

AFRICAN DEVELOPMENT FUND



DEPARTMENT OF INFRASTRUCTURE

REPUBLIC OF TOGO

**REHABILITATION OF THE
ATAKPAME - BLITTA – SOKODE – KARA ROAD**

**SUMMARY OF THE ENVIRONMENTAL
AND SOCIAL MANAGEMENT PLAN**

TABLE OF CONTENTS

I - INTRODUCTION	1
II - PROJECT DESCRIPTION AND RATIONALE	1
III - POLITICAL, LEGAL AND ADMINISTRATIVE FRAMEWORK	2
IV - DESCRIPTION OF THE PROJECT ENVIRONMENT	4
V - VARIANTS OF THE PROJECT	8
VI - POTENTIAL IMPACT AND MITIGATIVE/CORRECTIVE MEASURES	8
VII - ENVIRONMENTAL RISK MANAGEMENT	16
VIII - ENVIRONMENTAL MONITORING PROGRAMME	16
IX - PUBLIC CONSULTATIONS AND DISSEMINATION OF INFORMATION	18
X - ADDITIONAL INITIATIVES	18
XI - CONCLUSION AND RECOMMENDATIONS	18
XII - REFERENCES AND CONTACTS	19
XIII - ANNEXES	

I. INTRODUCTION

1.1 This project covers the development of the Atakpamé-Kara road over nearly 253 km along National Highway No. 1 (RN1) which links Togo to the hinterland through the Lomé-Ouagadougou corridor (Community Road No. 9 of the WAEMU road network). The sector objective of the project is to contribute to the efficiency of the road transport sub-sector in order to boost economic and social development, and regional integration. Its specific objective is to improve traffic flow along the Atakpamé-Kara segment of the Lomé-Ouagadougou highway connecting countries in the hinterland, and reduce the adverse effects on the environment as well as overloading.

1.2 Pursuant to the environmental policy requirements of the Bank and Togo, an Environmental and Social Impact Assessment (ESIA), summarized in this report, was conducted in 2008 and updated in 2010 by a consultant commissioned by the ADB. The ESIA, ESMP and the road project were presented to the Directorate of Environment and approved in accordance with Law No. 88-14 of 3 November 1988: Environmental Code. The ESIA's Certificate of Environmental Compliance issued by the Ministry of Environment has been transmitted to the Bank. From the environmental standpoint, the project is classified under Category 2.

II. PROJECT DESCRIPTION AND RATIONALE

PROJECT DESCRIPTION

2.1 The project entails the rehabilitation/reinforcement of the Atakpamé – Kara segment on National Highway No. 1, which lies along the Lomé – Ouagadougou Community Corridor No. 9 (CU9). The project road comprises three segments: (1) Atakpamé – Blitta, (2) Blitta – Sokodé and (3) Sokodé – Kara. The estimated total project cost by lot, including physical and financial contingencies, net of taxes and customs duties, is reflected by the following break-down: Lot 1 (Atakpamé-Blitta): UA 34.676 million; Lot 2 (Blitta-Sokodé): UA 33.757 million; and Lot 3 (Sokodé-Kara): UA 28.936 million. The total cost of all three lots, representing 253 km between Atakpamé and Kara, is about UA 97.37 million. These costs were determined based on 2009 preliminary designs and unit costs from bids received in 2010 for similar road works in Togo. The ADB will contribute UA 34 million to the financing of the Blitta – Sokodé road segment.

The Bank's financing comprises the following four components:

- (A) Road works comprising asphaltting works on about 79 km of the Blitta – Sokodé road; environmental impact mitigation measures; works control and surveillance; awareness-raising campaigns on environmental protection, road safety, HIV/AIDS and STDs;
- (B) Related works: feeder roads connected to the highway, rehabilitation of socio-economic infrastructure, installation of fixed vehicle weighing scales, construction of a warehouse at the Sotouboua toll gate, as well as control and surveillance of related works;
- (C) Road studies: Study on the Benin-Tohou-Notsé-Agou-Apégamé-Nytoé frontier road on the Ghanian border (150 km); and
- (D) Project management support: monitoring/evaluation of project impact; support to the Project Management Unit within the DGTP; and financial and accounting audit.

