a hot and humid climate with a dry season that runs longer as one moves southwards. In the South of the province, it lasts two months as well as in the North of Ilebo, Mweka and Northeast Territory of Luebo.

Western Kasaï has an annual temperature of 10°C on average. The provincial average temperature is around 24°C with peaks of 32°C in June in Tshikapa. The lowest temperature (15°C) is reached in July in Tshikapa. Rainfall depends on climate and is higher in the
equatorial zone than in the so-called tropical zone. It actually varies between 1400 -1900 mm in Western Kasai Province.

**ii) Landscape and hydrology:** The topography of the province of Western Kasai is characterized by the existence of two major regions, (a) the Northern part of the fourth parallel with altitudes lower than 500 m forming part of the Southern hills of the Central Basin and (ii) the Southern part of the fourth parallel where medium altitudes from 500 to 1000 m prevail, being part of the Kasai faceplates which cover about three quarters of the areas of the Province. These faceplates are drained by the Kasai River and its tributaries flowing from South to North, namely the Lulua, the Lukenie, the Sankuru, the Tshikapa and the Loange tributaries. These streams offer a navigable waterway network, conducive to the transport of goods and people. Ilebo, located on edge of the Kasai River, is the main port of the province and is the junction between the railway and waterway, from Katanga to Kinshasa.

**iii) Geology and hydrogeology**

Due to a fairly well developed coverage in the province of Western Kasai, the base is composed of the Lulua (Kibara) group and ante-Lulua formations that are flush only in the valleys. These formations are essentially magmatic, and appear in the Kasai-Lulua confluence, mainly with chlorite-schist, amphibole-schist, gneiss and quartzite texture. The Lulua group appears in the valleys of the Lueta and the Lulua Rivers, as well as in their tributaries, and in the valley of the Kasai in the southwest towards Angola. The southeastern area of Luiza (Masuika) could be lying upon a foundation consisting essentially of carbonate rocks, conglomerates, schist, quartzite and arkose.

From a geological standpoint, the subsoil of Kasai Occidental is essentially made of granitic rocks the outcrop of which composed two quarries of Kananga. It is full of geological resources including diamond in the Territories of Tshikapa, Luebo, Demba, Kazumba, Mweka, Ilebo, Dibaya, and Dimbelenge; gold and tin in the Territories of Luiza and Kazumba; iron in the Territories of Luebo, Tshikapa and Kazumba; nickel, chromium, and cobalt in Kananga and in the Territory of Kazumba; and oil in the Territory of Dekese.

**iv) Climate Change**

DRC is highly vulnerable to climate change. The most common DRC climate risks are the following: heavy rainfall, prolonged droughts, floods, heat waves and coastal erosion crises. In the years 2050-2100, annual precipitation could be 7-11% higher than current values, leading, on the one hand, to leaching, soil degradation by erosion and flooding, and, on the other hand, to an increase in the evaporation rate due to temperature rises in the range 1.5 to 4.5° C. The most important impact of climate change is undoubtedly land degradation. This means partial/total loss of the quantitative/qualitative productivity, resulting from phenomena such as soil erosion, loss of soil fertility, deterioration of soil structure, deforestation, poor farming methods and farming on marginal lands.

**4.2) Biological Environment**

The natural vegetation of Western Kasai Province corresponds to the various climate types found in the area. Plant formations come in three types :

i) **Evergreen rainforest (Equatorial),** covering the north of the province, the Salonga National Park, and occupies about half of the territory of Dekese. Afforestation rate is estimated at 75% in heterogeneous or homogeneous mass ;
ii) The dense semi-deciduous forest (Subequatorial) alternating with savannah area. Afforestation rate is estimated at 60% and this area includes South Dekese Territory, the Northern Territory of Demba, Dimbelenge, Mweka, Luebo Ilebo, and Tshikapa.

iii) The savannah area interspersed with gallery forests covering the South-west and the rest of the Province and the Project. These savannas are of two types, depending on the nature of the territory of their location. The first has prevailing Hyperrhenia on rich sandy soil in the region that includes southern Territory of Luiza. The second is predominated by imperata on the heaviest soil (poor land) including the southern Territory of Demba, Dimbelenge, and the entire Territories of Dibaya, Kazumba and the City of Kananga.

This flora region is inhabited by a diverse wildlife including herbivores, carnivores, reptiles, and birds of various species.

4.3) Human environment

4.3.1 Population and Administrative Distribution

The Kasai Province administratively consists of a town/city, Kananga; an Urban District assimilated to city status, i.e. Tshikapa; and two Districts which are Kasai and Lulua, comprising 10 territories, 50 sectors and 626 village centers. The administrative organization is as follows: 1) the City of Kananga with 5 municipalities that are namely: Kananga, Lukonga, Ndesha, Nganza, and Katoka; II) the City of Tshikapa with 5 municipalities, namely: Dibumba I, Dibumba II, Kanzala, Mabondo, and Mbumba; III) the District of Kasai, with Luebo as the district capital and with five Territories that are namely: Dekese, Ilebo, Mweka, Kamonia and Tshikapa; IV) the District of Lulua, with Tshimbulu as the district capital and including 5 Territories which are: Demba, Dibaya, Dimbelenge, Kazumba and Luiza.

