SUMMARY ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Project Name	**:**	**Development and Asphalting of the Batshamba – Tshikapa Road Lot 2: Loange Bridge – Tshikapa, Phase 1: Loange Bridge-Lovua Bridge**
Country	**:**	**Democratic Republic of Congo**
Project Number	**:**	**P-CD-DB0-002**
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1. Introduction

This document is the summary of the Environmental and Social Impact Assessment (ESIA) of the Project to Rehabilitate the Loange Bridge – Lovua Bridge stretch of National Road No. 1 in the Democratic Republic of Congo (DRC). This summary was prepared in accordance with the African Development Bank's Environmental and Social Assessment Guidelines and Procedures for Category 1 projects. The document first presents the project description and rationale and then the legal and institutional framework in the Democratic Republic of Congo.

The document briefly describes the main environmental conditions of the project area, through its physical, biological and human (social, cultural and economic) components and compares the project variants and alternatives in terms of technical, economic, environmental and social feasibility, including public concerns.

The document presents the most significant positive and negative impacts of the selected variant on the biophysical and human (socio-economic) environments, a summary of the environmental and social impacts and unavoidable impacts identified. Descriptions cover expected impacts during the site preparation, construction and operation phases. It then presents the compensatory and mitigative measures proposed to increase benefits and/or prevent, minimize, mitigate or compensate for negative impacts, as well as the Monitoring Programme. The public consultations held during the conduct of the ESIA are presented and additional projected-related initiatives such as the Project Resettlement Plan.

The conclusion deals with project acceptability for which an environmental compliance certificate has been issued.

2. Project Description and Rationale

National Road No.1 (NR1) links Matadi in the West with Lubumbashi in Katanga, in Eastern DRC via the towns of Kinshasa, Bandundu (Bandundu Province), Tshikapa, Kananga (Western Kasaï Province) and Mbuji-Mayi (i.e. Eastern Kasaï Province). From Mbuji-Mayi, the road also links with NR2 leading to the towns of Bukavu (South Kivu) and Goma (North Kivu). Thus, it is the country's main structuring road. The stretch covered by the final design study (Batshamba – Tshikapa) is 233.435 kilometres long and crosses two districts (Kwilu and Kasaï) situated in two administrative provinces (Bandundu and Western Kasaï).

The road section to be financed by the Bank is situated entirely in Western Kasaï Province, specifically in Kasaï District in Kamonia Territory and Bapende and Kamonia sectors. It is situated in a rural site between Loange, Kikuba and Kayal, near Lovua. The section is 66 km long.

The rehabilitation of NR1 would greatly enhance its usability in the districts crossed. The project seeks to ensure free and safe flow of traffic and thus help to facilitate the movement of people and access to the various economic and social centres in Bandundu, Kasaï and Eastern Kasaï Provinces. Hence, it will help to alleviate poverty among a segment of the Congolese population.

Road works will mainly concern earthworks (excavation and backfill), placement of the pavement structure, surfacing, including spaces for the laying of optical fibre, construction of drainage structures (small culverts, box drains, etc.), repair of existing drainage systems, installation of standard road signs (horizontal and vertical road markings), and planting of trees along villages crossed.

Most of the 80 km of ancillary roads to be rehabilitated are rural roads that help to facilitate the evacuation of agricultural produce and access by the population of the Project Impact Area (PIA) to health, social and administrative centres along NR1, particularly to Tshikapa. The related infrastructure to be rehabilitated and constructed will include schools, health centres and water points in villages situated in the project area.

The Project Impact Area is characterized by a high demand for transportation. The Direct Project Impact Area (DPIA) comprises all the human settlements, the inhabitants of which use the road in its current state and will continue to use it to travel, even if it is not rehabilitated. The DPIA includes many human settlements (58) and Tshikapa town. To these should be added four big villages (Loange, Kikuba, Kayala and Katanga) for whom the road is the nearest national highway. The extended project impact area includes geographic zones whose inhabitants could use the rehabilitated road. Thus, the road will be a more welcome alternative to other routes or even modes of transportation, in terms of time, cost, safety and comfort. Accordingly, the extended project impact area could be considered as all areas in provinces situated along the main project road.

3. Policy, Legal and Administrative Framework

3.1 Policy Framework

DRC's Transitional Constitution provides for an institutional framework for the conduct of the country's economic and social policies, which clearly includes environmental concerns. Environment protection is recognized therein as a collective responsibility.

DRC has also adopted many national action and development plans to better manage resources such as: (i) the Tropical Forest Action Plan; (ii) the National Environmental Action Plan; (iii) the National Biodiversity Strategy and Action Plan; (iv) the First National Paper on Climate Change; (v) the Agricultural and Rural Development Master Plan; (vi) the Fisheries Master Plan; and (vii) the National Housing Action Plan. These attempts at participatory planning involving all stakeholders at the national level provide guidance for achieving sustainable development and building consensus on environmental issues, as well as on economic and social development policy challenges. They consider Environmental and Social Assessment as a vital tool for environmental management.

Thus, the diagnosis made by the National Environmental Action Plan (PNAE) recognizes the problem of physical soil degradation in rural and urban areas due mainly to population pressure, erosion, bad farming practices and uncontrolled urbanization. The PNAE proposes various actions and strategies that can remedy the situation or mitigate its effects. The National Biodiversity Strategy and Action Plan is a benchmark for the sustainable management of DRC's biological resources. It defines various strategies capable of putting an end to human activities that have a negative impact on natural ecosystems.

3.2. Legal and Regulatory Framework

DRC's legal framework is characterized by a multitude of environmental instruments, most of which are very old. The applicable framework comprises:

(i) The Ordinance-Law of 22 August 1969 on Nature Conservation and the Law of 22 July 1975 establishing conservation areas define the constraints to be

overcome in the context of impact assessments in specific areas such as undeveloped nature reserves and "conservation areas";

(ii) Law No. 11-2002 of 29 August 2002 instituting the Forest Code, which is a catch-all piece of legislation, expresses the genuine resolve to improve forestry management. It prohibits the deforestation of erosion- and flood-prone areas and deforestation within 50 metres on either side of streams and within 100 metres of their sources. However, the law does not define impact assessment as a forest and wildlife resource analytical and protection tool;

(iii) Law No. 7-2002 of 11 July 2002 instituting the Mining Code which defines conditions for opening and operating material deposits. Environmental aspects are taken into account in the provisions of the Code;

(iv) Ordinance-Law No. 71-16 of 15 March 1971 on the protection of cultural property;

(v) Law No. 75-4 of 22 July 1975 on the establishment of conservation areas;

(vi) Ordinance No. 75-232 of 2 July 1975 to establish the Inter-ministerial Committee on Environment, Nature Conservation and Tourism;

(vii) Ordinance No. 76-252 of 22 September 1976 to organize some services of the Department of Environment, Nature Conservation and Tourism;

DRC's regulatory framework for expropriation of property for public purpose is governed by Law No. 77/1 of 22 February 1977 on expropriation for public purpose. The terms and conditions for land use are set forth in Law No. 73-21 of 20 July 1973 instituting the general property regime, land tenure and property regime and the security regime, as amended and supplemented by Law No. 80-8 of 18 July 1980 laying down the land law in the Democratic Republic of Congo. These are now considered as reference instruments on the subject.

State lands are classified as follows: (i) State land used for public purpose (Section 55); (ii) private State land intended for residential, industrial, agricultural or livestock purposes; (iii) private land; and (iv) land occupied by local communities in accordance with their customary land rights.

Since the introduction of the 1973 land reform, all land belongs to the State (as such, to harmonize the law, "native lands" no longer exist).

The expropriation procedure comprises two phases: (i) the administrative phase which spells out the nature of expropriation, the scope of public purpose, holders of the power of eminent domain, and rights that can be expropriated. It comprises public consultation which includes public inquiry and/or public hearing; and (ii) the legal phase which includes, in the last resort, compensation and other rights enjoyed by those whose property has been expropriated. The courts only have jurisdiction over incidents and claims arising from an inconclusive transaction between the expropriator and the expropriated.

3.3. Institutional and Administrative Framework

The main institutions concerned are the Ministry of Infrastructure, Public Works and Reconstruction (MITPR) and the Ministry of Environment, Nature Conservation and Tourism (MECNT).

The MITPR will be the Contracting Authority through the Infrastructure Unit, the Delegated Contracting Authority, which has an Environmental Unit (EU) responsible for the development and implementation of the Environmental and Social Management Plan.

The functions of this Unit include: (i) coordinating and monitoring environmental guidelines; (ii) centralizing information on environmental and social issues related to road projects; and (iii) putting contractors in touch with various services that can provide technical solutions to mitigate environmental impacts.

The MECNT's mission is to coordinate all activities relating to the environment and nature conservation. The Congo Environmental Assessment Group (GEEC) will be responsible for the promotion and implementation of activities. In this capacity, GEEC will be in charge of evaluating reports and issuing environmental compliance certificates.

4. Description of Project Environment

4.1 Physical Environment

***(i) Climate*:** Western Kasaï Province has an equatorial climate in the North and a Sudanese climate in the South. The equatorial climate, which is an extension of the climate found in the neighbouring Equator Province, differs from the other by the absence of a dry season that prevails in the Province's far-north. It combines with a transitional climate found in Demba South and throughout Central Dekese. The second climate type is hot and humid, with a dry season that increases in duration as one moves southwards. In the southern as well as in the northern parts of Ilebo, Mweka and north-east Luebo, the dry season lasts two months.

Western Kasaï Province has an average annual temperature difference of 10.74 °C. The provincial average is about 24.18 °C with peaks of 32.4 °C in June in Tshikapa. The lowest temperature (15.7 °C) is in July in Tshikapa. Rainfall is a function of the climate. It is heaviest in the equatorial zone than in the so-called tropical zone. In fact, rainfall ranges from 1 400 to 1 900 mm in Western Kasaï Province.

***(ii) Relief and hydrology*:** the relief of Western Kasaï Province is characterized by two major relief features comprising the part situated North of the 4th Parallel which is dominated by low altitudes of below 500 m forming part of the southern hills of the central basin, and the part lying South of the 4th Parallel, dominated by average altitudes of between 500 and 1 000 m on the Kasaï Plateau (this covers nearly three quarters of the Province). The Kasaï River and its tributaries (Lulua, Lukenie, Sankuru, and Tshikapa Loange) drain into these plateaux, flowing from South to North.

These rivers form a navigable network that is conducive to the transportation of goods and people. **Ilebo** on the Kasai River is the Province's main port. It links the railway and the waterway **from Katanga to Kinshasa and vice-versa**.

***(iii) Geology and hydro-geology*:** due to a fairly well developed vegetation cover in Western Kasaï Province, the bedrock consists of the Lulua (Kibara) group and the pre-Lulua formations that crop out mainly in valleys. The latter are mostly magmatic and found in the Kasaï-Lulua confluence, with a mainly chlorite-schist, amphiboloschistous, gneissic and quartzitic texture. The Lulua group crops out in the Lueta, Lulua and Kasaï valleys and their tributaries in Kasaï valley to the South-West up to Angola. The South-Eastern part of the Luiza (Masuika) area is said to rest on bedrock composed mainly of carbonate, conglomerate, shale, quartzite and arkose rocks.