PROJECT RATIONALE

2.2 The Atakpamé-Kara segment, situated on RN1 which links Lomé Port to the hinterland countries (Burkina Faso, Niger and Mali), is of great regional importance. It lies on a regionally recognised multinational corridor (WAEMU/ECOWAS). The project was initiated in 2007 by the Government with the support of the West African Economic and Monetary Union (WAEMU), in a socio-economic context characterized by a low economic growth rate and a high incidence of poverty that reached 61.7% in 2006, at the national level, 74% in rural areas and 37.8% in urban areas. The socio-economic constraints are compounded by the general deterioration of the 4 319-kilometre road network (37% of the classified network was deemed to be in disrepair in 2007). In this difficult context, the reconstruction of RN1 and the 253-kilometre long Atakpamé-Kara segment in particular (the most deteriorated segment), is perceived by Togolese authorities as a priority that should help support the agro-pastoral sector to boost competitiveness and promote external trade by acting as an indispensable support for supplies to the hinterland countries namely, Burkina Faso, Mali and Niger. A large share of the external trade of these countries infact transits through the Lomé Port (Togo) via the Atakpamé-Kara road, which in its entirety lies on Togolese territory, right up to the border with Burkina Faso.

2.2 This priority choice is consistent with the Poverty Reduction Strategy Paper (2009-2011) which designates operations in the transport sector and more precisely the Lomé-Cinkassé (RN1) corridor leading to the hinterland countries as one of its priority areas. It is also consistent with the policy of the West African Economic and Monetary Union (WAEMU) whose main missions include boosting inter-State communication channels, in particular sea access routes for landlocked member-countries. It is for these reasons that it accepted to finance the technical, economic and environmental studies of this project.

Lastly, the project is wholly in conformity with the Bank's interim Country Strategy Paper (CSP) (2009-2010) for Togo, whose second priority (second pillar) is to "Prepare conditions for sustainable revival of economic growth by supporting the rehabilitation/construction of economic infrastructure".

III. POLITICAL, LEGAL AND ADMINISTRATIVE FRAMEWORK

SOCIO-ENVIRONMENTAL REQUIREMENTS OF BENE FICIARY COUNTRIES AND THE ADB

3.1 Conscious of the need to factor environmental concerns into the National Economic and Sustainable Development Policy, the Togolese Government adopted an environmental policy to: (i) serve as a national orientation framework for promoting rational natural resource and environmental management in the areas of activity concerned; and (ii) consolidate the country's economic recovery measures framework in order to found its development on an ecologically viable basis. The general objective of Togo's environmental policy is to promote general and rational environmental management as a means of improving community living standards and conditions, with a view to sustainable development.

3.2 Law No. 88-14 of 3 November 1988 on the Environmental Code is currently the core legal instrument for environmental management in the country. Its first article proclaims a general interest in environmental conservation; maintenance or restoration of natural resources crucial to human life; prevention or limitation of activities that are potentially harmful to the environment, human health or property; and the correction or offsetting of environmental degradation. There is also provision for

institutions responsible for environmental protection and management and it lays down some major legal principles governing environmental management. These relate to: environmental impact studies; waste management; discharge of contaminants into the atmosphere, water and soil; prevention of the dissemination of chemical products and radioactive matter dangerous to the environment; works, structures and facilities that may harm aquatic environments and soils; pollution, noise and nuisance control; classified facilities for environmental protection; protection of plant and animal life, natural habitats and sites. In the area of forestry, the decrees of 5 February 1938 to organize the forestry regime on the territory of Togo and 55-582 of 20 May 1955 to protect forests on African territories under the Ministry of French Overseas Territories are still in force, as supplemented by several texts namely: Ordinance No. 4 of 16 January 1968 to protect wildlife; Decree No. 80/171 of 4 June 1980 on implementation modalities of Ordinance No. 4 of 16 January 1968 to define the culling limits for various animal species, and the conditions for the award of various categories of hunting permits and taxes for slaughtering game.