The section concerned with the funding availed by the Bank starts from the Lovua bridge and passes through Tshikapa city with a new bridge over the Kasai River, that is 53 km long. This section is entirely located in the province of Kasai Occidental, more precisely in Kasai District, Kamonia Territory, and Bapende and Kamonia Sectors. The Kasai Occidental Province has a total population of 5,296,347 inhabitants. The female population is the majority and represents 50.94%.

4.3.3 Social and economic activities

Alongside the road, in rural area, housing consists only of huts. In Tshikapa city, the built houses are in mud or reinforced concrete. Besides agriculture, the populations’ main activity is the small trade business (kiosks, shops, weekly markets) often run by women. Mobility is mainly ensured through walking and cycling. Very few trucks carrying both cargo and passengers are met along the route. However, it is worth stressing that the advanced decay of the road does not allow the use of small vehicles.

The main activities in Kasai are agriculture and diamond-digging. Tshikapa is the only city to have administrative department offices. With an estimated 1.75 million inhabitants of which 51% are female population, Tshikapa has 3 hospitals, 15 hotels, 6 provincial colleges, one judicial court, one city hall, one central bank, etc. The main activity in Tshikapa is the diamond trade (250 diamond trade counters).

4.3.4 Gender

As is the case across the rest of DRC, women are the main agent of development. Subsistence agriculture mainly depends on their productivity. They contribute for more than 70% to the production of this type of agriculture. In addition, the rural women are involved in other revenue generating activities to support the household, such as children's education, medical
care, clothing, and various contributions to family expenses. This entire burden prevents women living in rural and urban areas from realizing their full potential.

A Decree was issued creating the Ministry of Female Gender and Family (Decree No. 03-025 in 2003, the Transitional Government). This government body is connected with the Ministry of Planning. The role of this Ministry consists of the following: (i) to protect and promote the status of women and the family, (ii) to develop legal and institutional framework for the participation of women in the development of the country, (iii) to ensure effective mainstreaming of women in the country’s various programs and policies, (iv) to collaborate with the Ministries tasked with the promotion of human rights, education, justice, social affairs so as to improve women’s status, etc.

Women living within the project coverage area between Batshamba, Lovua and Tshikapa play four roles (reproductive, productive, community, and political roles) independently of men. They have a certain freedom for the use of currently available resources (access), but not as to fully determine how they should be used. This is a limiting factor for their emancipation/development: (I) women generally have access to and control over the resources they need to fulfill their reproductive and community roles, (ii) they have access but do not control the resources related to health and education (iii) they do not have access to information on HIV-AIDS (iv) they have access to currently available resources for agricultural production, but do not have the resources control, while the outcome from such resources is insufficient (v) they do not have access to nor have control over the resources necessary for the processing of products, and this limits the productivity and value-addition. (vi) they do not have access to the necessary resources nor control in order to sell the products in good condition.

**4.3.5 Subsistence crops activities**

Maize-dominated farms can be seen along the road, followed by millet, cassava, beans and rice to a lesser extent. Although they are the staple food, cassava and maize are more considered like cash crops. Their monetization is explained by the low yields of groundnuts which are only used as condiment or delicacy along the road. Food mainly consists of cassava flour often mixed with maize. As shown in section 4.3.4 on under "Gender", the woman is in charge of all agricultural production. She is forced to produce for food maintenance of the family but also to meet the financial needs for children’s school and health. She is at the beginning and the end of the entire family survival process. She not only must produce, process, and market her production but also at the same attend to household chores.

Regarding livestock, it is mainly composed of bovine, sheep, goat, porcine and poultry. This breeding is extensive and women also play a fairly important role in the activity. As women are the main income-generator through agricultural and horticultural production, they mostly invest in raising small ruminants. Fishing being artisanal, it is a marginal activity because rivers are not well stocked with fish. Besides, there is development of an intense fishing activity along the road. Several ponds of course serve as production place and fish thus raised are sold in some markets while being part of the populations’ food diversification by providing them with protein.

**4.3.6 Schools and health facilities**

Several schools, including 67 primary and 36 secondary schools, have also been identified. Greater female school attendance than male has been observed.

From health point of view, the direct area of influence of the project has an extensive healthcare network. In addition to 9 health huts numbered, 22 health centers have also been identified, 5 dispensaries and 5 hospitals have been listed. However, this situation hides a
disparity in terms of implementation. Among the five hospitals, three are located in the city of Tshikapa for a total capacity of 400 beds.

These health facilities plagued by their low capacity, chronic shortage of medicines, water shortage, lack equipment and trained personnel. It should be noted that in the hospitals, the doctor is at the same a general practitioner, a surgeon, a gynecologist, and an anesthetist.

4.3.7 Markets

Apart from Tshikapa, only two permanent markets out of six have been numbered along the road. However, six weekly markets have been numbered along the road (with a greater presence of women). Unfortunately, markets are all lacking business infrastructure. All products are displayed on the ground or on makeshift stalls.

5) Alternative solutions of the project

5.1) The no-project scenario

The no-project scenario would mean leaving the road section (RN1) under its current state, with the inconvenience it causes to the users and residents. The effects on the environment are in the form of strong gullies due to erosion, air pollution due to exhaust gas of trucks and dust during dry periods, likely to adversely affect the populations’ health, and persistence of reduced access.