From the geologic viewpoint, Western Kasaï's subsoil consists mainly of granitic rocks whose outcrop is exploited in two quarries in Kananga. It abounds in geologic resources, notably diamonds in Tshikapa, Luebo, Demba, Kazumba, Mweka, Ilebo, Dibaya and Dimbelenge; gold and tin in Luiza and Kazumba; iron in Luebo, Tshikapa and Kzumba; nickel, chromium and cobalt in Kananga and Kazumba, as well as oil in Dekese.

***(iv) Climate change*:** DRC is highly vulnerable to climate change. The most common climatic risks in DRC are heavy rainfall, prolonged droughts, floods, heat waves and coastal erosion. By 2050-2100, annual rainfall would be 7% to 11% higher than the current amounts, resulting in leaching, soil degradation by erosion and floods, on the one hand, and an increase in the rate of evaporation due to increased temperature of about 1.5 °C to 4.5 °C. The most significant impact of climate change is certainly land degradation. This implies the partial/complete loss of productivity in terms of quantity and quality due to phenomena such as soil erosion, loss of soil fertility, deterioration of soil structure, deforestation, poor farming methods and farming on marginal land.

With the trend towards increased annual rainfall, the non-usability of the road in its present state will be increased, thus affecting the population of the area through prolonged periods of isolation. The road will also help to significantly reduce soil degradation by considerably limiting soil loss.

In terms of greenhouse gas emission, it should be noted that the negative impact of an increase in road traffic on the area will be offset by a decrease in air travel, which is currently the preferred mode of travel between Tshikapa and the other main towns, namely Kinshasa and Kananga.

4.2 Biological Environment

The natural vegetation of Western Kasaï Province corresponds to the various types of climate found in this area. There are three types of plant formation:

(i) The evergreen (equatorial) rainforest, which covers the northern part of the Province and the Salonga National Park, and occupies about half of Dekese Territory. The afforestation rate is estimated at 75% in heterogeneous or homogeneous forests.

(ii) The semi-deciduous (sub-equatorial) rainforest alternating with savannah. The afforestation rate is estimated at 60%. This area includes Southern Dekese Territory, Northern Demba, Dimbelenge, Mweka, Luebo, Ilebo and Tshikapa Territories.

(iii) The savannah zone, which is interspersed with forest galleries covering the South-Western part, the rest of the Province and the project area. There are two types of savannah that vary according to the nature of the territory where they are found. The first type is dominated by hyperrhenia growing on the rich sandy soils of the region, including Southern Luiza Territory. The second with a predominance of blade grass growing on very heavy (infertile) soil covers in Southern Demba and Dimbelenge Territories, the entire Dibaya and Kazumba Territories and Kananga town.

This flora is inhabited by diverse wildlife, including herbivores, carnivores, reptiles and many bird species.

4.3 Human Environment

4.3.1 Administrative Set-up and Population Distribution

Administratively, Kasaï Province comprises one town (Kananga), an administrative unit with the status of a town (Tshikapa) and two Districts (Kasaï and Lulua) made up of 10 territories, 50 sectors and 626 groups. These entities include the following territorial units: (i) Kananga town which comprises five councils (Kananga, Lukonga, Ndeshi, Nganzi and Katoka); (ii) Tshikapa town comprising five councils or neighbourhoods (Dibumba I, Dibumba II, Kanzala, Mabondo and Mbumba); (iii) Kasaï District, the capital being Luebo with its five territories (Dekese, Ilebo, Mweka, Kamonia and Tshikapa); and (iv) Lulua District, the capital being Tshimbulu consisting of five territories (Demba, Dibaya, Dimbelenge, Kazumba, and Luiza).
The road section covered by Bank financing extends from Loange Bridge to Lovua Bridge, representing a distance of 63 kilometres. This section lies entirely in Western Kasaï Province, specifically in Kasaï District, Kamonia Territory, and Bapende and Kamonia Sectors. The total population of Western Kasaï Province is **5 296 347**. Women account for 50.94% of the population.

4.3.2 Main Ethnic Groups and Minorities

It is difficult to enumerate the various ethnic groups of Western Kasaï owing to many population movements caused by migration, conquest, industrialization, ethnic and political conflicts. However, some groups can be distinguished according to districts.

Kasaï District is made up of the Kuba ethnic group in the territories of Mweka and Lulua, and the Bieeng in Luebo and Tshikapa Territories, the Luba in the Mweka, Ilebo, Luebo and Tshikapa Territories, the Kete in Mweka, Tshikapa and Luebo Territories, the Leele in Ilebo Territory, the Ndenfgese and Yajima (Yaelima) in Dekese Territory, the Pende, Dzing (Dinga), Tshokwe and Lunda in Tshikapa Territory and the Njembe in Ilebo and Tshikapa Territories.
The Tswa, Songye, Ndengese, Yaelima and Lunda are considered as ethnic minorities in Western Kasaï Province. These ethnic affiliations do cause segregation or legal discrimination against people. Socially, these ethnic differences do not prevent access to education, employment, trading, marriage and choice of residence. The social advancement of individuals is free of all ethnic barriers. Thus, the project will not adversely impact or interfere with the minorities and vice-versa.

4.3.3 Socio-economic Activities

Housing along the project road consists only of huts and a few mud houses. The main activity besides agriculture is petty trade (beaneries, shops, weekly markets) often carried out by women. Movement is mainly on foot and by bicycle. There are very few trucks carrying both goods and passengers on the road. However, it should be recalled that light-duty vehicles cannot ply the road because of its advanced state of degradation.

The main activities in Kasaï Province are farming and the search for diamonds. Tshikapa is the only town with administrative services. Its population is estimated at 1 750 000, 51% of them women. It has 3 hospitals, 15 hotels, 6 regional higher institutes, 1 court, 1 town hall, 1 central bank, etc. The main activity in Tshikapa is diamond trade (250 counters).

4.3.4 Gender Issues

Like elsewhere in DRC, women are the main development agents. They play a key role in subsistence farming, accounting for more than 70% of production and carrying out most of the activities in the area. In addition, rural women spend most of their time carrying out other income-generating activities to meet household needs such as children's education, medical care, clothing, and various contributions to household expenditure. All these tasks are factors that prevent women in rural and urban areas from taking advantage of development opportunities.

The provincial authorities have initiated a campaign to raise awareness on the need to mainstream the "gender" dimension into all aspects of life. To this end, NGOs, cooperatives, churches and charitable/development organizations are paying special attention to women's activities and seeking ways and means of easing their work. Accordingly, many organizations have included in their activity programmes specific components devoted to women, notably literacy education, installation of food mills, provision of appropriate technology, health care delivery, etc. However, the results obtained are moderate in view of bottlenecks particularly attributable to socio-cultural factors that promote exclusion and discrimination. To illustrate the status of women, MICS/2 presents some indicators of the level of insecurity of women in these terms: (i) in Western Kasaï Province, the proportion of teenage mothers aged between 15 and 19 years who have already had at least one child born alive is 21.9% as against a national average of 20.1%; and (ii) the adjusted infant and child mortality rate is 136 per 1 000 live births as against 126 for the entire country, etc.

These inequalities, visible in all aspects of the life of women, particularly through all forms of violence against women, exclusion from politics, employment, education, control of resources, training, health and decision-making, further reduce their level of participation in the development process.

The project area is characterized by widespread deterioration of basic infrastructure (rural roads, national roads, schools, health centres, etc.) as well as lack of means of transportation. This situation tends to further worsen the specific situation of women and make their daily chores more cumbersome. It also tends to heighten the stranglehold of certain discriminatory customs on women (early marriage, violence, etc.).

Despite some progress on the legal front, the situation of Congolese women is far from rosy and their empowerment is very low. According to the results of the 2007 Demographic and Health Survey (DHS), the proportion of women in Parliament and in the Senate is respectively

8% and 5%, far from the 50% parity provided for by the Constitution of the Republic. Gender inequalities persist in many socio-economic domains and their scope seems to vary according to whether one is in the rural or urban centres.

Women living in the project area between Batshamba and Tshikapa play four roles (reproductive, productive, community and political) independently of men. They enjoy some freedom over the use (access) of available resources, but cannot fully take decisions concerning their use, which limits their empowerment/development:

(i) women generally have access to and control over the resources they need to play their reproductive and community roles;

(ii) they have access to but no control over resources related to health and education;

(iii) they do not have access to information on AIDS;

(iv) they have access to but no control over available resources for agricultural production, but production is insufficient;

(v) they lack access to and control over resources needed for the processing of produce, which limits productivity and value added;

(vi) they have no access to and control over resources needed to sell products under good conditions.

The expressed needs are practical needs. An operation that addresses these needs does not call into question the division of labour between men and women but seeks mainly to increase access to resources and benefits. It will improve productivity and income.

This analysis of women's conditions in the project impact area, their role and what they need to ensure their emancipation has, in addition to the studies carried out in the area, helped to shed light on improvement measures proposed under this project.

4.3.5 Food Production Activities

The crops cultivated along the project road are mainly maize, millet, cassava, beans and, to a lesser extent, rice. Although cassava and maize are the staple food, they are increasingly being considered as cash crops. Their monetization is attributable to the low yields of groundnut, which is used along the project road only as a condiment and/or confectionery. Food consists mainly of cassava flour which is often mixed with maize flour. As shown in Section 4.3.4 on "Gender Issues", women are responsible for all agricultural production. They are obliged to produce food to feed their families, but also to meet financial needs related to the education of their children and the health of their families. Women are responsible for family survival from start to finish. At the same time, they must produce, process, sell their produce and perform their household chores.

Livestock farming (extensive) mainly comprises cattle, sheep, goats, pigs and poultry. Women also play an important role in this activity. In fact, in view of their role in income generation through agricultural and horticultural production, they often invest money in the rearing of small ruminants. Traditional fishing is a minor activity because rivers contain little fish.

Conversely, intense fish farming is carried out along the project road. The fish produced in many fish ponds is sold in some markets and also used to improve the people's protein intake.

4.3.6 School and Health Infrastructure

Many schools, including 67 primary and 36 secondary schools, were listed with a higher enrolment of girls than boys.

Regarding health, the direct project impact area has a vast healthcare network. Besides 9 community health units, 22 health centres, 5 dispensaries and 5 hospitals were listed. However, this network masks some disparity in terms of location. Three (3) of the 5 hospitals are located in Tshikapa town and have a total accommodation capacity of 400 beds. These health facilities are characterized by a low accommodation capacity, chronic shortage of drugs, water, equipment and qualified staff. It should be emphasized that in hospitals, the doctor is also the general practitioner, surgeon, gynaecologist and anaesthetist.

4.3.7 Markets

Excluding Tshikapa town, only 2 out of the 6 permanent markets are found along the road. However, there are 6 weekly markets along the project road (which are dominated by women). Unfortunately, these markets lack infrastructure. All the produce sold is displayed on the floor or on makeshift stalls.

4.3.8 Civil Organization

NGOs, cooperatives, churches, charitable and development organizations are the key players in the project impact area.

In the past, low and irregular wages discouraged, demobilized and demotivated all actors on the ground. In recent years, however, a fresh impetus has emerged, driven by non-governmental organizations (NGOs) and development associations (cooperatives), whose efforts in supporting farmers are not negligible.

