



**ROAD PROGRAM PHASE II**  
**Upgrading of the Mouila-Ndendé, Ndendé - Tchibanga and**  
**Port Gentil – Mandorové Roads**



**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT**

**SUMMARY REPORT**

**Libreville, August 2010**



## NON TECHNICAL SUMMARY

### 1. PROGRAM AND ITS COMPONENTS

1.1 The Government of Gabon (GOG) has requested assistance from the African Development Bank (ADB) to finance the second phase of the Road Program (RP2). The RP2 includes: i) the upgrading/rehabilitation to bituminous standard of 189 km road and the implementation of environmental measures ; ii) the ancillary works t; iii) the feasibility study of a 233 km road; iv) the institutional support to the restructuring of the road subsector, and the program management.

1.2 Three main road sections totaling to 189 Km of this program includes: (i) Mouila-Ndendé (70km); (ii) Ndendé-Tchibanga (85km); and (iii) Port Gentil-Mandorové (34km). The road works will constitute the rehabilitation and paving of 189 Km of road, including the road reservation for optical fiber. Environmental mitigation measures are also included: HIV/AIDS, environmental protection and safety sensitization measures, Monitoring and supervision of works.

### 2. PROCEDURE USED AND ALTERNATIVES

2.1. The current study is the update of three Environmental and Social Impact Assessment (ESIA) realized according to the Gabonese procedure on the following sections: Mouila - Ndendé -Doussala in 2010, Ndendé –Tchibanga in 1998 and Port Gentil-Mandorové in 2008/2009, as well as an adaptation to the environmental rules of the ADB related to examination and approval of projects. The study has been finalized after the field surveys done between July 19<sup>th</sup> and August 15<sup>th</sup>, 2010?. The methodology used for this study has been the following :

- An information search relating to the road projects concerned, exploitation of documentation on the related sectoral policies texts taking into consideration the stake of the project, as well as the legal texts and the ESIA of similar road projects;
- Design of a grid of data acquisition from various administrations and human resources, as well as an actualization starting from biophysics, socio economic and cultural realities of the program zone of influence;
- Discussions with the actors and partners of the program: officers of the administrations, NGO, women groups, trade unions of transporters, of decentralized communities, both in Libreville and in the principal localities of the Zone of Influence of the Program (ZOI) which are Mouila, Ndendé, Tchibanga, Port-Gentil and Mandorové;
- The drafting of notes on the significant environmental aspects along the roads during the field surveys;
- Exploitation and data analysis collected for the drafting of the ESIA report, supplemented by an Environmental and Social Management Plan (ESMP).

2.2. In terms of alternatives, two possible choices arise: to “carry out” or “not to carry out” the program. By not carrying out this program, one chooses to maintain the road in its actual position. In this case, the consequences are as follows:



- The persistence of high accident risks and thus of numerous victims with the inherent economic and social consequences (losses of revenue, restructuring of the family units, increase in the number of dependants in the family,)
- Increase in the vehicle operating costs;
- The persistence lack of comfort to the road users;
- An important economic and social shortfall related to:
  - The lengthening of journey times of transport on the axes in consideration;
  - Difficulties in the marketing flows of the agricultural and handicraft products;
  - The limitation in the development of sites of potential tourist interest;
  - The loss of employment opportunities and incomes for at least 600 people during the completion of the work;
  - Over mortality due to the difficult conditions of transfer of the patients to the health centers;
  - The deceleration of the economic trade between this part of the country and other areas and in particular with Congo Brazzaville.

Moreover it is important to stress that the postponing of the realization of the RP2 will undoubtedly involve an increase in the works costs because of the raise in material prices on the global market. Moreover, the option to “carry out” is a strategic need because the road section Mouila-Ndendé is part of the international axis connecting Cameroun to Congo-Brazzaville and DRC through Gabon, while the axis Port Gentil-Mandorové will begin opening-up the province of Ogooué-Maritime by land transport because currently the interurban road axes do not exist.

### 3. MAIN SOCIO ECONOMIC IMPACTS

#### Positive impacts

3.1. The positive impacts of this road will be very numerous. Most important will be: (i) improvement of the quality of life of the people in the ZOI; (ii) job creation for the local populations particularly for the youth; (iii) better accessibility to the health centers; (iv) the increase in the demand for food and beverage hospitality, consumables and manufactured food, housing and transport in the zones of influence; v) all seasons' supply and availability of tradesmen and better evacuation of agricultural and artisanal produce to the consumption centres; (vi) the increase in the production and marketing of the agricultural and artisanal produce; (vii); the development of the ecotourism, and the (viii) improvement of the condition of the road will contribute to the decrease of fuel consumption and the reduction in the CO<sub>2</sub> emissions in the atmosphere. As a whole, the program will contribute to poverty reduction poverty and improvement of the environment and the standard of living of the ZOI populations.

3.2. Thus, the PR2 will allow job creation and generation of financial incomes for 600 local workmen, for at least three years (the PR2 will be carried out over a period of 5 years). The major incomes from this programme is anticipated to favour money injection in the ZOI which will result in an improvement of the living conditions of the workers and their close relatives, consolidation of the rural savings, and the creation of micro-individual and family projects.