The impacts of the no-project scenario can be summarized as follows: i) the land-locking of that area ii) significant dust due to the nature of soil, especially in the dry season; iii) many branch-outs causing soil compaction, water runoff and limitation of vegetation regeneration, iv) risk of accidents due to the poor condition of the road v) mobility discomfort vi) lengthy journeys times; vii) high transportation costs and vehicle maintenance costs.

The no-project scenario is not consistent with the DRC Government policy, nor is it consistent with economic and social development. Besides, the status quo does not fit the spirit and principles of improvement of the transport system and road infrastructure in the DRC.

5.2) Project alternatives

In order to achieve optimal development, taking into account the various constraints related to the physical environment and the cost of investment, four (4) options or variants routes have been analyzed. The options, under project batch 2, are the following :

- **Basic Option**: Beginning at the end of Loange village, the section builds on the existing route to Tshikapa through several villages and streams

- **Option 1**: The road will be diverted 350m from its itinerary, passing north of the village of Kikuba (Kikuba I and II);

- **Option 2**: between Pk 164+000 to 192+300 the road undergoes a change circumventing the following villages: i) Koja Kombo Katshitu (I, II, III), Mukala to fall back on the bridge built in Lovua, and ii) between pks 192+000 to 200+150, yet avoids the villages of Mukala and Katanga (6 groupings), 11 km ;

- **Option 3**: Bypassing Tshikapa city, Either to the North or the South ;

- **Option 4**: Crossing Tshikapa downtown with a bridge built on the Kasaï River.

5.3) Solution to be chosen

For the third batch between Lovua and Tshikapa, the combinations of options have generated 06 alternative itineraries.
These alternatives have been evaluated based on environmental, economic, technical and social criteria. Three (03) criteria have been used, each assigned a weighting factor (i) 20% allocated to environmental aspects, (ii) 30% attributed to the technical and economic aspects of different developments and are related to the technical complexity / constraints of which the environment physical characteristics will depend on, and (iii) the last criterion takes into account the importance of the populations’ trips. 50% have been assigned to aspect, due to the physical movement of households with the demolition of homes, loss of property and loss of income or livelihood.

It stands out from the six scenario examined according to the three criteria selected, that the alternative grouping options 1, 2 and 4 get the highest score (average weight = 3). This alternative solution causes less negative impact on the atmospheric environment (noise, air pollution) through a better flow and significantly reduces accidents. Population mobility remains a defining element for option 4. To minimize the impacts of resettlement, the itinerary is studied based on the least minimum land occupancy. In this option, the road will run along the left bank of the Tshikapa river towards the quarry and cross the Kasai stream through a bridge and then on connect to 3Z round-about. It will also bypass the ravine located in Kele to reach the RN1 going to Kananga. This option is the least negative and seems to meet the wishes of the people and local administrative authorities.
6) Potential Impacts and mitigation and compensation measures

6.1) Negative impacts

6.1.1) Construction phase:

a) Biological Environment: The project will not cause significant destruction of vegetation, the lane marking exists and the sidewalks are clear. The impacts of the project (during the preparation phase and the work phase) on plant resources will be marginal. During construction, it should be noted that some semi or fully protected tree species, which are too close to the road, may be logged. In such an event, the road building company will have to approach the decentralized services of the Ministry of Environment, Nature Preservation, and Tourism to obtain required permits for logging such trees. The use of wood as an energy source at the road construction bases is prohibited. Provisions protecting the banks of the Kasaï River are taken into account in the technical study of the bridge, upstream and downstream of it.

b) Human environment: The preparation phase is important for the deployment of bases and mobilization of equipment. The first physical damages to the environment and human environment occur during the first phase, followed by damages occurring during the construction phase.

i) Disruption of activities: During site preparation and then the project implementation, some of the activities in the immediate vicinity of the project will be disrupted, especially in the vicinity of the Hôpital Neighborhood, by the deployment of the base facilities necessary for the construction of Kasaï bridge. Activities in that neighborhood will be either halted or reduced, which will result in a loss in terms of jobs and direct income.

ii) Loss of business for women: the most common activities identified are small sales of bread, salted fish, cassava, corn, fruits and vegetables, local drinks, water, etc.

iii) Disruption to traffic and access: The works will cause disruption of vehicle traffic and pedestrians with increased risks of accidents due to the movement of machinery and construction vehicles, including diversion roads which will be obstructed or flooded during the rainy seasons.

iv) Displacements on fences: Works will require the destruction of some fences and uprooting of trees on the edge of the existing National Highway 1.

v) The acoustic state: The Impact will be relatively high during the works. Acoustic pollution from earthmoving, transport, stripping, paving will be a localized and temporary inconvenience to local residents and especially for homes.

vi) Deterioration of living conditions and health: The household garbage collection in the vicinity of houses will be disturbed. The accumulation of the works such as cuttings, backfilling, rubble and waste from the works will be an additional burden for the population. The works will generate huge amounts of fine dust. This dust can affect local populations with risks of respiratory diseases.