The Provincial Rural Development Inspectorate has identified some agricultural sector NGOs grouped under three platforms: (i) members of the Provincial Council of Development NGOs, abbreviated as CRONG; (ii) members of the Federation of Secular Economic NGOs (FOLECO); and (iii) those supervised by the Assembly of Independent NGOs (RODI).

The table below indicates the groups of NGOs:

No.	Platform	Number of Member NGOs	Women's NGOs	Women-oriented NGOs	Male-oriented NGOs
1	CRONG	45	06	09	30
2	DFOLECO	80	07	20	53
3	RODI	32	04	13	15
	TOTAL	157	17	42	98

Source: Western Kasaï Socio-economic Conference held in Kananga in June 2003.

The sole objective of all these associations is to improve living conditions in rural areas. Foreign NGOs, such as BICE, COORDAID, ALISEI, etc., are also operating in Western Kasaï Province. The UNDP and FAO have provided support to a savings and credit cooperative (CEDEKOC) in Western Kasaï Province which is based in the town of Kananga, but has branches in rural areas. This cooperative grants loans for small businesses run by women in the

fields of agriculture and livestock breeding, as well as to those engaged in other income-generating activities.
Concerning health, it is necessary to mention the pioneer role played by Action against Hunger in the project area.

In terms of representation, it should be noted that in each village, the traditional chief represents the village among bodies and project partners. The traditional chief has been and remains the base for exchanges with the population and consultations.

4.4 Summary

The area has two main environmental and social components that are likely to be adversely affected by the reconstruction of NR1 and its feeder roads. They are:

(i) the component relating to the physical environment with five factors, namely: soil, surface water, groundwater, acoustic environment and air quality;

(ii) the component relating to humans and the economic and social environment with six factors (or group of factors): (1) transportation/communication; (2) education/teaching; (3) agriculture, stock breeding; (4) employment/income/poverty; (5) crafts/commercial activities; (6) safety, health, gender and vulnerable groups.

Environmental Components	**Baseline**	**Sensitivity**
Surface water	Existence of many permanent water bodies along the road	**Average to high**
Groundwater	Presence of aquifers in quaternary sands at depths varying between 12 and 25 m	**Average to high**
Soils	Soils subjected to high pressure and water erosion (often unstable)	**High**
Land use along the highway and in the vicinity	Presence of major agricultural activities (wet season crops), but also commercial activities along the road section	**High**
Population	The area along the highway is densely populated	**Average**
Infrastructure	Virtually no transport, educational, health, etc. infrastructure, *except in Tshikapa*	**Average to high**

The environmental profile of the Batshamba – Tshikapa Road Lot 2: Loange Bridge – Tshikapa, highlighted during the ESIA is presented below. It includes the section from Loange Bridge to Lovoua Bridge to be financed by the Bank.

Environmental Component	Characteristics	Indicators	Current Status
Biophysical environment of the DPIA	Soil	Relief	Flat and rough in places
		Nature	Sandy
		Erosion	Longitudinal gullies in many places and on the right-of-way
	Hydrography	Groundwater	Shallow water tables
		Surface water	Many rivers and streams (**7**)
	Vegetation	Types	Savannahs and/or gallery forests
		Wood density	Fairly high
		Species met	Very diverse
		Grass cover	Dense
	Wildlife	Species met	Wild birds
			Reptiles
		Number	Few
	Air quality	Dust	Plenty, after the passage of vehicles, particularly in the dry season
		Noise	Low
	Landscape	Field of vision	High
		Characteristic	Tree park
Socio-economic environment of the extended project area	Population		**1 920 153**
	Human settlements	Town	Only 1 (Tshikapa)
		Villages crossed	47
		Hamlets crossed	8
	Educational infrastructure	Primary schools	67
		Secondary schools	36
		Institutes	4 (located in Tshikapa)
	Health facilities	Community health unit	9
		Health centre	22
		Dispensary	5
		Hospital	3 (located in Tshikapa)
	Farming	Rain-fed	Largely dominant
		Irrigated	Very low
	Livestock breeding	Species being bred	Cattle, sheep, goats, pigs, poultry
		System	Extensive
	Fishery	Type	Fish farming
			Traditional fishing in the river
	Arboriculture	Species	Banana, pear, mango and orange trees
	Forestry	Type	Oil palm
			Timber
	Trade	Permanent markets	7
		Weekly markets	6
		Diamond Purchasing Cooperative	250, all based in Tshikapa
	Industry	Mining	Only 1 in Tshikapa
	Handicrafts	Type	Wood carving

5. Project Alternatives

5.1 No-Project Situation

The “no-project” situation amounts to leaving the road (NR1) in its present state with the inconveniences caused users and people living along the road. The effects on the environment include steep gullies caused by erosion, air pollution caused by exhaust fumes from trucks and dust during the dry season, which can affect the health of the population and limit access to the area.

The “no-project” situation is neither consistent with the policy of the Government of the Democratic Republic of Congo, nor with the country’s economic and social development policy. Furthermore, the status quo is not in keeping with the spirit and principles of upgrading DRC’s transportation system and road infrastructure.

5.2. Project Alternatives

To achieve optimum development which takes into account various constraints related to the physical environment and the investment cost, four alternatives or options were analysed. They are, for all of Lot 2, the following:

- **Base Option:** from Pk 114 + 400 to the exit of Loange village, the road will be extended towards Tshikapa, crossing several villages and rivers;

- **Option 1**: from Pk 148 + 700 to 151 + 400, the road will be diverted by 350 m to the north of Kikuba village (Kikuba I and II);

- **Option 2:** between Pk 164 + 000 to 192 + 300, the road will be realigned, thus skirting: (i) the villages of Kombo Koja, Katshitu (I, II, III) and Mukala to Lovua Bridge; and (ii) between PK 192 + 000 and 200 + 150, skirting the villages of Kabala and Katanga (six groups) over a distance of 8.2 km;

- **Option 3:** bypassing Tshikapa town through the North or South;

- **Option 4:** across downtown Tshikapa through to a second bridge over the Kasaï River.

5.3. Solution Adopted

The options were evaluated based on environmental, economic, technical and social criteria. Three criteria were retained. A weighting factor was applied to each criterion as follows: (i) 20% was applied to environmental aspects; (ii) 30% was applied to the technical and economic aspects of the various facilities, varying according to the complexity/technical constraints posed by the physical characteristics of the environment; and (iii) the extent of relocation which was assigned 50% due to the physical relocation of households after the demolition of homes, loss of property and loss of income or means of livelihood.

The evaluation of potential scenarios based on the three criteria retained shows that the alternative comprising options 1, 2 and 4 obtained the highest score (weighted average = 3). This alternative will have the least negative impact on the environment (noise and air pollution) through better traffic flow, significantly reducing accidents. Option 4 will necessitate large-scale relocation of the population. To minimize the impact of resettlement, the road layout selection is based on the strict minimum necessary with regard to land use. The road will run along the left bank of the Tshikapa River towards the quarry, cross the Kasaï River through a bridge to join Roundabout 3Z and also skirt the gully situated at Kele to NR1 towards Kananga. This option will have the least negative impact and seems to address the wishes of the population and local administrative authorities.

The Bank will finance the 63 km road segment between Loange Bridge and Lovua Bridge.

6. Potential Impacts, Mitigative and Compensatory Measures

6.1 Negative Impacts

6.1.1 No-Project Situation

Currently, there is very little traffic on NR1 due to the very poor quality of the pavement. The population of the project direct impact area who are obliged to use the road, remain in isolation, which limits their development efforts. The degraded nature of the earth road causes pollution by rising dust in the dry season, which is greatly deplored by the population. The road has a major impact on the health of the population (respiratory diseases) and poses a threat to food hygiene and housing. It is also necessary to mention noise nuisance caused by the movement of heavy vehicles which was also strongly criticized by the population during discussions. Therefore, the road in its current state has a strong negative impact on the environment and well-being of the population.

The poor quality of the pavement also significantly impedes its use by motor vehicles. The low supply of transport services on the road contributes to the rise in the cost of transportation between the localities served by the road, thus impeding the development of economic activities (limitation of the sale of products). It also renders the evacuation of patients in general and pregnant women in particular difficult. It makes travelling uncomfortable and the complete absence of road signs impacts negatively on the safety of people living along the road.

The passage of trucks through many deviations in villages increases dust in the air. The deviations also cause soil compaction, aggravating runoff and limiting the regeneration of vegetation.

The poor state of the road has negative impacts on vehicles, increasing vehicle maintenance costs. This situation makes the road section unattractive, resulting in low transport service supply and hence high transportation costs. Consequently, the present state of the road adversely affects the well-being of the local population and the development of their economic activities. The tarring of the road is therefore highly recommended by the population.

On the whole, the impact of the no-project situation can be summarized as follows: (i) isolation of villages; (ii) significant emission of dust owing to the nature of the soil, particularly in the dry season; (iii) many deviations which cause soil compaction and runoff, limiting the regeneration of vegetation; (iv) risk of accidents due to the poor state of the road; (v) travel discomfort; (vi) very long travel time; and (vii) high transportation and vehicle maintenance costs.

6.1.2 Construction Phase

(a) **Biological environment:** the project will not result in any major destruction of vegetation as the road layout already exists and its right-of-way has been cleared. Project impacts on plant resources during the site preparation and construction phase will be low. It should be noted that during construction, some semi- or fully-protected tree species situated too close to the road may be felled. In this case, the Contractor must contact the decentralized services of the Ministry of Environment, Nature Conservation and Tourism to obtain the necessary logging permits. It will be forbidden to use wood as an energy source in construction camps.

(b) **Human environment:** the site preparation phase is important for the installation of construction camps and mobilization of construction machines. The initial physical damage caused to the natural and human environments occurs during the site preparation and construction phases.

(i) Disruption of activities: during the site preparation and construction phases, part of the activities carried out in the project road's right-of-way and immediate vicinity will be disrupted, reduced, or stopped, resulting in losses in terms of direct employment and income.

(ii) Lost activities for women: the most common activities identified are the sale of bread, salt fish, cassava, maize, fruits and vegetables, local drinks, water, etc.;

(iii) Disruption of traffic and accessibility: construction work will disrupt vehicular and pedestrian traffic, thus increasing the risk of accidents due to the movement of machines and vehicles on the construction site as well as on deviations which will be congested or flooded during the rainy season.

(iv) Relocation of fences: the works will require the destruction of some fences and uprooting of trees on the sides of the existing NR1.

(v) Noise: the impact during construction will be relatively high. Noise pollution caused by earthmoving, transportation, stripping and paving machines will temporarily cause discomfort to the local population, particularly households.

(vi) Deterioration in living and health conditions: the disposal of refuse near homes will be disrupted. The accumulation of refuse from works such as excavated and backfill materials, embankments, rubble and waste will also cause discomfort to the population. The works will raise a relatively large amount of fine dust in the construction site and its environs, which may cause respiratory diseases among the local population.

(vii) Space occupation and soil compaction as a result of the repeated passage of heavy machines and the installation and operation of construction camps, and land exposure after bush and vegetation clearing at the construction site. This will pose the risk of soil pollution due to oil seepage, storage of road construction materials and eventual abandonment of organic or inorganic waste. However, it is worth noting that construction camps are temporary facilities and the affected areas could be rehabilitated at the end of construction.