3.3 To implement its vision, the ADB will ensure that the project's design and execution are consistent with its policy instruments and guidelines. The main ADB policies and strategies of importance to this project include: (i) Bank Group Policy on Good Governance; (ii) Gender Policy; (iii) Policy on the Environment; (iv) Women in Development Strategy; (v) Information Disclosure Policy; (vi) HIV/AIDS Strategy for Bank Group Operations; (vii) Poverty Reduction Strategy and Action Programme; (viii) Policy Governing Cooperation with Civil Society Organizations; (ix) Guidelines on Environmental and Social Impact Assessment of Public Sector Operations; and (x) Guidelines on Involuntary Displacement and Resettlement in Development Projects. Specifically, the "Guidelines on Involuntary Displacement and Resettlement in Development Projects" aim to: (i) avoid or reduce the involuntary displacement of persons to the minimum; (ii) prepare a resettlement plan where displacement is inevitable, while designing the operation as a development project; (iii) compensate persons to be displaced at full replacement cost; (iv) provide land, accommodation, infrastructure and other compensations to the affected population, even without a title deed on the land (by not constituting a barrier to compensation, this last point is what distinguishes it from similar national regulations).

NATIONAL ADMINISTRATIVE FRAMEWORKS

3.4 Established in Togo in 1987, the Ministry of Environment is responsible for environmental protection and conservation, and the formulation, implementation and monitoring/evaluation of the environmental policy. Referred to as the Ministry of Environment and Forestry Resources (MERF), it plays a crucial role in environmental protection and management, especially as regards: (i) the initiation, guidance, coordination, planning, organization and management of activities likely to improve living standards; and (ii) the implementation, monitoring and coordination of international environmental agreements and the applicable State laws and regulations. Within the Ministry of Environment and Forestry, the Department of Environment is responsible, among other things, for the environmental and social impact assessment procedure. It has supervisory authority over the division responsible for environmental studies and audits, which gives it powers to review ESIA reports, prepare certificates of environmental compliance and monitor the implementation of ESMP. In the field, MERF is represented by regional directorates. The directorates in the three project regions could play an active role in implementing the ESMP in conjunction with their public works counterparts.

3.5 Prefecture, District and Village Environmental Management and Protection Committees were set up in 1993. Private sector structures, local communities, non-governmental organizations and village groups intervene in environmental management without any appropriate coordination.

Besides, many ministries are involved in environmental protection and intervene from a sectoral perspective, depending on their specific responsibilities (ministries in charge of agriculture, livestock, water resources and forestry, mines, hydrocarbons, industry, energy, health, population, town planning and housing, research, education, communication and culture).

INTERNATIONAL TREATIES ON SOCIO-ENVIRONMENTAL MATTERS

3.6 Togo has ratified many regional and international conventions on environmental protection. They include: (i) The Convention Relative to the Preservation of Fauna and Flora in their Natural State (London, 8 November 1933); (ii) The International Plant Protection Convention (Rome, 6 December 1951); (iii) The Phyto-Sanitary Convention for Africa (Kinshasa, 1967); (iv) The African Convention on the Conservation of Nature and Natural Resources (Algiers, 15 September 1968); (v) The Convention on Wetlands of International Importance (Ramsar, 2 February 1971); (vi) The Convention Concerning the Protection of the World Cultural and Natural Heritage (Paris, 23 November 1972); (vii) The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, Washington, 3 March 1973); (viii) The International Convention on the Prevention of Pollution from Ships (London, 1973); (ix) The Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (London, 1973); (x) The Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment in the West and Central African Region (Abidjan, 23 March 1981); (xi) The United Nations Convention on the Law of the Sea (Montego-Bay, 10 December 1982); (xii) The Vienna Convention for the Protection of the Ozone Layer (Vienna, 1985); (xiii) The Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal, 16 September 1987) and its amendment (Copenhagen, 1992); (xiv) The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel, 22 March 1989) and its Protocol; (xv) The Convention on the Ban of the Import to Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa (Bamako, 30 January 1991); (xvi) The United Nations Framework Convention on Climate Change and the Convention on Biological Diversity (Rio de Janeiro, 1992); (xvii) The United Nations Convention to Combat Desertification (Paris, 17 June 1994); (xviii); The Stockholm Convention on Persistent Organic Pollutants (Stockholm, 23 May 2001); (xix) The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam, September 1998); and (xx) The Cartagena Protocol on the Prevention of Biotechnological Risks to the Convention on Biological Diversity (Montreal, 29 January 2000).

IV. DESCRIPTION OF THE PROJECT ENVIRONMENT

4.1 The project area is situated in the Plateaux, Central and Kara Regions of Central Togo. The project road is 253 km long and located between PK 158+334 and PK 411+450 on National Highway No. 1. Most of the road lies in rural areas although it cuts across a few urban areas. According to data from monographs prepared in 2009, the project area has a population of 706,700; the population of the three regions is about 2,408,296 or approximately 43% of the country's estimated total of 5,596,000 inhabitants. As in all rural areas in Togo, the main economic activity in the area is agriculture. Poverty is on the high side with an estimated incidence of 61.7%.