vii) Land occupancy and ground compaction: due to repeated passages of heavy equipment and following the installation and operating bases and road construction bases and the stripping of the ground due to the clearing of vegetation on the installation site. They involve risks of ground pollution because of potential oil spills, storage of construction materials from the road and possibly the abandonment of organic or inorganic waste. However, it should be noted that the construction bases are temporary construction facilities and the affected areas could be renovated after construction.
viii) **Soil erosion and erosion of the banks of the Kasaï Stream:** Exploiting existing side areas can increase soil erosion. Non rehabilitated side areas are likely to promote the stagnation of dirty water and the proliferation of vectors of diseases such as mosquitoes. The quarries identified are: A) Bondo (Pk133) sandstone quarry, b) Lovua (Pk 178) it is an alluvial deposit, where 40,000 m³ will be extracted from. Erosion risks are also linked to the disruption of drainage during excavation. Disruption of water flow regimes of the Kasaï River in the vicinity is likely to occur. It will be temporary, though. It is also recommended to undertake the work during the dry season. However, after project completion, the structures, culverts and ditches put in place, will allow better drainage of rainwater and should limit the gullies along the road. This will be a positive impact after construction.

ix) **Pollution** The coating facilities also include potential air pollution with dust and combustion-related releases. The construction bases can cause pollution due to sewage or waste mismanagement.

6.1. 2) **Operational phase:**

a) **Biological Environment**: Seeing that the planned works only pertain to the existing lane marking, already integrated in its natural environment, the project will not affect the natural habitats, flora and fauna. The project has no negative impact on the natural parks, biosphere reserves or sensitive/protected areas. It provides no further deterioration in the quality of the abiotic environment (air, water, soil) during the operation of the renovated and redeveloped road.

b) **Human environment**: The negative impacts of the project during the operational phase remain insignificant. However, it will involve nuisance to local residents, limited to the pollution generated by a gradually higher traffic with the risk of accidents to pedestrians as a result greater speeds on the renovated and tarred road.

   (i) **Noise pollution**: in the operating phase the reference speed on the road will be 80 km/h. The traffic will be constantly increasing. Noise will be exacerbated by the combined action of increased number of vehicles travelling on the road and its closeness to the surrounding residents.

   (ii) **Population and social life** The period of adaptation to the operation of the new road will affect some practices related to pedestrian traffic. The local population will be exposed to increased risk of traffic accidents due to traffic fluidity, increased traffic and speeds, particularly in the city of Tshikapa, hence the need for an awareness campaign.

   (iii) **Economic activities and habitat** Access will be limited for certain activities during the operational phase of the renovated road. Such activities will include those that used to be conducted on the sidewalk of the road, for the parking of customers or suppliers of the activities. Parking areas will be provided and as well as outlined parking spots for the temporary parking all along the road crossing Tshikapa. These arrangements are necessary to mitigate this constraint.

6. 2) **Positive impacts**

The positive impacts of the road to the physical environment are all linked to the developments funded by the project and the establishment of a maintenance system to perpetuate quality of the road infrastructure. The positive impacts of the road on the biological environment are all related to the opening it provides and will help administrative services, associations and NGOs to expand their activities throughout the project area. The road improvements will help have a
more structured vehicle traffic (bidirectional road), smoother, cheaper trips, thereby improving the status of road safety. Expected benefits are mainly the following:

i) **Reduced travel time**: the standard of the current road between Batshamba and Tshikapa is very bad. The travel time is very long (26 to 32 h). Its renovation will allow average travel speeds of about 80km / h for light vehicles and 40km / h for heavy trucks.

ii) **Reduced accident rate**: made possible with regulated traffic, horizontal and vertical signs and hazard warning signs.

iii) **Easy access to health, education and administration facilities**: Access to administrative, economic, educational, medical facilities of Tshikapa will be facilitated and improved in terms of travel time saving, safety and comfort, as well as exchanges inside and outside the province, especially between Kinshasa and Kananga.

iv) **Job creation**: During the construction, operation and subsequent maintenance phases, the number and qualifications of employees will be set by companies and their subcontractors according to their needs. Considering that construction for this type of project requires an average of 35 and 40 jobs per kilometer, employment creation is likely to be around 2,400 jobs, nearly 1,000 for the duration of the construction. Nearly 100 long-term employments will be secured in the operation phase. The surrounding communities will supply the potential labor, mainly for security agents, agents working on the alternating traffic and manual work of earthworks, or weeding. The recruitment of several senior and middle executives, including foreman (engineers), team leaders (senior technicians) and topographers (technicians) will also take place.

v) **Facilitation of access and movement**: The project will be beneficial to the local populations of Loange, Lukaka, Bondo, Kikuba, Katolo, Kayala, Koji-combo and those of Lovua, Katanga and Tshikapa city, particularly for vulnerable persons (women, children and the elderly) because it will facilitate their daily trips to the city center, to health centers and social and educational facilities located in the city, including workers and other businessmen and traders who travel daily on the road.

vi) **Thriving of social and economic activities**: During construction, the population located in the project area will experience an increase, not only as a result of the presence of company’s staff members but also that of the people coming to engage in business activities. The authority of traditional chiefs will be strengthened during the construction phase through their involvement in the commitments made by the various parties (contract authority, business and population), and will be a guarantee of social cohesion. Further, the temporary flow of workers to the work area will increase the consumption of several commodities such as fuel, food, thus increasing revenues for businesses, mostly run by women.