(viii) Soil erosion: the use of existing borrow pits may increase soil erosion. Borrow pits that have not been rehabilitated are likely to contribute to the stagnation of unsafe water and spread of disease vectors such as mosquitoes. The quarries identified are: (a) Bondo (Pk 133) sandstone pit; and (b) Lovua (Pk 178) which is an alluvial deposit from which about 40 000 m3 of alluvium will be extracted. The risk of erosion is also associated with the disruption of water drainage during excavation work. Consequently, it is recommended that construction work should be carried out during the dry season. However, after project completion, the works, drains and ditches built will help to improve rainwater drainage and reduce gullies along the road. This is a positive impact of the road construction project.

(ix) Pollution: coating plants are also a potential source of air pollution by dust and combustion emissions. Construction camps may cause pollution by wastewater or poor waste management.

6.1.3 Operation Phase

(a) Biological environment: given that the works earmarked only concern the existing road which has already been integrated into its natural environment, the project will not affect natural habitats, wildlife and vegetation. It will have no negative impact on natural parks, biosphere reserves and sensitive or protected areas. The quality of the abiotic environment (air, water, soil) will not be further damaged during the operation of the rehabilitated and upgraded road. The project will not affect any archaeological, cultural or religious site. The planting of trees along the road in big villages (Lukaka, Bondo, Kikuba, Mavagimi, Katolo and Kayala) is recommended as it will have a positive impact on plant resources. Preferably, local tree species should be planted as they would more easily fit into the landscape. Other benefits of planting trees are: (i) reducing heat; (ii) protection against dust; (iii) setting limits; and (iv) mitigation of air pollution through CO_2 absorption.

Similarly, the elimination of deviations in villages will enhance the regeneration of vegetation in some areas. During discussions with the local population, they pointed out that sand dust sticks to the leaves of young plants, slowing down the reforestation success rate and discouraging investment in this domain. Thus, by reducing dust emissions, the tarring of the road will have a positive impact on the survival rate of seedlings and hence plant resources.

(b) Human environment: the negative impact of the project during the operation phase will be negligible. However, it will cause some nuisance to the local population through pollution generated by growing traffic, and risk of exposure of pedestrians to accidents due to high speeds on the rehabilitated and tarred road.

(i) Noise pollution: during the operation phase, the road's reference speed will be 80 km/h. Traffic will steadily increase. Noise pollution will be exacerbated by the combined action of more vehicles using the road and the proximity of the local population.

(ii) Population and social life: the period of adaptation to the operation of the new road will affect certain habits associated with pedestrian traffic. The local population will be exposed to the increased risk of road accidents due to the free flow of traffic, increased traffic and speed, hence the need for a sensitization campaign.

(iii) Economic activities and habitat: during the operation of the rehabilitated road, access to certain businesses will be limited, especially those whose customers or suppliers parked their vehicles in the project's right-of-way. Parking areas as well as a profile allowing for temporary parking throughout Tshikapa town will be provided to mitigate this constraint.

IMPACTS			Putting up Construction Camp	Road Construction	Operation of Quarries and Transportation of Materials	Opening of Deviations	Sanitation	Road Operation
BIOPHYSICAL ENVIRONMENT	Soil		-Minor	**-Average**	**- Average**	**- Average**		**+/- Average**
	Water		- Minor	**- Average**	**- Average**			**- Major**
	Air	Noise	- Minor	**- Average**	**- Average**	- Minor	- Minor	**+ Average**
		Dust	- Minor	**- Average**	**- Average**	- Minor	- Minor	**+ Average**
	Wildlife		PE	PE		PE	PE	PE
	Vegetation		- Minor	- Minor		- Minor	- Minor	**+ Average**
	Landscape		- Minor	- Minor		- Minor	- Minor	**+/- Average**
HUMAN ENVIRONMENT	Income and employment		+ Minor	+ Minor	+ Minor		**+Major**	**+Major**
	Farming		- Minor	- Minor	+ Minor	PE	PE	**+ Average**
	Population growth		+ Minor	+ Minor	+ Minor	+ Minor	+ Minor	+ Minor
	Traffic and mobility		- Minor	- Minor	- Minor	- Minor	- Minor	**+Major**
	Health		- Minor	- Minor	- Minor	- Minor	- Minor	**+ Average**
	Safety		- Minor	- Minor	- Minor	- Minor	- Minor	**- Average**
	Cultural heritage		- Minor	- Minor	- Minor	- Minor	- Minor	**+/- Average**
	Space and resource development		- Minor	- Minor	- Minor	- Minor	- Minor	**+ Average**
	STD-AIDS		**- Average**	**- Average**	**- Average**	**- Average**	**- Average**	**- Major**

6.2 Mitigative and Compensatory Measures

6.2.1 Compensatory Measures Related to the Clearance of Rights-of-Way

(i) Relocation of activities and compensation for people affected by the project (PAP): a total of CDF 49.5 million has been earmarked for compensation for loss of farm income.

(ii) It will be necessary to relocate infrastructure and fences. They are included in the project and a separate item has been provided in the priced bill of quantities for this purpose.

6.2.2 Mitigative Measures During the Construction Phase

The main mitigative measures, concerning especially the organization of work and equipping of construction camps stated in the specifications for the contractors, to mitigate the general nuisance caused by construction work are:

(i) Construction site installation: construction sites will be set up in open and accessible areas that are not used for farming or religious purposes. Contractors will ensure that their construction camps are set up away from wells and rivers to avoid the risk of contamination of these resources; it will be prohibited to

deposit materials that can release pollutants within a defined security perimeter. Entrances will be guarded to limit interaction between construction sites and the external environment. Work schedules will be adjusted to limit the disturbance of the local population. The speed of machines in construction and work sites will be limited.

(ii) Traffic and deviation plans: a traffic plan for machines will be prepared to ease movement and access by the local population. This plan will vary according to the projected phasing of works. The plan will be reinforced by erecting road and information signs. Work areas will be clearly marked out.

(iii) Installation of fuel and lubricant storage areas: hydrocarbon product storage units will be tanks or surface barrels placed in appropriate containment areas to prevent spillage or tank rupture and minimize fire risk. Equipment for cleaning any spillage will be provided. The equipment will be kept in perfect condition.

(iv) Containment of flammable and hazardous substances: areas for storage of flammable products (bitumen, lubricants and other petrochemical derivatives) must have adequate emergency equipment kept in good working condition. The oxygen, propane and acetylene to be used in welding will be stored in an area provided for that purpose and which should be closed and protected from any possible vehicle accident. Used oils will be collected in drums for recycling and channelled out of the site under conditions determined by the GEEC in conjunction with the MDC.

(v) Soil contaminated with fuels and lubricants: a special area will be reserved for the treatment of soil contaminated with petroleum products. It will be excavated and put in leak-proof containment trays and decontaminated using solvents. The treated soil will be disposed of in authorized dump sites.

(vi) Felling of trees and cutting of hedges: the felling of trees will be subject to prior authorization by the decentralized services of the GEEC. Felled trees must be used. In compensation, tree seedlings will be planted in the road's right-of-way (after project completion). There are plans to plant roadside and shade trees in the villages crossed by the project road as compensation.

(vii) Earthwork: burrow pits (quarries) or excess disposal sites will be selected in a way to prevent negative impacts on the landscape or minimize risk, and cleaned up after the completion of works.

(viii) Dust emission: to reduce dust emission caused by the movement of machines and transportation of materials, site managers will ensure the watering of roads near residential areas. It may also be necessary to dampen temporary backfill or excavated material disposal sites.

(ix) Liquid waste, risk of water pollution and solid waste: effluents will be collected and disposed of according to their composition in leak-proof septic tanks or mobile collection systems. Machine wash and maintenance water should be treated to separate oil and water. The water will be discharged into septic tanks and the waste oil and bitumen collected, recycled or destroyed. Any greasy and

oil product disposal sites will be meticulously designed to prevent seepage into the ground and rivers. Site solid wastes will be transported to authorized dump sites where wood and metals in particular could be selected and recycled, and organic matter transformed into compost.

(x) Risk of erosion and evaluation of soil stability: contractors will monitor changes in soil stability. This will consist in identifying erosion-prone project/work areas during and after construction. Drains will be installed and physical slope stabilization techniques (booms, gabions, retaining walls, etc.) applied.

6.3 Positive Impacts

All road positive impacts on the physical environment will relate to facilities financed under the project and the establishment of a maintenance system to ensure the sustainability of the road infrastructure. All positive impacts of the road on the biological environment will relate to improved accessibility, enabling administrative services, associations and NGOs to extend their activities throughout the project area. The upgrading of the road will help to ensure more structured (two-lane carriageway) and free flow of vehicular traffic, reduce transportation costs and improve road safety. The expected benefits are:

(i) Reduced travel time: the usability of the existing road between Batshamba and Tshikapa is very poor, resulting in very long travel time (26 to 32 hours). Its rehabilitation will increase average travel speeds to 80 km/h for light-duty vehicles and 40 km/h for heavy vehicles.

(ii) Expected reduction in accident rates: through the orderly flow of traffic, horizontal and vertical road markings and warning signs.

(iii) Easy access to health and educational facilities and government services: access to administrative, economic, educational and health centres in Tshikapa will be facilitated and improved in terms of travel time, safety and comfort, as well as intra- and inter-provincial trade, particularly between Kinshasa and Kananga.

(iv) Job creation: during the construction, operation and subsequent maintenance phases, the number of jobs and required qualifications will be determined by contractors and their sub-contractors according to their needs. Given that the implementation of this type of project requires on average 35 to 40 workers per kilometre, about 2 400 jobs may be created, that is about 1 000 jobs throughout the construction phase. Nearly 100 permanent jobs will be created during the operation phase. The local population will be the potential workforce, particularly for guarding, alternating traffic agents and manual execution of earthwork, or weeding. Many senior- and middle-level executives will be recruited, including field superintendents (engineers), team managers (senior technicians) and surveyors (senior technicians).

(v) Easing access and movement: the project will be beneficial to the local population of Loange, Lukaka, Bondo, Kikuba, Katolo, Kayal, Koji-komboainsi, as well as Lovua, Katanga and Tshikapa town, particularly vulnerable persons (women, children and elderly persons) by facilitating their daily commute to the urban centre, health centres and social and educational establishments, as well as

for workers and other business operators and traders who ply the project road on a daily basis. There are also plans to construct about 100 km of rural roads.

(vi) Development of socio-economic activities: the population of the project area will increase during the construction phase due to the presence of construction workers and people arriving to carry out commercial activities. During the construction phase, the authority of traditional rulers will be strengthened through their participation in commitments made by the different stakeholders (promoter, constructor and population), which will ensure social cohesion. In addition, the temporary influx of workers will lead to an increase in the consumption of commodities such as fuel and food, raising income derived from businesses mainly operated by women.

(vii) Better environmental integration: the improvement of hydraulic structures (box drains and culverts) and rainwater drainage systems (gutters) will contribute to erosion control, protection of water resources, and protection of the local population situated along the project road from floods. Erosion control (lamination of basins, planting of trees on slopes, stabilization of erosion-prone areas, booms, retaining walls, etc.) will reduce landslides and land loss, and contribute to the sustainability of the road itself. Roadside environments will be improved (plantations and roadside trees) to enhance its beauty and reduce sound and light nuisance. Permanent road maintenance by the Roads Board will help to significantly reduce the risk of degradation.