MAIN CHARACTERISTICS OF THE PHYSICAL ENVIRONMENT

4.2 *Climate:* The Plateaux Region which is one of the areas with the highest rainfall in the country, has a mild sub-equatorial climate with 2 (two) dry seasons and 2 (two) rainy seasons of high irregular duration, although these seasons have recently become less pronounced due to

unpredictable rainfall. Average annual temperatures decline from East to West: 27°C on the Benin border and 22°C on the Kloto Highlands. The mean annual temperature differentials do not exceed 5°C throughout the year. The hottest month is February with a mean maximum temperature of 34°C and a mean minimum of 21°C. August is the coldest month with a mean maximum temperature of 25°C and a mean minimum of 19°C. Relative humidity varies from 97% to 40% during the hottest month and 99% to 70% in the coldest month, with a very marked difference between the mountainous areas and the plains. There is a very long period of sunshine during the dry season. It can attain 2000 hours on average, peaking between January and March.

In the Central Region, the rainfall has ranged from 1278 mm to 1345 mm per annum in recent years. The temperature varies between 20°C and 32°C, reaching its minimum levels during the harmattan period and its maximum in the months of February-March. The sunshine period is about 2,500 hours per year, causing average evaporation of 1,600 mm of water. Evaporation varies substantially from year to year, sometimes reaching 1600 mm per year, which is above the region's annual rainfall. The Kara Region has average rainfall of 1200 to 1400 mm per year, with low local variants. The Alédjo Highlands and Niamtougou Plateau receive more rainfall than the surrounding plains. The run-off coefficient is very high while infiltration is very low. The quantity of water available for the vegetation is therefore highly insufficient since the dry season is always very severe and the rain fall lasts for only a limited number of days. The mean annual temperature is 26°C with March being the hottest month with a maximum temperature of 38°C. The coldest month is January with its cool harmattan nights; North-East continental trade winds blow from December to February and the minimum temperature reaches 16°C. The region's climate is constantly hot, although not excessive. There is a very long period of sunshine during the dry season. It can reach 2000 hours on average, peaking between January and March.

4.3 **Geology:** From the geological standpoint, the following major units are found in Togo from the North-West to the South: (i) the Nord-Dapaong area comprising diversified crystalline formations on the eastern edge of the West African craton considered to be of Archean (or ante-Birimian) to Upper Proterozoic (Precambrian C or Birimian) age. The rocks in these formations comprise migmatites, gneiss, amphibolites, granodiorites and granites; (ii) a stable zone represented by sedimentary formations of the Togolese part of the Volta Basin, which do not blend with the Birimian basement complex; (iii) a mobile zone corresponding to the pan-African Dahomeyides chain; and (iv) the coastal sedimentary basin which occupies the southern extreme of Togolese territory and covers a surface area of about 3,300 km². The project area which spans the first three geological units is characterised, among other things, by its stability.

4.4 **Pedology:** Pedological studies in the project area regions reveal five soil types: little-developed soils or lithosol, vertisol, tropical ferruginous soils, ferralitic soils, and hydromorphic soils (swamps, river banks).

4.5 **Water resources:** In the Plateaux Region, four main basins drain the region: the Volta, Mono, Zio and Haho Basin. In the Central Region, there are two (2) major hydrographic basins separated by the Monts-Togo range. These two major hydrographic basins share one common characteristic: they enter the region through neighbouring countries in the East and West. In the Kara Region, the hydrographic network is purely tropical, typical of the Volta basin. The main water courses are: Oti, Koumongou, Kéran, Kara, Mô and Binah.

In the Plateau Region, the crystalline and metamorphic basement complex is composed of compact impermeable rocks. However, the intense tectonic fracturing has given rise to a network of open gaps capable of storing and channeling infiltrated water. The openings of the fractures are widest in the

upper part of the massif exposed to external physico-chemical attacks. This cracked weathered fringe is the target reservoir aquifer for village water supply boreholes. The alterations which cover the basement complex may, when they become thick enough, constitute a slightly permeable but highly capacitive second aquifer which has a direct hydraulic link with the basement complex. The continuous aquifer of alterations is tapped by wells possessing a flow rate of only a few m³/d. Since no in-depth and systematic study has been conducted on groundwater in this area within the Central Region, it should simply be noted that despite its dispersal and fairly good natural chemical and bacteriological qualities, the groundwater options in the Central Region seem limited and uncertain. In the Kara Region, due to the intensity of the fractures which affect the geological areas, there is no continuous aquifer but only fractured watertables linked to a particularly dense network in the hardest most crystalline rocks; in contrast, foliated or schist rocks are less fractured because they are more deformable. The watertables are located between 30 and 70 m, depending on the locality.