vii) **Better environmental integration**: Improvement of hydraulic structures (culverts and pipes) and drainage (gutters) of rainwater will contribute to fight soil erosion, protect water resources, and avoid flooding. Anti-erosion measures (rolling basins, planting of talus, stabilization of erosion areas, boom, low walls,) will reduce landslide phenomena and loss of land and contribute to the sustainability of the road itself. Environmental development aisles of the road (alignment plantations and trees) will be used to improve aesthetics and reduce the magnitude of noise and light pollution. They will have a positive impact on plant resources. These plantations will be preferably done with native species for easier integration into the landscape. Other benefits of these plantations are: i) thermal alleviation; ii) screen against dust; iii) demarcation effect iv) mitigation of air pollution by absorbing carbon dioxide.

viii) **Regeneration of plant resources** in some areas will be enabled by the removal of deflections in the village lands. Also, by reducing dust emissions, the asphalting of the road will have a positive impact on the survival rate of seedlings and, consequentially, on plant
resources. The ongoing maintenance by Office des Routes will highly allow reduction of degradation risk.

6.3) Mitigation and Enhancement Measures

6.3.1) Compensatory measures related to the release of the sidewalks

i) Moving activities and compensation for PAP: a total amount of CF 260 million has been allocated to compensation for PAPs that result in loss of business, assets built (in Tshikapa) and agricultural assets.

ii) Relocation of infrastructure and fencing will be needed. They are integrated into the project, and are subject to a separate line item in the DQE.

6.3.2) Mitigation measures during the construction phase

The main mitigation measures, primarily focused on the organization of work and the base equipment, as set up in the specifications of the company to reduce the overall pollution of the work are as follows:

(i) Site facilities: the areas of the building sites will be installed in places of open enclaves the access to which will have been facilitated, and that are not used for agricultural or religious purposes. The road construction companies in charge of the work shall ensure their living bases are located away from wells and rivers to avoid pollution of the resource. No deposit of materials that may release pollutants shall be permitted within a given security perimeter.

(ii) Traffic and deviations plan: A plan for movement of machines will be developed to allow greater mobility and accessibility for residents. It must be scalable depending on the phasing planned for works, especially in Tshikapa. This plan will be reinforced by the installation of signs and information. Work areas will be clearly marked.

(iii) Deployment of fuel and lubricants warehouses: Storage units of hydrocarbon products will be either tanks or barrels in surface placed in appropriate containment areas to avoid spillage or tank failure and a minimal risk of fire. Cleaning up equipment for any spills will be provided. This material will be maintained in perfect condition.

(iv) Containment of flammable and hazardous substances: Oxygen, propane and acetylene for welding operations will be stored in a designated area, fenced for this purpose and protected from any possibility of accident with a vehicle. Fire-fighting emergency equipment are required. Waste oils will be collected in drums for recycling and sent off-site under the conditions imposed by the GEEC in connection with the Supervision mission.

(v) Soil contaminated by fuels and lubricants: a special area will be dedicated for potential treatment of the soil contaminated by oil products. They will be excavated and placed in containment trays sealed and decontaminated using solvents. The treated soil will be disposed of in an approved garbage dump.

(vi) Cutting down trees and hedges: cutting trees requires prior authorization from GEEC decentralized services. The cutting of wood must imperatively be evaluated. In compensation, plantations and seeding will be carried out in the area covered by the works (after completion). It is planned to plant nearly 3,000 street and shade trees to compensate in the villages and the cities crossed (about 1500 between Mangoya, Mukala, Katanga, Kayateshia, Kibimlongo and 1500 in Tshikapa).

(vii) The movement of soil: The quarries or the sites designated for deposits of excess soil will be chosen so as not to generate landscape impact or be dangerous; they will be restored at the end of the work.
(viii) **Dust emissions**: To reduce dust emissions from the traffic of engines and transportation of materials, site managers will conduct watering activities on adjacent tracks to populated areas. The temporary storage of filling or excavation may also require humidification.

(ix) **Liquid waste, risks of water pollution, solid waste**: Effluent will be collected and disposed of according to their composition: In sealed septic tank or mobile collection systems. The water for washing and maintaining equipment should undergo treatment of oil-water separation, water will be discharged into septic tanks and oil and bitumen residues collected, recycled or destroyed. Any deposits of oil and petroleum products are rigorously designed to avoid spills on the ground and in rivers. Solid wastes from the sites will be sent to authorized garbage dumb and will allow the selection and recycling of wood, metal and organic matter into compost.

The risk of erosion and evaluation of soil stability: Monitoring the evolution of soil stability will be done by contractors; it will consist in identifying the areas of their projects/work that are vulnerable to erosion during and after construction. Drainages will be positioned and physical techniques of talus stabilization will be applied (booms, gabion, low walls, etc...). The disposals for protecting the banks of the Kasaï River are included in the technical study of the bridge upstream and downstream of it.