7. Climate Change and Environmental Risk Management

7.1 Temporary Risks to the Local Population

Construction work will cause temporary nuisance (disturbance, noise, vibration, air pollution) to the local population due to the movement of machines and transportation of materials. The deterioration of air quality should not affect public health. Construction work will temporarily slowdown, disrupt, interrupt/deviate traffic, but increase the risk of accidents.

7.2. Project-related Risks

There will be a risk of runoff of pollutants into ditches (or streams) and/or groundwater due to waste oil and fuel spills, or runoff of stored materials.

In some areas, there could be additional pressure on water reserves intended for the population and women farmers due to removal.

In areas with steep slopes, it is necessary to avoid the risk of erosion in the realignments of rights-of-way (rockslides, landslides and platform bed). In forested areas, there is need to guard against fire risks and provide for their management. Fuel storage areas will pose some risks of soil and water pollution due to oil, fuel or lubricant seepage, as well as fire risk.

7.3 Climate Change

The project will not result in any major modification of aspects of climate change. The road will enhance the free flow of traffic at a nominal speed of 80 km/h with speed limits of 50 km/h at critical points in urban areas. CO_2 emissions will be reduced. The standard speed of 80 km/h will help to ensure that vehicles operate efficiently at optimum energy consumption levels with

minimum emissions compared to the no-project situation characterized by a concentration of exhaust fumes at points of congestion - a situation exacerbated by numerous stops/starts. This will lead to a reduction in greenhouse gas emissions. The planting of trees along the project road will contribute significantly to CO_2 absorption.

The project will include technical provisions for adaptation to climate change through the establishment of pools for slopes of more than 2%, the design of structures on the basis of 50-year flood discharges (for Pks 116, 118, 120, 122, 137, and 144), and in compensation for the felling of some trees, the planting of street and shade trees (for villages crossed). Thus, the project will contribute to the mitigation of climate change (carbon sequestration and decrease in greenhouse gas emissions in the atmosphere).

8. Environmental and Social Monitoring Programme

According to DRC's institutional arrangements, the monitoring of project outputs will be organized and supervised by MITPR, which will centralize the observations made by other ministries and stakeholders involved in the project (MECNT, GEEC etc.). MITPR will, through the Environment Unit of the Roads Board, assisted by the Control Mission (MDC), regularly monitor project outputs up to the reception of works.

The Contracting Authority (OdR) and the Contracting Authority Delegate (MDC) will be responsible for implementing the project's environmental and social component. On their initiative, the works contract will specify the penalties to be meted out to contractors for non-compliance with specific technical environmental and social requirements. The objective of environmental monitoring will be to regularly assess the level of implementation or application of the mitigative measures recommended by the ESIA to help the promoter to clarify, adjust, redirect or subsequently adapt some measures, in view of the environmental characteristics of the area.

Thus, the Environmental and Social Management Plan (ESMP) will consist in planning proposed protection measures, identifying various partners and defining their responsibilities in implementing such measures. The Plan will be implemented during the project preparation and implementation phases, and take into account supervision and environmental monitoring.
The works supervision and environmental monitoring programme will be an integral part of the contractor's environmental and social impact assessment reports. The contractor will refer to environmental assessments to mitigate or offset risks posed to the biophysical and human environments. The Bank's annual supervision missions will assess the quality of project environmental and social monitoring.

The general work site measures will be specified in the contractor's specifications. Measures relating to soil and water conservation, and human sensitivity (deviations, noise reduction, work schedules, irrigation, etc.) will be included in the project cost.

The sum of EUR 620 000 will be required to implement measures to sensitize the population on: (i) rules to be observed so as to stay at a safe distance from the area of operation of construction machines and equipment during mechanized work; and (ii) issues concerning road safety and compliance with the highway code.

Mitigative Measures	Body in charge of Implementation	Implementation Schedule	Cost in EUR
Environmental Action Plan	Contractor	Before works start-up	3 500
Preparation of a Specific Safety and Health Protection Plan (SSHPP)	Contractor	Before works start-up	3 500
Erosion control measures	Contractor	During works	200 000
Vegetation regeneration	Contractor	During works	400 000
Sensitization on STIs/AIDS	Contractor /OVD/OR/ GEEC	Before works start-up and after works completion	4 000
Street tree planting and landscape management	Contractor /Land Tenure Services/ GEEC	End of works	1 000
Sensitization campaign/Work site sign-posting/Highway Code	Contractor	During works	8 000
Work scheduling/Traffic and Deviation Plan			
TOTAL			**620 000**

The cost of supervision and monitoring, which is **EUR 35** 000, will be included in the budget of the Control Mission. The cost of the monitoring plan (which will include committee members), that is **EUR 40 000**, will be included in the budget of the Control Mission.

Plan	Cost Estimate in EUR	Budget
Impact Mitigation Plan	620 000	Budget of the Contractor
Work Supervision Plan	35 000	Budget of the Control Mission
Monitoring Plan	40 000	Budget of the Control Mission
GRAND TOTAL	**695 000**	

The total cost of the Environmental and Social Management Plan is **EUR 695 000**, or **1.17%** of the amount, net of taxes, for works (**EUR 59.65** million).

9. Public Consultations and Information Dissemination

In keeping with DRC's regulations and the provisions governing projects classified under Category 1, the ESIA was prepared based on the principle of public consultation backed by field trips and the use of basic documents, on the one hand, and on discussions with central and decentralized technical services, regional heritage services, economic operators, socio-professional groups, the local population, and administrative and traditional authorities, on the other. This approach helped to: (i) enrich and develop the project and fine-tune alternatives by taking into account the concerns of all stakeholders; (ii) promote the participation of the local population in the project; and (iii) create an environment of trust and cooperation through an objective approach.

The Contracting Authority's representatives (Infrastructure Unit) and those of the Project Supervisor (Roads Board) met with target groups in the presence of the Mayor, the Heads of the councils concerned, traditional rulers, as well as the decentralized services of OdR, OVD, survey and environment. During these meetings, the content and economic, social, cultural and environmental stakes of the project were presented to and discussed with those consulted.

These consultations highlighted the readiness of the people met, administrative authorities and representatives of the population to support the project. They particularly pleaded that: (i) the

project should avoid or limit as much as possible the destruction of dwellings and involuntary displacement of people and the payment of compensation for dwellings and business premises damaged as well as compensation to people directly affected by the operation owing to loss of fruit trees (agricultural assets); (ii) the project should recruit and train local labour for the performance of unskilled tasks during the construction phase; and (iii) the project should find solutions to problems related to road safety and roadside activities.

During the head count of project-affected persons (PAPs), discussions enabled their involvement to go beyond the mere gathering of information and for them to express, among other things, their fears and expectations regarding their relocation: (i) the affected persons must be compensated at replacement value without depreciation, before project start-up; and (ii) the compensation process must be fair and respect the human rights of those affected.

It would be preferable to pay compensation in cash with regard to individual losses, notably business revenue. However, those relating to structural or service equipment, the compensation options will be the subject of more detailed estimates to pay those affected in the form chosen (cash/kind). Compensation in kind will include the reconstruction or renovation of the affected structures (buildings, fences, etc.). Other measures will be included in the programme to ensure fairness and impartiality in the compensation of people who will be affected by the project.

Public participation in the public survey itself will enable the expression of grievances and promote transparency and fairness in the compensation process. Various media will be used to fully inform the people affected by the project, including the availability of the RAP, the use of posters and radio broadcasts in local languages.

10. Additional Initiatives

10.1 Stakeholders

The Contracting Authority (MITPR), the Contracting Authority Delegate (CI) and the Project Supervisor (OdR) will be directly responsible for project implementation. According to DRC's Environmental Code, the Ministry of Environment, Nature Conservation and Tourism (MECNT) will, through the Congo Environmental Assessment Group (GEEC), be directly involved in project environmental control.

Its action will particularly fall under its institutional prerogatives, namely the control of nuisance and risk of pollution (management of the potential risk of pollution, liquid waste, solid waste, including bitumen, etc.), the risk of erosion and water conservation works (WCW).

GEEC will be concerned with forestry aspects (tree felling and tree seedling planting) in conjunction with forestry services for the granting of authorizations. Other government and administrative institutions concerned with environmental issues will mainly be survey, town planning and mining services, the Highways and Drainage Authority (OVD), and rural road services. NGOs and associations (civil society) will be involved in implementing measures to raise awareness on aspects such as road safety and HIV/AIDS. They will also participate in compensation operations.

10.2 Resettlement Plan

The Resettlement Plan is presented in Section 6.2.1: Compensatory Measures Related to the Clearance of Rights-of-Way. The Government has prepared a Resettlement Action Plan for the

whole of Lot 2, which is situated between Batshamba and Tshikapa, to facilitate the compensation operations for persons and property affected by the project, considering that almost all the property consists of houses and stands constructed with rudimentary materials.
Its objectives are to: (i) minimize involuntary resettlement as much as possible; (ii) prevent the destruction of property as much as possible; and (iii) pay compensation to the affected persons for the loss of agro-pastoral land, dwellings and equipment, as well as income.

The expropriation of land along the road section concerned by the first phase will not entail the resettlement of people, save for the acquisition of some 30 ha of land with no specific ecological value located on the outskirts of some villages, thus avoiding passing through them and relocating nearly 150 families. During the conduct of the study, the land was used for slash-and-burn cultivation. The areas to be expropriated are located on the outskirts of villages.
The cropping system in Congo is based solely on slash-and-burn farming as there is no pressure on land. There is no fixed plot in time and space, except for cassava crops. The project will not affect any cassava crop. Only a few maize plots were affected during the establishment of the environmental profile.

Road Section	**Pk**	**Human Settlement**	**Number of Plots**	**Type of Crop**
Lot 2, Phase 1: Loange Bridge – Lovua Bridge	114+800 to 177+500		5 2	Maize Maize
Lot 2, Phase 2: Lovua Bridge – Tshikapa	181+800 to 209+200	Itshuta Katanga	5 8	Maize Maize

Only a few farmers will be affected by the project. Considering that they practice shifting cultivation or slash-and-burn farming, which is an extensive form of farming, and that they maintain their homes, they will remain in their respective dwelling areas and keep their current lifestyle, economic and social activities. Thus, there will be no issue of integration into the host community as the affected people will remain in the same area.

This plan has four objectives: (i) to minimize involuntary resettlement as much as possible by considering viable alternatives during project design; (ii) to ensure that affected persons participate in all the key stages of compensation preparation and implementation; (iii) to assist affected persons in efforts to improve their livelihood and living standards, or to restore their initial living standards before project implementation, depending on what is most beneficial to them; (iv) to ensure that compensation activities are designed and carried out as a sustainable development programme, providing sufficient investment resources to give an opportunity for people affected by the project to share the benefits.