4.6 **Plant formations and flora:** In general, the observations made during the field visit in the entire project area show that the region has a lush vegetation cover. It varies from mountain forests in the plateau area, West of the region (Sudano-Guinean forest), to tree-and-bush savanna in the eastern plains (Litimé, Kloto-Sud, Ogou) with gallery forests along the water courses. The main species observed along the road's itinerary are: *Milicia excelsa*, *Khaya grandifoliola*, *Erythrophleum suaveolens*, *Antiaris africana*, *Terminalia superba*, *Parinari glabra*, *Albizia zygia*, *Cola cordifolia*, etc.

Besides, the project area has many exotic species introduced either through a plantation, as an isolated crop or companion crop in agriculture (agroforestry). These are *Tectona grandis* (teak), *Gunelina arborea*, *Cassia siamea*, *Anacardium occidentale* (cashew tree), *Acacia spp.*, *Azadirachta indica* (Neem), *Mangifera indica* (mango), *Citrus spp.*, *Eucalyptus spp.*, etc... All these plantations are separated by farms and fallow land.

In the project area regions, wildlife is composed of several land and aquatic species, thanks to the lush vegetation and numerous water courses.

4.7 **Protected areas:** The road cuts across the Alédjo Wildlife Reserve, a protected area situated in Tchaoudjo and Assoli Prefectures. The Alédjo Wildlife Reserve is a natural area of 765 ha, which is crucial to biodiversity conservation and the protection of local geological and physiographical formations. It is part of the Classified Forests and exhibits an admirable relief and highly varied vegetation with a fault at its very centre, the Alédjo Fault, which is the result of human efforts to dig a motorable road through such a large natural rock. The remarkable plant formations are the dense dry mountain forests and open woodland forests containing *Isoberlinia*, *Anogeissus*, *Chlorophora excelsa*, *Voacanga funtumia*. This picturesque site attracts many national and foreign tourists, mainly because of the Alédjo Fault through which runs the Sokodé-Kara road. The tranquility and beauty of the site have transformed it into a mythical place, which has led to the construction of a Catholic spiritual centre known as "Foyer Avenir" towards the western sector.

MAIN CHARACTERISTICS OF THE SOCIO-CULTURAL ENVIRONMENT

4.8 In 2008, the population of Togo was estimated at 5,596,000. The Atakpamé-Kara road cuts across three regions, six prefectures and 90 localities. The population directly affected is 706,700 inhabitants. The total for the three regions is approximately 2,408,296 or about 43% of the country's total. Given the central and strategic position of the road linking the North to the South of the country, the economic impact of the project will directly affect the population of the three regions. Women represent about 51% of the population. The main characteristics of the population in the

project area are its high rurality (more than 74%) and its youthfulness, with about 60% aged below 24. The poverty line is CFAF 154,853 (Plateaux), CFAF 179,813 (Centrale) and CFAF 155,026 (Kara), compared to the national average of CFAF 242,094. The incidence of poverty is estimated at 61.7%, representing 3,242,257 persons distributed in 535,486 households (PRSP 2009-2011). From the socio-cultural standpoint, the project area is characterized by ethnic and religious diversity. In the Plateaux Region, the predominant ethnic groups are: the Ana, Ifé, Akposso, Akébou, Wawa, Adja, Ewé Kpélé, Agou, Danyi, Kabye and Losso as well as non-natives from several other ethnic groups (Fon, Cotocoli, Lamba, and Yoruba, among others). The Central Region has all the ethnic groups of Togo with a predominance of the Tem-Cotokoli, Kabye, Losso Tchamba and Adélé-Anianga. In the Kara Region, the main ethnic groups are the Kabye, Losso, Lamba, Mola, Loua, Tchra, Kokomba, Bkou, among others. In the project area, the three main religions, namely animism or traditional religion, Islam and Christianity (Catholicism, Protestantism and Evangelicals) coexist harmoniously. In terms of social organisation, traditional chiefdoms are still current. Although harmful practices such as scarification in traditional medicine, excision and others are on the decline, they are still current and facilitate HIV contamination. Malaria, wounds and trauma, acute respiratory infections (ARIs) and intestinal parasitic diseases are the four main causes of medical consultation in the project area regions. However, malaria remained the leading cause of hospitalization in the region's health structures in 2007. The secondary causes are trauma, ARIs, hernia and anaemia. The HIV/AIDS prevalence rate in the Plateaux and Central Regions is higher than the national average. This situation points to the attention that should be paid to the risk of HIV spread during implementation of the road project and future operation of the infrastructure.