3.3. The PR2 will also promote local trade and small scale business induced by the improvement of the road transport, by facilitating the flow of the goods produced by women associations, as well as the supply of agricultural inputs. It will thus constitute a lever in the process of poverty reduction at the households levels, because of the responsibilities devolved to women and their role of promoters of income-generating activities. Moreover, the women and the young people are mostly solicited for the transport of harvests. The works on the access roads will relieve them of their hard labor and will facilitate access to the farms and to the health centers. During the works construction stage, the food stalls and sellers situated near the roads works will collect a minimum amount of FCFA 120 million by selling food (cassava, potato, rice, porridge, soup/broth) and local drinks to the 600 workmen to the sites.

3.4. The rehabilitation of the feeder/access roads and the supply of food processing equipments for cassava, sugar cane and fish, and the means of non-motorized transport (wheelbarrows) to the women's organization groups in Mouila, Ndendé, Tchibanga and Port Gentil) will make it possible to noticeably reduce the difficulties of the transport activities and transformation of the agricultural produce of the women's groups towards marketing of their produce in the ZOI's markets. Moreover, a generated time-benefit, thanks to the better effectiveness of the marketing of the agricultural produce, will benefit on the education and children's health along the ZOI.

#### **Negative impacts and the associated mitigation measures**

3.5. The program comprises potential negative impacts related to the loss of goods and equipment, public health, safety, deterioration of the standard of life, impoverishment of the soil and the loss of vegetation.

- On the Mouila-Ndendé axis: the plant nursery of Mouila is touched at its Western fence. The agricultural culture areas (banana, cassava) are evaluated to be 5 ha.
- On the Ndendé – Tchibanga axis, the loss of buildings affects 24 houses (sheltering 47 people) and 1 borehole. These houses and equipment are dispersed on a section of 11 km, the houses are closely spaced from each other, the land constraint does not exist in the ZOI. The agricultural culture areas are evaluated to be 4 ha.
- On the road Port Gentil - Mandorové, the buildings to expropriate relates to 12 houses, 7 shops and three hangars dispersed on a section of 9 km. 42 people are directly affected. It is noted in addition that the two axes are distant from one another at a distance of at least 200 km.
- The loss of agricultural cultures surfaces (mainly cassava and banana) is approximately 5 ha on the Mouila - Ndendé axis and 4 ha on the Ndendé-Tchibanga axis. The owners of the houses concerned will move 40 m as per regulation of the right of ways of the roads, considering that there is no land constraint in the zone of the RP2.

The houses and equipment likely to be affected (at the time of the field surveys in July-August 2010) are presented in appendices 2 and 3. The identification done is liable for modification before the commencement of the works due to: (i) possibility of establishment of houses made of wood planks in the Zone of Influence; -ii- possible creation of new farms in relation to the implementation of the National Strategy for Food



Security (2010 - 2014) which encourages an increase and a diversification in agricultural productions.

- The potential impacts on health hazards are especially the extension of risks of the HIV/AIDS in the project's Zone of Influence. Vis-a-vis these health hazards, the recommended measures include activities of the Information, Education, and Communications (IEC) by means of local public awareness campaigns, educational film projections and panels of information planted near the roads. The voluntary screening tests are also recommended. These actions are anticipated to appreciably limit the health hazards.
- The safety impacts are related to the management of the construction sites, the organization of the movement of the construction equipments, the movement of the road users, the handling of the explosives to the material sites, etc. The impacts can be reduced, if not eliminated by communication campaigns, discipline respect of which rules are formalized in the Quality Assurance Plan prepared by the firms and as approved by the Supervision Missions, the adequate indication of the building sites, the effective signaling of the works sites, the appropriate safety measures taken in the design and construction of the road sections. Groups of sensitization are also envisaged. The fencing of 7 schools and 3 health centers adjacent to the road sections, will also contribute to the attenuation of the safety impacts.
- The alteration of the landscapes and the living standards by solid waste resulting from the works, the soil erosion resulting from the operation of the machines in the quarry and borrow pits shall be subject to specific measures as detailed in point 4.
- The risks of surface water and underground water pollution due to bad storage and/or approximate handling of hydrocarbons at the time of servicing the machines will also be the subject of specific measures detailed in chapter 4.
- The loss of vegetation, however limited, due to the space needed for good management of work along the roads. Trees planting at the borrow pits and quarry sites are envisaged. Tree Plantations aligned along the road axes will have at the same time a function of embellishment of the road landscapes, and shade provision to the pedestrians and of contribution to the sequestration of carbon, thus participating to the fight against the climate change, albeit limited. Thus, more than 23,000 trees will be planted (14,000 on Mouila - Ndendé, 5,000 on Ndendé - Tchibanga and 4,260 on Port Gentil - Mandorové).