Table 1 below shows a summary of the main environmental and social measures.
<table>
<thead>
<tr>
<th>Potential negative impacts</th>
<th>Recommended mitigation measures</th>
<th>Residual Impacts</th>
<th>Responsible for implementation</th>
<th>Responsible for monitoring</th>
<th>Implementation schedule</th>
<th>Performance indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparatory</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Compensation</td>
<td>Continuous monitoring of the progress of the compensation procedure</td>
<td>Minor</td>
<td>CPAR</td>
<td>CPAR / MDC</td>
<td>Prior to works</td>
<td>Number of complaints</td>
</tr>
<tr>
<td>Clearing, deforestation of all vegetation found within the base life area</td>
<td>Choice of little wooded areas or relatively close to the site area</td>
<td>Minor</td>
<td>Contractor / OR / GEEC / relevant departments</td>
<td>OR / GEEC / Control Consultant</td>
<td>Prior to works</td>
<td>Number of complaints</td>
</tr>
<tr>
<td>Clearing, deforestation of all vegetation found within the road area and deviations</td>
<td>Seeking permission from relevant departments prior to any cutting of trees within the area</td>
<td>Minor</td>
<td>Contractor / OR / GEEC</td>
<td>Control Consultant</td>
<td>Prior to works</td>
<td>Permission from forestry Departments</td>
</tr>
<tr>
<td>Clearing, deforestation of all vegetation found within the road area and deviations</td>
<td>Alignment planting along road sections</td>
<td>Minor</td>
<td>Contractor</td>
<td>Control Consultant</td>
<td>After the works</td>
<td></td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td></td>
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</tr>
<tr>
<td>Soil pollution including</td>
<td>Development of Pollutants and Waste Management Plan (PAE)</td>
<td>Minor</td>
<td>Contractor</td>
<td>OR / GEEC / Control Consultant</td>
<td>Prior to works</td>
<td>Approval by GEEC</td>
</tr>
<tr>
<td>Soil contamination by oil products or releases of used oil</td>
<td>Collection of waste oil to keep in authorized storage</td>
<td>Minor</td>
<td>Contractor</td>
<td>Control Consultant</td>
<td>Prior to works</td>
<td></td>
</tr>
<tr>
<td>Loss of agricultural value, and landscape degradation by the accumulation of waste (from soil cuttings, earthworks, etc.).</td>
<td>Collection and disposal of stripping and demolition waste to authorized dump as the works are getting on</td>
<td>Minor</td>
<td>Contractor</td>
<td>Control Consultant</td>
<td>During works</td>
<td>MDC Report</td>
</tr>
<tr>
<td></td>
<td>Setting in place of garbage and waste collection system on site base</td>
<td></td>
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<tr>
<td></td>
<td>Collection and disposal of garbage from the site to the authorized dump</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Noise and air pollution</td>
<td>Awareness of the Contractor for the compliance with noise standard on site (75dB) and the good maintenance of equipment</td>
<td>Minor</td>
<td>Contractor</td>
<td>Control Consultant</td>
<td>During works</td>
<td>Number of complaints</td>
</tr>
<tr>
<td></td>
<td>Dedusting system with sleeves for the coated material drying / Fireplace line</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Watering operating tracks and site tracks if necessary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accident risks and health consequences of air pollution</td>
<td>Development and implementation of PPSPS</td>
<td>Minor</td>
<td>Contractor</td>
<td>GEEC / Control Consultant</td>
<td>Prior to works</td>
<td>Validation by GEEC</td>
</tr>
</tbody>
</table>