A Summary Resettlement Action Plan, which is in line with Congolese laws and Bank involuntary resettlement policy requirements, has been prepared. It defines the principles, terms and conditions for payment of compensation to project-affected persons, and makes budget estimates and an indicative payment schedule. They are derived from the Resettlement Action Plan prepared by the Congolese Government for the entire Lot 2: Loange Bridge –Tshikapa.
The Plan provides for the establishment of an Implementation Committee comprising representatives of MITPR through the Infrastructure Unit (CI), the representative of the Road Board (OdR), and the representatives of the Control Mission (MDC) and the Contractor. It will be placed under the supervision of the Infrastructure Unit (Contracting Authority Delegate) which will chair it, assisted by a legal officer who will act as Committee secretary.

This Committee will work in conjunction with local authorities (decentralized government services) and civil society (NGOs, associations, etc.). The CPAR will be supported by external

service providers, namely an environmentalist, a land tenure and real estate expert, traditional rulers, civil society (NGOs, associations, etc.) and law enforcement authorities.

This Compensation Plan will be implemented such that nobody will lose their means of livelihood under this project. Monitoring reports will confirm the effective payment of compensation, which will be the subject of an external audit at project-end. The necessary funds will be fully covered by ADF resources.

The budget of the Summary Resettlement Action Plan is estimated at CDF 91.71 million, or USD 100 000. It includes the fees of the environmentalists working for the Project Supervisor (OdR) and the MDC, operating costs, PAAR (Livelihoods and Public Survey Study) validation seminar costs, and monitoring/evaluation costs. The Plan is presented in Annex 2.

11. Conclusion

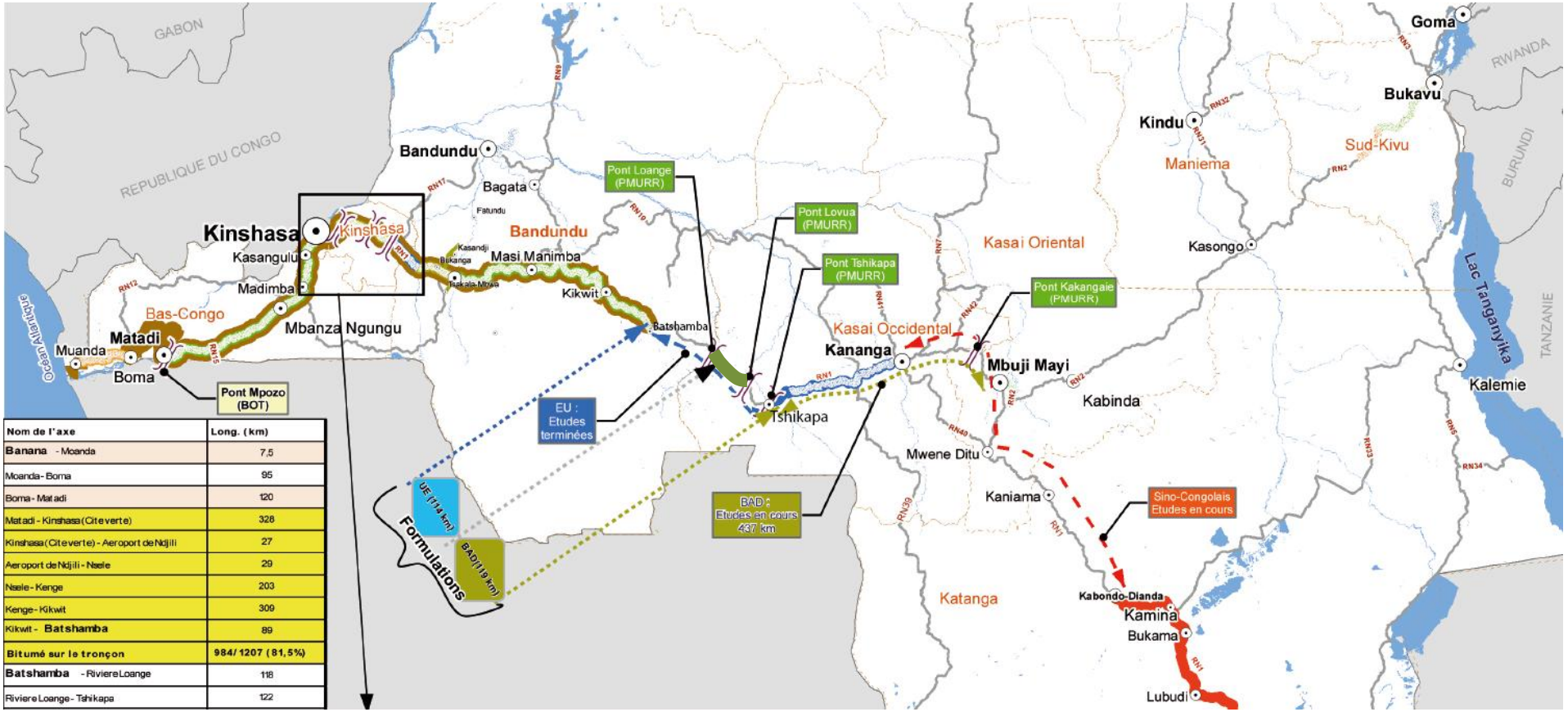
Considering the impacts and measures identified, the project is deemed environmentally and socially acceptable. Impacts are localized in the public domain of the State. The main themes ensuing from the analysis and environmental assessment have been examined, and appropriate measures to mitigate, compensate or reduce identified impacts have been taken. The earthworks will have a minor effect on vegetation cover. There will be many positive economic, social and security benefits in terms of direct and indirect jobs.

Compensation will be paid to farmers. Public consultations have helped to avoid the relocation of some 150 families and to prepare a detailed list of people affected by Lot 2 of the project between Lovua Bridge and Tshikapa, and containing exact information (names, addresses, income, value of affected structure, etc.) about them.

The project has an environmental compliance certificate issued by the Ministry of Environment, Nature Conservation and Tourism.

Project Maps

1. Project Location



Nom de l'axe	Long. (km)
Banana - Moanda	7,5
Moanda - Boma	95
Boma - Matadi	120
Matadi - Kinshasa (Citeverte)	328
Kinshasa (Citeverte) - Aeroport de Ndjili	27
Aeroport de Ndjili - Nsele	29
Nsele - Kenge	203
Kenge - Kikwit	309
Kikwit - **Batshamba**	89
Bitumé sur le tronçon	**984/ 1207 (81,5%)**
Batshamba - Riviere Loange	118
Riviere Loange - Tshikapa	122

2. Road Alignment

Project Name	**:**	**Development and Asphalting of the Batshamba – Tshikapa Road Lot 2: Loange Bridge – Tshikapa, Phase 1: Loange Bridge-Lovua Bridge**
Country	**:**	**Democratic Republic of Congo**
Project Number	**:**	**P-CD-DB0-002**
Department	**:**	**OITC** **Division** **:** **OITC.1**

INTRODUCTION

The project for the construction of the Loange Bridge – Tshikapa Bridge road section on NR1 is an integral part of DRC's priority programme. It will contribute to ensuring traffic flow between Matadi Port, the capital Kinshasa, and Lubumbashi in the long term. The strategy implemented by the Congolese Government combines the gradual de-watering and tarring of DRC's structural highways, the restoration of traffic on a major part of the earth-road network, the protection and maintenance of roads in good state. The project will contribute to: (i) improving the movement of people and goods on NR1; and (ii) reducing poverty in its impact area. It will contribute to concretizing the long-term prospect of the multimodal interconnection of the road network with the rail network on the Zambia - Lubumbashi - Kananga - Ilebo (Kasai River Port) border.

The Loange Bridge – Lovua Bridge Road Development Project is Phase 1 of the road works that would end in Tshikapa town on the NR1. From an environmental standpoint, the project is classified under Category 1 considering the nature of the work to be carried out, the size and scope of the project and its potential direct and indirect impacts. The implementation of this project will necessitate the expropriation, for public purpose, of land, crops and trees along the right-of-way. In accordance with the Bank's policy on involuntary resettlement and Congolese law, the Ministry of Infrastructure, Public Works and Reconstruction (MITPR) has designed a Resettlement Action Plan (RAP) for those affected by the project. Its objectives are to: (i) minimize involuntary resettlement as much as possible; (ii) prevent the destruction of property as much as possible; and (iii) pay compensation to persons affected for the loss of agro-pastoral land, dwellings and equipment, and loss of income.

The African Development Bank's involuntary resettlement policy applies to physical or economic displacements or to persons affected by the implementation a project. Considering that the project involves the economic displacement of less than 200 people, a Summary Resettlement Action Plan has been designed in line with Congolese laws and the Bank's involuntary resettlement policy requirements. It defines the principles, terms and conditions for the payment of compensation to persons affected by the project, and prepares budget estimates and an indicative schedule for its implementation. The Summary Resettlement Action Plan is culled from the Resettlement Action Plan prepared by the Congolese Government for the entire Lot 2: Loange Bridge –Tshikapa.

PROJECT DESCRIPTION

The project covers Phase I of Lot 2 and comprises five main components:

(1) (i) Development of the "Loange Bridge – Lovua Bridge" road section (66 km, including reservations for the passage of the optical fibre); (ii) ESMP implementation; (iii) control and supervision of work and sensitization of the population of the PIA and operators;

(2) (i) Construction of 80 km of rural roads; (ii) rehabilitation of related infrastructure (school fences, health centres, markets) in villages in the PIA; (iii) installation of weighing stations on NR1;

(3) Preparation of: (i) a Sector Policy Document, and (ii) a National Transport Plan (NTP);

(4) Support the CI to build its capacity for the technical monitoring of works and procurement; monitoring/evaluation and audit of project accounts; and project audit;

(5) Compensation for the expropriation of farmland in the project area.

To ensure optimum development, different options were considered. The options involving the modification of the present road alignment was adopted and will prevent the displacement of 150 families and will not affect sensitive natural environments. In total, the realignment is less than 12 km.

The main activities include monitoring the implementation of environmental measures, monitoring the implementation of the environmental and social management plan for road and related works to improve the environment and living conditions of people, sensitization of the population on STIs and other pandemics, traffic safety and the environment. Most of specific measures taken to mitigate or eliminate the negative impacts identified are adequate and are included in contractors' specifications.

PROJECT AREA

The Project Impact Area is characterized by a high demand for transportation. The direct impact area comprises all the human settlements whose inhabitants are using the road in its present state and will continue to use it to travel, even if it is not rehabilitated. It comprises many (25) villages and Tshikapa town. To these should be added four big villages (Loange, Mukedi, Kayala and Katanga) for whom the road is the nearest national highway to which they can be connected. The extended impact area includes geographic areas whose inhabitants could use the rehabilitated road. Thus, it is considered as all the territories of provinces situated along the project road.

The road section to be funded by the Bank runs from Loange Bridge to Lovua Bridge, representing a distance of 57 kilometres. The section is situated entirely in Western Kasaï Province, specifically in Kasaï District in Kamonia Territory and Bapende and Kamonia Sectors. The total population of Western Kasaï Province is **5 296 347**. Women account for 50.94% of the population.

Housing along the project road consists only of huts and a few mud houses. Besides agriculture, the main activity is petty trade (beaneries, shops, weekly markets) often carried out by women. The main activities in Kasaï are farming and the search for diamond. Tshikapa is the only town with administrative services. It has an estimated population of 1 750 000, including 892 000 women. Many schools, 67 of which are primary and 36 secondary schools, have been listed with a greater enrolment of girls compared to boys.