4.9 The national gross school enrolment ratio is 112% and the parity index is 0.92. This shows that the current educational system is capable of enrolling all children of school-going age and that slightly fewer girls than boys attend school. An analysis of education indicators for the 2006-2007 academic year shows that the highest gross primary enrolment ratio is observed in the Central Region (125%). The project area has one university, in Kara, which has been training senior executives in several faculties.

4.10 ***Gender and development in the project area:*** The Ministry of Social Affairs, Population and Women's Empowerment conducted a study in 2006 on "Analysis of Gender Disparities and Inequalities in Togo". The study report establishes the existence of many disparities between women and men in Togo. The total labour force is estimated at 60.4% of the total population. The 1998 EDST-II survey and the 2000 URD-DGS reveal a higher level of activity among women (62.5%) than men (57.9%). According to the Department of Statistics, in 2005 the labour force stood at 2,311,580 persons, comprising 1,257,230 women and 1,054,350 men, or 53.46% of women and 46.54% of men. Due to early marriage, women are obliged to take up the responsibility of feeding the family. When they are out of the school circuit, it is considered that they should join the labour market. It has been noted that more than half of the women operate in the informal sector. There are more women in activity than men in both rural and urban areas. Producers' income depends on the sectors in which they operate. Men generally operate in the most lucrative sectors. Trade is the main source of income for women (53.2%) followed by agriculture (40.2%). Women are practically excluded from the formal sector, and constitute only 6.1% of employees. In rural areas, agriculture is the main source of income for both men and women but trade is still a major source of income for 46.1% of women. According to DGIPE, there were 23,256 employees in the Togolese public service in 2005, of which 5100 or 22% were women. Such globally insufficient presence also accounts for their low representation in decision-making bodies.

4.11 ***Civil society organizations:*** On the whole, the wave of democratic expression sweeping through the country since 1990/1991 has spawned a multiplicity of Togolese civil society NGOs,

associations and organizations. They are active in many areas: human rights advocacy, environment, protection of mother and child, health, HIV/AIDS control, community development, agriculture, training and education, transport, etc. Apart from these organisations which have statutes and internal regulations that comply with the provisions of applicable laws on freedom of association, there are many professional agricultural organizations in rural areas, as well as women's associations. These organisations are very active in agricultural and stockbreeding activities (sheep, goats, pigs, poultry) and the processing of agricultural products (maize, cassava, yam, soyabean, sorghum, small-scale catering). They have a major role to play during project implementation, in terms of cooking meals for the hundreds of construction workers. They are organised into umbrella structures or are guided by women's empowerment NGOs.

Many NGOs and associations are part of the institutional framework for HIV/AIDS control. They participate actively in IEC activities, voluntary screening, counseling, etc. in perfect harmony with State structures.

V. VARIANTS OF THE PROJECT

5.1 Technical studies on the Atakpamé-Kara road focus on the broadening, rehabilitation and reinforcement of the existing roadway. Only two options had to be studied for the base course, namely: bitumen aggregate and crushed aggregate; and one option for the surface course, namely bituminous concrete for the roadway and a double layer for the road shoulders. The crushed aggregate solution, which is economically more advantageous, was retained.

5.2 With respect to alternatives, there are two possible options: to implement or not implement the project. Not implementing the project is tantamount to a choice to leave the road in its current state. In that case, the consequences are the following: (i) persistently high risk of accidents and, therefore, of many victims, with attendant economic and social consequences (loss of income, disruption of family units, increase in the number of dependents, etc.); (ii) increase in vehicle operation costs; (iii) persistent lack of road-user comfort; and (iv) economic and social deficits. Furthermore, it should be noted that postponing project implementation will certainly lead to an increase in project costs because of a rise in the cost of materials on the world market. Moreover, the "project" option is a strategic necessity because the road segment which is the focus of this study is within the WAEMU community road network, linking Togo to Burkina Faso, Mali and Niger.