16
<table>
<thead>
<tr>
<th>Potentiel negative impacts</th>
<th>Recommended mitigation measures</th>
<th>Residual Impacts</th>
<th>Responsible for implementation</th>
<th>Responsible for monitoring</th>
<th>Implementation schedule</th>
<th>Performance indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Safety risks</td>
<td>Workers’ safety gears (boots, helmets, masks)</td>
<td>Contractor / ONG</td>
<td>OR / GEEC</td>
<td>During works</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Difficult access for people in domestic sectors</td>
<td>Marking the site, construction of pedestrian walkway</td>
<td>Contractor</td>
<td>OR / GEEC</td>
<td>Prior to works</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Spread of STIs – HIV AIDS</td>
<td>Development and implementation of HIV-AIDS Awareness Program</td>
<td>Contractor</td>
<td>Environmental Expert OR / GEEC</td>
<td>At the settlement of base vie</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Health and Safety risks</td>
<td>Protection of cargo</td>
<td>Contractor</td>
<td>OR / GEEC</td>
<td>During works</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Difficult access for people in domestic sectors</td>
<td>Clearing indicating works being performed (display boards, reflectorized tapes, etc.)</td>
<td>Contractor</td>
<td>OR / GEEC</td>
<td>Prior to works</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Spread of STIs – HIV AIDS</td>
<td>Provide for a pharmacy unit for first aid</td>
<td>Contractor</td>
<td>Environmental Expert OR / GEEC</td>
<td>At the settlement of base vie</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Spread of STIs – HIV AIDS</td>
<td>Prepare and display a health and safety notice as hygiene guidelines for the site</td>
<td>Contractor</td>
<td>Environmental Expert OR / GEEC</td>
<td>At the settlement of base vie</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Spread of STIs – HIV AIDS</td>
<td>Prepare and display safety instructions and guidelines in case of accident</td>
<td>Contractor</td>
<td>Environmental Expert OR / GEEC</td>
<td>At the settlement of base vie</td>
<td>MDC Report</td>
<td></td>
</tr>
<tr>
<td>Water pollution by oil, waste oil</td>
<td>Provision of storage facilities for liquid products in tanks.</td>
<td>Minor</td>
<td>Contractor</td>
<td>Settlement of base vie</td>
<td>Implementation extent for technical and environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Groundwater Contamination by sewage (site base)</td>
<td>Sealing handling areas matched with a hydrocarbon oil separator</td>
<td>Minor</td>
<td>Contractor</td>
<td>During works</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Groundwater Contamination by sewage (site base)</td>
<td>Construction of site base in compliance with health standards</td>
<td>Minor</td>
<td>Contractor / ONG</td>
<td>During works</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Groundwater Contamination by sewage (site base)</td>
<td>Regular emptying and disposal of sanitary blocks to the authorized locations</td>
<td>Minor</td>
<td>Control Consultant, OR / GEEC</td>
<td>A la fin des travaux</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Noise pollution</td>
<td>Changing oil in specific areas of servicing/petrol stations nearby or collecting it in suitable tanks and take it to authorized location</td>
<td>Minor</td>
<td>Contractor</td>
<td>After the works</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Frequent traffic Accidents</td>
<td>Setting in place of speed bumps</td>
<td>Minor</td>
<td>Contractor</td>
<td>After the works</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Indirect Impacts on vegetation and landscape aspects</td>
<td>Indicating the speed limit by notice board</td>
<td>Minor</td>
<td>Control Consultant</td>
<td>After the works</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Indirect Impacts on vegetation and landscape aspects</td>
<td>Setting in place of vertical and horizontal signs</td>
<td>Minor</td>
<td>Control Consultant</td>
<td>After the works</td>
<td>Implementation extent for environmental provisions</td>
<td></td>
</tr>
<tr>
<td>Indirect Impacts on vegetation and landscape aspects</td>
<td>Alignment planting/landscaping</td>
<td>Medium</td>
<td>Contractor / Land Management / GEEC</td>
<td>After the works</td>
<td>Implementation extent by forestry departments</td>
<td></td>
</tr>
</tbody>
</table>
Climate Change and Management of Environmental Risk

7. 1) Project Risks
The specifications require the development of Environmental Action Plans (EAPs) and Protection Plan of Sites Environment (PPSE) and HSE in companies. They will include the emergency procedures and emergency response. The detailed PPSE of sites show all the precautionary measures adopted. This does not exclude the risk of runoff of polluting matters in ditches (or streams) and / or groundwater that may be a result of accidental spills of waste oils and fuels or dripping on the stored materials. In some areas there may be additional pressure on water supplies for the needs of the population and farmers due to samplings. In areas with steep slopes, it is suitable to prevent the risk of erosion at the covered areas of rectifications (mudslide, landslide and talus of the platform). In forested areas, it is necessary to prevent hazards and provide their management. Deposits of potential fuels have some risks of soil and water pollution due to accidental spills of oils, fuels or lubricants and fire hazards.

7. 2) Climate Change
As indicated in section 4.1, iv), the climate risks are: heavy rainfall, prolonged droughts and floods. In the adaptation purpose and for the prevention of leaching soils, soil degradation by erosion and flooding, the project includes technical disposals by setting up pools for rolling slopes greater than 2%, (ii) the design of structures referring to flood flows (for Pks 182, 185, 192, 202, 214, 216, and 223 in the city of Tshikapa). Besides, to offset the felling some tree, 1,000 alignment trees and shading trees (for villages along as well as the city of Tshikapa) will be planted. As such, the project will contribute to the mitigation of climate change (carbon sequestration and reduction of greenhouse gas emissions in the atmosphere).

8) Social and Environmental Monitoring Program
In accordance with Congolese institutional provisions, the responsibility of monitoring the achievements of the project will be organized and chaired by MITPR to centralize the observations made by the other Ministries and stakeholders in the project (MECNT, GEEC etc...). The MITPR, through the environment cell of Office des Routes (Road Authority), assisted by the Mission of Control (MDC), will conduct regular monitoring of achievements to the reception of the work.

The Project Manager (PM) and the Deputy Project Manager (MDC) will be responsible for taking into account environmental and social component of the project. At their initiative, the works contract will contain a description of the penalties to be applied to companies for non-compliance with specific environmental and social technical requirements. Environmental monitoring aims to regularly assess the degree of implementation or enforcement of the mitigation measures recommended by the EIES through the Environmental and Social Management Plan (ESMP) to allow the promoter to specify, adjust, refocus and possibly adapt certain measures as regards the characteristics of the environment components. To this end, the ESMP is to plan the proposed protection measures and identify the different partners and their responsibilities for the implementation of these measures. It takes place during the phases of preparation and implementation of the project and takes into account the environmental monitoring.