#### **4. ENVIRONMENTAL AND SOCIAL MONITORING PROGRAM**

An Environmental and Social Monitoring Program (ESMP) is established, including:

4.1. Environmental and social monitoring by the contractors and the executing agency, each of them for the actions of which it bears responsibility. A summary table integrated in the ESMP presents the principal impacts, mitigation measures, the principal stake-holders, the frequency and/or the period and the indicators of achievements. Certain mitigation measures must be controlled at the setting up of the works site (settlement of workers, sanitary and cleansing equipment, health centers and its equipments). Other measures are to be monitored during the implementation of the projects as safety devices in the quarry sites, the preventive



measures against accidents in the quarry sites, signaling of deviation roads, the watering of the deviation tracks and the tracks which are used for the transportation of materials. Finally, other measures are to be followed at the beginning and at the completion of the works, such as the identification of the borrow pits and quarries.

4.2. The follow-up of the implementation of the ESMP by the Service of the Impact Studies of the General Directorate of the Studies of Infrastructures (GDSI) and those of the Ministry of Environment is envisaged in the form of field missions every two months, thus 36 field missions. This follow-up takes into account the preventive measures of HIV-AIDS and the specific supports to the women's organization groups.

## 5. PUBLIC CONSULTATION

5.1 The processing of this study benefited from various consultations through both formal and informal meetings with Project Affected People, the administrative and technical persons in charge of public services, the persons in charge of NGO and associations, of political and traditional officials and, community groups and women associations, in Libreville, Mouila, Ndendé, Tchibanga and Port-Gentil.

5.2 For the implementation of the ESMP, consultations are recommended by means of: i) Organizing one day workshops on each road project and its ESMP which will mobilize around forty people in order to inform and sensitize the representatives of the identified organizations and affected persons, and the measures designed to minimize the nuisances and to optimize the positive impacts. These workshops are envisaged in Mouila, Tchibanga and Port-Gentil at the beginning of the road works; ii) Dialogues with the villagers in the vicinity of the road project, through the IEC actions on road safety, the HIV/AIDS awareness and the tree planting. The dialogues will be organized by the Executing Agency, Contractors and Consultants; iii) For the restoration works of the quarries and borrow pits, consultations will take place between the contractors, the supervision mission, the Services of the Impact studies, the Unit of Management and Monitoring of the Program, and the representatives of the localities concerned to determine the practical methods of intervention and the necessary safeguards needed accordingly and specific to each site.

## 6. INSTITUTIONAL STRENGTHENING MEASURES

6.1. The adoption of a statutory text (governmental decree or joint decree of the ministers in charge for the road infrastructures and territorial administration) to fix a minimal distance to observe between the national roads and the market sites, health centers and schools is recommended, in particular in the savannahs areas. This aims at avoiding accident risks related to the proximity of the infrastructures to the roads as it can be currently observed in those localities. This will avoid also the low value landscape induced by the presence of tombs near the roads.

6.2. The setting up of workshops (a total of 4) for sensitization of the centralized and regional executives of the Ministry for Equipment, private operators and consulting companies of the transport sector on the stakes of the road project's ESMP and the roles of the actors. In this regard, the aim is to create and consolidate an environmental conscience in the road sector actors for a better awareness of the environmental and social aspects in their professional practices.



6.3. Education actions to consolidate the capacities of the executives concerned with the administration of the procedure of ESIA and the follow-up of the ESMP: 4 training courses are proposed for the executives of the DGEI, the DGIT and the DGEPN on the issues of the ESIA and the follow-up of the ESMP.

6.4. The support with the production and the issuing of a sectoral guide of realization of the ESIA of the road projects and the realization of the strategic environmental evaluation of the transport sector taking into account land transport, air, river and maritime infrastructures. The goal is to contribute to develop the capacities of the actors and to improve the quality of the studies.

6.5. The revision of the attributions of the Service of the Impact studies on Environment (SEIE) of the DGEI to make it more operational and to support collaboration with the other structures of the Ministry and the services of the Ministry in charge of the administration of the procedure of environmental evaluation.

## 7. COSTS OF MITIGATION MEASURES AND VALORIZATION OF THE IMPACTS

The total costs of mitigation measures and valorization of the impacts of the RP2 and the correlated measure is estimated at 2.987.237 050 FCFA. However, the cost of measures of IEC on the HIV/AIDS, on road safety, environmental protection, the alignment tree planting and restoration of borrow pits amounts to 715.445.000 FCFA. The amount for the compensations is estimated at 125.219 00 FCFA which will be paid by the GoG.

## 8. CONCLUSION

8.1. The RP2 will make it possible to improve the living conditions of the populations of the ZOI by opening-up landlocked areas and will contribute to the trade growth with the provinces situated inside Gabon and the neighbouring CEMAC countries. The local communities concerned are eagerly expecting the roads programme to kick off.

8.2. From the environmental and social analysis which was carried out on all the project road sections, it arises that the realization of the projects of the RP2 presents negative socio-economic impacts as well as some negative impacts on the natural environment, but without irreversible major ecological effects. Indeed, these potential negative impacts will be circumscribed technically or compensated by corrective and mitigation measures.

To that end, it clearly appears that potential positive impacts that the program will be able to generate are much more significant than the potential negative impacts of an environmental and social nature which are completely technically controllable. However, because of the upgrading capabilities of building sites and agricultural cultures along the road axes before the start of the works, it is advisable to classify this program as category I according to the ADB environmental categorization.