From the health viewpoint, the project direct impact area has a health network comprising 9 community health units which lack equipment and drugs. The extended impact area has 19

health centres, 5 dispensaries and 5 hospitals. However, this network masks some disparities in terms of location.

ACQUISITION OF LAND FOR THE PROJECT

For the entire Lot 2, a survey was carried out on a 25 metre-wide strip. The survey mainly identified dwellings, stores or structures near local services (fences, developed areas, wells on plots, etc.). Persons affected by the project (PAPs) are normally classified according to the right of occupation, the nature and severity of expropriation. Categories of PAPs have been defined for cases of complete or partial loss of built assets, agricultural assets and infrastructure: (a) **For complete loss**, each asset and/or infrastructure (fruit trees, wells, fences, etc.) is valued at the new replacement rate; (b) **For partial loss (infrastructure),** the lost part is valued at the cost of the new replacement to enable the PAP to replace it; (c) For partial loss, two cases are considered: for structures that be *can be rearranged* on the remaining plot, compensation is paid for the land lost (in m^2) and structures that can be rebuilt (below), or for structures that *may not be rearranged*, the case is treated as a complete loss, necessitating the replacement of the plot lost.

Where expropriation concerns a part that is as big as the rest of the structure or infrastructure and the rest of the building is no longer utilizable, the acquisition is considered as a complete loss.

Areas to be Expropriated

The road alignment will be developed on the existing NR1's right-of-way. Expropriation along the road section concerned by the first phase will not entail the relocation of people, save for the acquisition of some 30 ha of land with no specific ecological value located on the outskirts of some villages, thus avoiding passing through them and relocating nearly 150 families. During the conduct of the studies, some of the land was used for slash-and-burn cultivation. The areas to be expropriated, which are located on the outskirts of villages, are presented in the table below.

Villages and Road Realignments	**Length of By-pass or Deviation in m**	**Area in Hectares**
Mukishi	1200	3
Lukaka	2400	6
Bondo 1, 2 and 3	800	2
Kikuba	800	2
Mavuagime 1and 2	600	1.5
Katolo	1200	3
Kayala	3700	9.25
Road realignments	8000	2
Total	11950	29.88

Integration with Host Communities

On the section between Loange Bridge and Lovua Bridge, only a few farmers will be affected by the project. Considering that they practice shifting or slash-and-burn cultivation, which is an extensive form of farming, and that they maintain their homes, they will remain in their respective dwelling areas and keep their current lifestyle, economic and social activities. Thus, there will be no issue of integration into the host community as the affected people will remain in the same area.

REGULATIONS, STANDARDS AND POLICIES APPLICABLE TO LAND ACQUISITION

Congolese Land Tenure System and Expropriation Regulations

The terms and conditions for the expropriation of property for public purpose are governed by Law No. 77/1 of 22 February 1977 on expropriation for public purpose. For their part, the terms and conditions for land use are governed by Law No. 73-21 of 20 July 1973 to institute the general property regime, land tenure and property system and the security regime, as amended and supplemented by Law No. 80-8 of 18 July 1980 on the land law in the Democratic Republic of Congo. These are now considered as reference instruments on the subject.

Legal System under Law No. 80-8 of 18 July 1980

Land Law No. 80-8 supplementing Law No. 73-21 of 20 July 1973 lays down the land tenure and property system in the Democratic Republic of Congo.

The procedure comprises two phases:

(1) The first is the administrative phase which spells out the nature of expropriation, the scope of public purpose, holders of the power of eminent domain, and rights that may be expropriated. The administrative procedure comprises the following:

- The preparatory phase: the expropriation process begins with the declaration of public purpose of works and ordering of expropriation. Preparations such as plot survey and identification of PAPs are carried out at the discretion of the Executive.

- Decision of public purpose of works and expropriation: form and publicity: it is taken by ministerial order (or presidential decree, as appropriate), published in the Official Gazette and notified to those exposed to expropriation. The declaration of public purpose gives the full identity of the concerned parties and is based on a plan of the property to be expropriated and indicates the works to be carried out. It also fixes the deadline for eviction.

- Claims and observations made by the person whose property is expropriated: claims and observations are notified to the Minister of Land Tenure within one month from the date of receipt of the DPP (or the receipt date). This period may be extended by the authority that made the decision concerning the expropriation. At the expiry of the deadline, the Minister of Land Tenure submits compensation proposals to the concerned. These proposals are based on a report prepared and signed by two surveyors and real estate assessors from of the Surveys Department, including, where necessary, a specialist, depending on the nature of the property to be expropriated. In the event of the expropriation of collective or individual user rights of the local population over public land, the expropriating authority bases his proposals for compensation on a prescribed survey and failure to reach an amicable settlement, the claims are brought before the court.

(2) The second is the legal phase which includes, in the last resort, compensation and other rights enjoyed by the person whose property has been expropriated. According to Congolese law, expropriation falls under the competence of the Executive. The courts only have jurisdiction over incidents and claims arising from inconclusive transaction between the expropriator and the expropriated.

Where action is brought before the civil court, the procedure will be as follows:

- Within 15 days of the summons, the court hears the parties;

- Within eight days from that date, the court rules on due process, officially appoints experts and sets a date by which they should file their report. This period may not exceed sixty days. The experts may obtain all information relevant to the performance of their duties from the Office of the Registrar of Estates;

- Within eight days of the filing of the expert report, the parties are summoned to a hearing and heard;

- Within one month of that hearing, the court rules on the amount of compensation and expenses and, if the expropriated seizes it, on the period of eviction. The decision is enforceable.

System not Entailing Legal Proceedings

All compensation is carried out completely and exclusively within the framework of DRC's legal and regulatory framework. The Bank's guidelines will help to minimize the number of complaints and appeals. The applicable mechanism is a conciliatory approach that will help to preserve the rights of people affected by the project.

CONSULTATIONS

In keeping with DRC's regulations and the provisions governing projects classified under Category 1, the ESIA was prepared based on the principle of public consultation backed by field trips and the use of basic documents, on the one hand, and on discussions with central and decentralized technical services, regional heritage services, economic operators, socio-professional groups, the local population, and administrative and traditional authorities, on the other hand. This approach helped to: (i) enrich and develop the project and fine-tune alternatives by taking into account the concerns of all stakeholders; (ii) promote the participation of the local population in the project; and (iii) create an environment of trust and cooperation through an objective approach.

The Contracting Authority's representatives (Infrastructure Unit) and those of the Project Supervisor (Road Board) met with target groups in the presence of the Mayor, the Head of the councils concerned, traditional rulers, as well as the decentralized services of OdR, OVD, survey and environment. During the meetings, the content and economic, social, cultural and environmental stakes of the project were presented to and discussed with those consulted. These consultations highlighted the readiness of the people met, administrative authorities and representatives of the populations to support the project. They particularly pleaded that: (i) the project should avoid or limit as much as possible the destruction of dwellings and involuntary

displacement of people, and that compensation be paid for dwellings and business premises damaged as well as to people directly affected by the project owing to loss of fruit trees (agricultural assets); (ii) the project should recruit and train local labour for the performance of unskilled tasks during the construction phase; and (iii) the project should find solutions to problems related to road safety and roadside activities.

During the head count, project affected persons (PAPs) were consulted. Discussions enabled them to participate more actively beyond the mere gathering of information and for them to express, among other things, their fears and expectations regarding their relocation: (i) the affected persons must be compensated at replacement value without depreciation, before project start-up; and (ii) the compensation process must be fair and respect the human rights of those affected by the project.

Within the framework of the project's Resettlement Action Plan, information meetings concerning the entire Lot 2 were held in Katanga and Tshikapa to inform the people about the level of preparation for the NR1 rehabilitation project and principles and procedures for the compensation of persons affected. The following general principles were retained as the basis for compensation:

(i) The relocation of PAPs is consistent with expropriation and should be carried out within the framework of the Congolese regulations in force;

(ii) Where Congolese regulations are unfavourable, certain Bank provisions deemed to be more favourable will be applied;

(iii) All persons affected should be compensated without cultural, social or gender discrimination, as long as these factors do not increase the vulnerability of persons affected;

(iv) The persons affected must be compensated at replacement value without depreciation, before project start-up;

(v) The compensation process should be fair and respect the human rights of those affected by the project;

(vi) It would be preferable to pay compensation in cash for individual losses, notably business revenue. However, those relating to structural or service equipment, the compensation options will be the subject of more detailed estimates to pay those affected in the form chosen;

(vii) Compensation in kind will include the reconstruction or renovation of the affected structures (buildings, fences, etc.);

(i) Other measures will be included in the programme to ensure fairness and impartiality in the compensation of people who will be affected by the project.

Specific Assistance to Vulnerable People

Provision has been made for compensatory measures to help vulnerable people who are generally very affected by any change and who lack financial resources to adapt, so that they

should not end up in an even more precarious situation. Vulnerable people will include unemployed heads of households; female heads of households; physically or mentally handicapped persons; abandoned elderly people or, conversely, homeless children; infants; and women in an advanced state of pregnancy. In fact, they are likely to be excluded from the benefits of the operation and to only suffer its inconveniences for neglecting or not being able to attend informative meetings, and not being eligible for compensation by omission, for example. The CPAR will provide specific assistance to vulnerable people before, during and after the process in order to: identify vulnerable people included among those affected; ensure that no household headed by a woman eligible for compensation is excluded; ensure that benefits actually reach those for which they are intended by avoiding middlemen; providing assistance for the transportation of sick, disabled and elderly people, pregnant women or mothers with children of tender age, etc.

Attendant and economic support measures will include relocation and transportation allowances, etc. This assistance will be financed through a budget heading for contingencies. To ensure that the emergency assistance is provided only to those who are really vulnerable, the Committee in charge of implementing the RAP (CPAR) will be requested to validate each request for assistance.

Public participation in the public survey itself will enable the expression of grievances and promote transparency and fairness in the compensation process. Various media will be used to fully inform the people affected by the project, including the availability of the RAP, the use of posters and radio broadcasts in local languages.

INSTITUTIONAL RESPONSIBILITIES

Institutional Arrangements

According to Congolese institutional arrangements, MITPR will, in its capacity as the Contracting Authority and its structures acting as Contracting Authority Delegate (CI) and Project Supervisor (OdR), organize and supervise the implementation and monitoring of the RAP. It will be supported by the provincial services of OdR, OVD, town planning, environment, etc. In early 2010, the CI commissioned a topographic survey of plots in the right-of-way of Lot 2 which helped to initially identify the dwellings, equipment, plantations and agro-pastoral land to be expropriated. The final delimitation of all the property to be expropriated will be done after the RAP validation meeting, at the end of the statutorily planned public inquiry. The compensation for agricultural assets corresponding to 30 ha, and an average yield estimated at 100 qt/ha and a unit cost of CDF 165/k will be CDF 49.5 million.

The people affected by the project will receive financial compensation in accordance with Law No. 77/1 of 22 February 1977 on expropriation for public purpose in Democratic Republic of Congo. Such compensation will correspond to the value of all assets lost by each person affected by the project. The Committee in charge of its implementation will: (i) establish the legal and material situation of assets to be expropriated; and (ii) conclude an agreement between the parties concerned by the expropriation on the value of the property to be expropriated within two months with effect from the date the matter is submitted to it, renewable once for one month. To that end, it will have all the powers necessary to recognize the beneficiaries from the date the matter is referred to it.