The monitoring Program and environmental monitoring of the works will form an integral part of environmental and social reporting of the Company. It will refer to the environmental assessments to mitigate or offset the risks on the biophysical and human environment. Annual supervision missions of the Bank will help assess the quality of the environmental and social monitoring of the project.
The site general measures are taken in the Specifications of the company. Those relating to human perceptions (deviations, noise reduction, and work schedules, watering ...) are included in the project costs. Also included are the measures for raising awareness of the local populations: (i) regarding the rules to be observed for keeping them away from the fields of action of engines and site equipment during mechanized works, (ii) regarding road safety issues and compliance to the Highway Code. The measures of conservation and preservation, protection of Kasai banks, soil and water, and vegetation represent Euros 408,000 and are part of the DQE. Sensitization of local residents and construction workers against STI / AIDS will require an estimated Euros 433,000 Euros. All these measures put together will require a total budget estimated at Euros 1,461,500,000 (Table 2).

Table 2 : Cost of mitigation measures

<table>
<thead>
<tr>
<th>Mitigation measures</th>
<th>Responsibility for implementation</th>
<th>Timing of implementation</th>
<th>Cost in Euros</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Action Plan</td>
<td>Company</td>
<td>Before the work</td>
<td>3,500</td>
</tr>
<tr>
<td>Development of a PPS, HSE</td>
<td>Company</td>
<td>Before the work</td>
<td>7,000</td>
</tr>
<tr>
<td>Anti-erosion devices</td>
<td>Company</td>
<td>During the work</td>
<td>200,000</td>
</tr>
<tr>
<td>Tree planting and bank protection</td>
<td>Company</td>
<td>During the work</td>
<td>408,000</td>
</tr>
<tr>
<td>Awareness campaign against STI / AIDS (IEC contract)</td>
<td>Company / GEEC / NGO</td>
<td>Before and during</td>
<td>433,000</td>
</tr>
<tr>
<td>Alignment - planting and landscaping</td>
<td>Company / Land Affairs / GEEC</td>
<td>End of work</td>
<td>410,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>1,461,500,000</strong></td>
</tr>
</tbody>
</table>

The monitoring cost is included in the budget of the Monitoring Mission. It stands at Euros 35,000. The cost of the monitoring plan (which includes the members of this committee and the GEEC), is included in the budget of the Mission of Control. It stands at Euros 40,000. The total cost of Environmental and Social Management Plan therefore stands at Euros 1,536,500,000 (Table 3).

Table 3 : Total cost of ESMP

<table>
<thead>
<tr>
<th>Map</th>
<th>Estimated cost in Euros</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact mitigation plan</td>
<td>1,461,500</td>
<td>Company Budget</td>
</tr>
<tr>
<td>Work Monitoring plan</td>
<td>35,000</td>
<td>MDContrôl Budget</td>
</tr>
<tr>
<td>Monitoring Plan</td>
<td>40,000</td>
<td>Monitoring Committee / MDC / GEEC</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,536,500</strong></td>
<td></td>
</tr>
</tbody>
</table>

9) Public Consultation and Information Dissemination

EEIES has been created on the principle of public consultation was based, on the one hand, on field trips, use of basic documents, and, on the other hand, on interviews with centralized and decentralized Technical service, regional services traders’ heritage, socio-professional groups, local residents, and
administrative and traditional authorities. The Representatives of the Project Manager (Infrastructure Cell) and those of the Implementation Manager (Office des Routes) met the target groups in the presence of the Governor, the Mayors of the municipalities concerned, traditional authorities and the decentralized services of OdR, OVD, land registry, and environment.

There stemmed from these consultations the will of the people and interviewed administrative authorities and representatives of the people to support the project and particularly advocate it in such a way that: (i) the project could avoid or reduce to the maximum the destruction of buildings and recommend compensation for built assets at replacement cost without depreciation and compensation of the persons directly affected by the project due to economic losses (trades and agricultural assets), (ii) the use of local labor and basic training to perform menial tasks on future site, and (iii) the project may find solutions to the problems related to road safety and activities of the roadside.

Information sessions devoted to entire second batch, were held by the preparation mission of the Bank in Katanga and Tshikapa with the attendance of the Governor, the Mayors of the municipalities concerned, traditional authorities and the decentralized services of OdR, OVD, land registry, environment and local NGOs, to inform people about the level of preparation of the renovation project of the RN1 and the principles for the compensation procedure of the people affected.

The participation of the people in the public survey itself will allow them to express the grievances and promote transparency and fairness in the process of compensation. Various media will be involved to fully inform those affected by the project, including making PAR available, using posters and radio broadcasts in local languages.

10) Additional initiatives

It has been decided during various interviews and further to various consultations conducted with NGOs, women's associations, the village communities in the project influence area including other stakeholders, that other related facilities can be built into the project. These include the renovation of two schools and a health center in Katanga center and the construction of two (02) markets in Didumba and Mbumba in the city of Tshikapa. Water points will be built in the areas where water will be required for the project and these will be handed over to the population at the end. These related facilities are a component of the project, as well as the control and monitoring of the works thereon.

11) Conclusion

The main topics arising from the environment analysis and evaluation have discussed. Appropriate measures have been associated to identify impacts with a view to offsetting or reducing such impacts. Impacts are localized in the public domain of the state.

Taking into account the impacts and measures identified, the project is considered as environmentally and socially acceptable. The project holds an environmental compliance certificate issued by the Ministry of Environment, Nature preservation and Tourism.