Organization of RAP Implementation

This plan provides for the establishment of a Committee responsible for the implementation of the Resettlement Action Plan (RAP) attached to MITPR and its structures acting as Contracting Authority Delegate – Infrastructure Unit (CI) – and Project Supervisor – the Road Board (OdR). The first includes the Environment Unit in charge of ensuring the preparation and implementation of the Resettlement Action Plan. It will, in collaboration with OdR services, in their capacity as Project Supervisor, ensure the smooth implementation of the Plan. The Infrastructure Unit and the Roads Board have experienced staff. Each of them has two environmentalists and two socio-economists. The Committee will comprise representatives of the CI, OdR, MDC and the Contractor. It will be placed under the supervision of the Contracting Authority Delegate (CI) which will chair it, assisted by a legal officer who will act as Committee secretary. The membership of this Committee will include the representatives of local public authorities (decentralized services) and civil society (NGOs, associations, etc.).

Institutional Responsibilities

The tasks listed below may change depending on commitments made by DRC's Government with people affected by the project. In any case, the scheduling and implementation of the tasks should take into account the deadline for implementing the RAP, which will be entirely implemented with ADF resources. Therefore, funds intended for implementing the Plan will come from the project budget. It will be subject to an external evaluation at project-end through which it will be ascertained that no livelihood was lost as a result of the project. Monitoring reports will confirm that compensation has been properly paid.

No.	**Tasks**	**Responsibility**	**Implementation**
1	Presentation of provisional RAP	CI/MITPR	CI
2	RAP approval	CI/MITPR	MECNT
3	Approval of Public Purpose Decision (PPD)	Ministerial Council	MITPR/
4	Publication	CI/MITPR	CI
5	Establishment of CPAR	CI/MITPR	CPAR
6	Public inquiry	CI/MITPR	CPAR
7	Finalization and presentation of final RAP	CPAR	CPAR
8	Mobilization of funds needed for cash compensation	MITPR/MPlan/	CPAR
9	Negotiation, signature of agreement and payment certificates	CPAR	CPAR
10	Supervision of relocation	CPAR	CI/OR
11	Monitoring of the clearance of rights-of-way and inventory of rights-of-	CI/OR	OR
12	Recording of compensations in files transmitted to the court	CPAR	Min. Justice
13	Evaluation of RAP implementation	CPAR	OR
14	Completion report	MECNT	CI/CPAR/OR

IMPLEMENTATION SCHEDULE AND BUDGET

The budget of the Summary Resettlement Action Plan is estimated at CDF 91.71 million, or USD 100 000. It includes the fees of the environmentalists of the Project Supervisor (OdR) and the MDC, operating costs, the cost of the PAAR (Livelihoods and Public Inquiry Study) validation seminar and monitoring/evaluation activities.

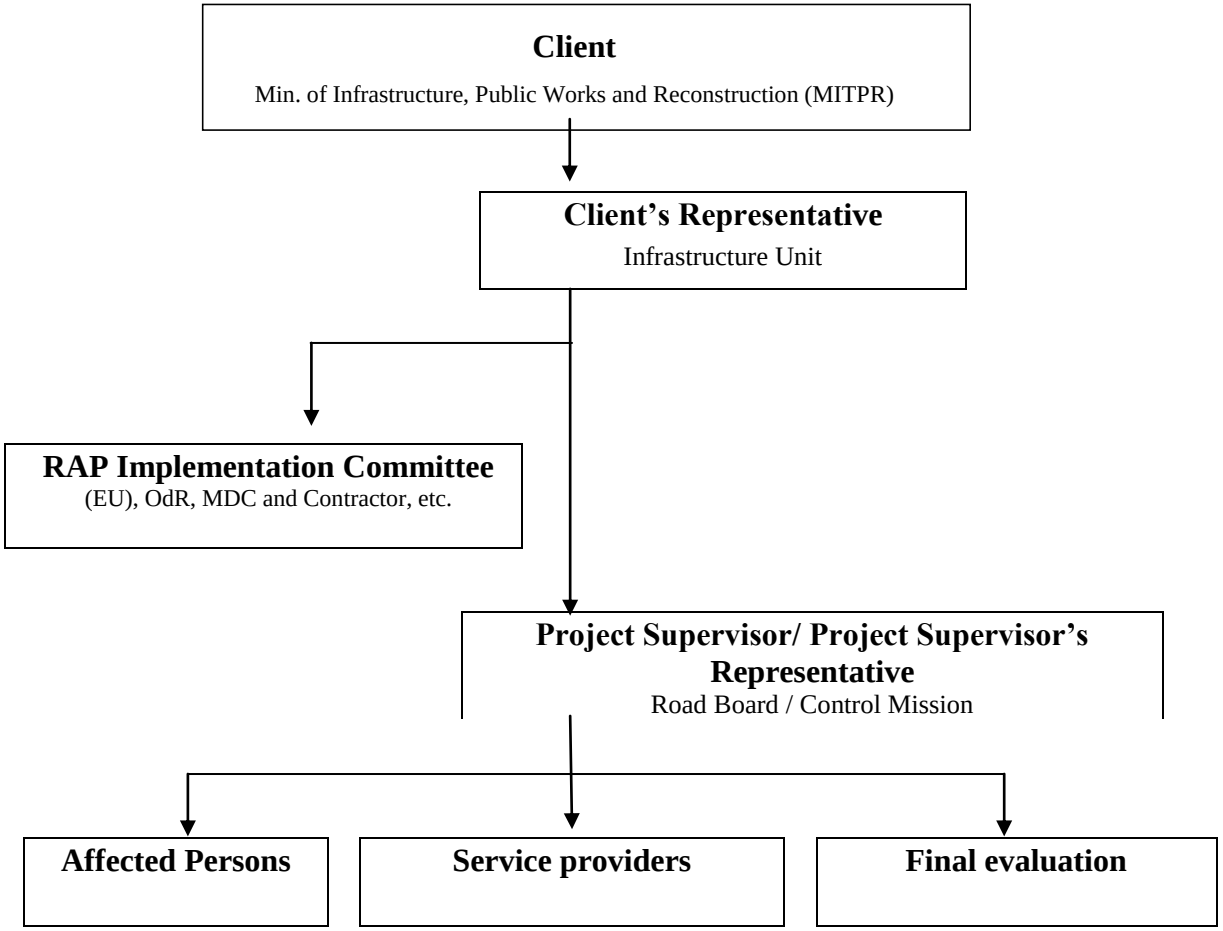
Item	**Unit**	**Number**		**Unit Cost**	**Amount in CDF million**
Compensation of farmers			Output t/ha		
Maize	ha	30 (total)	100 qt/ha	CDF 165 /kg	49.5
Operating cost	Lump sum	1		2 000 000	2.0
Sub-total of PAAR implementation					**51.5**
RAP validation seminar					
Fees of MDC environmentalist		0.5		10 000 000	5.0
Fees of OdR environmentalist		1		1 320 000	1.32
Participants (Mayor, Survey and State Property Service Heads, Council Head, representatives of PAPs)		20		126 000	2.52
Logistic and operating costs	Lump sum	1		12 000 000	12.0
Sub-total of RAP validation seminar	seminar				**20.84**
External evaluation of PAAR					
Fees of independent auditor	Lump sum	1 month		15 000 000	15.0
Sub-total of external evaluation					**15.0**
Total amount					**87.34**
Contingencies 5%					4.37
Total Cost of PAAR					**91.71**

ACTIVITIES	IMPLEMENTATION PERIOD												IMPLEMENTATION PERIOD											
	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6			
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
Prise et approbation du décret portant Décision d'Utilité Publique																								
Enquêtes publique (commodo et incommodo) sur les sites dans l'emprise du projet																								
Mise en place du Comité de suivi																								
Mise en place de la Commission de mise en d'œuvre du PAR (CPAR)																								
Diffusion du PAR provisoire																								
Négociation et signature des certificats d'entente sur les indemnisations avec les PAPs																								
Finalisation et diffusion du PAR final																								
Finalisation du mécanisme financier de mise en œuvre du PAR																								
Publication des arrêtés de cessibilité																								
Mobilisation des fonds nécessaires au paiement des indemnisations																								
Suivi de l'indemnisation en espèces des PAPs																								
Evaluation Externe de l'exécution du PAR																								
Elaboration du rapport de mise en œuvre du PAR																								

Indicative Schedule of Phase 1: Loange Bridge – Lovua Bridge

Prise et approbation du décret portant Décision d'Utilité Publique	
Enquêtes publique (commodo et incommodo) sur les sites dans l'emprise du projet	
Mise en place du Comité de suivi	
Mise en place de la Commission de mise en d'œuvre du PAR (CPAR)	
Diffusion du PAR provisoire	
Négociation et signature des certificats d'entente sur les indemnisations avec les PAPs	
Finalisation et diffusion du PAR final	
Finalisation du mécanisme financier de mise en œuvre du PAR	
Publication des arrêtés de cessibilité	
Mobilisation des fonds nécessaires au paiement des indemnisations	
Suivi de l'indemnisation en espèces des PAPs	
Evaluation Externe de l'exécution du PAR	
Elaboration du rapport de mise en œuvre du PAR	

Organization of PAAR Implementation



Annex 3

Environmental Compliance Certificate

CERTIFICAT D'ACCEPTABILITE ENVIRONNEMENTALE
N° 008/CAB/MIN/ECN-T/15/JEB/2010

LE MINISTRE DE L'ENVIRONNEMENT, CONSERVATION DE LA NATURE ET TOURISME,

Vu la loi n°11/009 du 09 juillet 2011 portant Principes Fondamentaux relatifs à la protection de l'Environnement, en ses articles 19 et 21;

Vu tel que modifié à ce jour par l'Arrêté Ministériel n° 008/CAB/MIN/ECN-EF/2007 du 03 avril 2007, l'Arrêté Ministériel n° 044/CAB/MIN/ECN-EF/2006 du 08 décembre 2006 portant Création, Organisation et Fonctionnement du Groupe d'Études Environnementales du Congo « GEEC » en sigle;

Vu la requête introduite par la Cellule Infrastructures « CI », à travers sa lettre Réf. CI/CD/UES/ak/001463 du 06 septembre 2011 relative à la validation de l'Etude d'impact environnemental et social du Projet d'aménagement et de bitumage de la route Batshamba-Tshikapa (119 Km) dans les provinces de Bandundu et Kasaï Occidental;

Considérant l'Etude d'impact environnemental et social du Projet d'aménagement et de bitumage de la route Batshamba-Tshikapa (119 Km);

Sur avis favorable du Groupe d'Études Environnementales du Congo « GEEC »;

Délivre à la CI le CERTIFICAT d'ACCEPTABILITE ENVIRONNEMENTALE d'une validité de cinq (5) ans pour son Projet d'aménagement et de bitumage de la route Batshamba-Tshikapa (119 Km) dans les provinces de Bandundu et Kasaï Occidental.

Fait à Kinshasa, le 13 SEP 2011

Pour le Ministre en Mission
Olivier KAMITATU ETSU
Ministre du Plan