VI. POTENTIAL IMPACT AND MITIGATIVE/CORRECTIVE MEASURES

POSITIVE IMPACT

6.1 This road will have very many positive effects. Prominent among them are: (i) increased trade between Togo and the hinterland countries; (ii) improved quality of life for project area communities; (iii) job creation for the local communities and especially the youth; (iv) better access to health centres; (v) increased demand for catering services, drinks, food and manufactured products, housing and transport in the project area; (vi) all-season supply of goods to traders and evacuation of agricultural and handicraft products to consumption areas; (vii) increased production and marketing of agricultural and handicraft products; (viii) development of tourism; and (ix) improvement of road quality, thus reducing fuel consumption and CO₂ emission. Overall, the program will help to reduce poverty and improve the living conditions of the project area community.

The project will create jobs and generate income for 600 local labourers for approximately two years of work in the three lots. The substantial income will encourage the injection of cash into the project area and translate into improved living conditions for these workers and their relatives, the consolidation of rural savings, and the creation of individual and family micro-projects.

6.2 Through improvement of road transportation, the project will also boost local trade and petty trade by facilitating the sale of goods produced by women's associations and the supply of agricultural inputs. It will therefore constitute a strategic lever in the poverty reduction process at the household level, because of the responsibilities devolved to women and their role as promoters of income-generating activities. Moreover, the services of women, children and youths are those most sought after for harvest transportation. The construction of farm-to-market roads will reduce their hardship and facilitate access to farms and health centres. During the works phase, women restaurant owners in the 90 localities through which the road runs will earn a minimum of CFAF 144 million from the sale of food (corn meal, cassava, yam, rice, porridge, soup, etc.) and local beverages.

6.3 The development of feeder roads and the supply of equipment to women's associations in the three regions (handcarts, wheelbarrows, soya-bean processing equipment, etc.) will substantially lessen the hardship faced by women in transporting their agricultural produce to sell in project area markets. Furthermore, time gains resulting from better marketing of agricultural produce will have a positive effect on children's education and health in the project area.

NEGATIVE IMPACT AND MITIGATIVE MEASURES DURING THE CONSTRUCTION PHASE

6.4 The project has potentially negative effects in terms of public health, safety, change of living conditions, soil degradation and loss of vegetation cover.

The potential effects on health are especially the risk of HIV/AIDS spreading in the communities through which the project road passes. To tackle this health risk, the measures recommended include information, education and communication (IEC) actions conducted through community awareness-raising in public meetings and information panels set up along the project road, as well as voluntary HIV screening tests for communities located along the road and project site workers. Such actions should help to reduce these health risks substantially.

The effects on safety relate to management of works sites, organisation of the movement of construction machines, movement of road users, handling of explosives in quarries, etc. They may be reduced or prevented through awareness-raising actions, observance of disciplinary rules formalized by the contractor and approved by the Control Mission, adequate signposting on the works sites, and appropriate safety measures in the technical design and construction of the road. Provision is also made for awareness-raising poster boards on road safety. The rehabilitation of the fences of 75 schools and 11 health centres located near the project road will also help to mitigate any negative impacts on safety.

6.5 Fifteen commercial (sheds for petty-trading, mechanical works, sale of fuel, sale of drinks) and social facilities (headquarters of the "zémidjian" or motorcycle-taxi organization, a transporters' union, mosque) will be relocated for safety reasons from the Blitta road junction, which needs to be developed. Most of these facilities are built of makeshift material (straw, adobe brick, wood). The owners were identified during the consultations. A Compensation Commission will assess their property and they will be compensated to enable them to relocate their facilities in accordance with Togolese Law and the applicable standard practices.

6.6 The alteration of the landscape and physical environment by waste and refuse from workers' camps, soil erosion caused by construction machines in quarries and borrow sites will be addressed through special measures explained in detail in Chapter 5. The risk of surface and groundwater pollution due to poor storage and/or approximate handling of hydrocarbons during oil-change for construction engines will also be addressed through special measures detailed in Chapter 5.

6.7 Loss of vegetation, albeit limited, stems from two reasons: (i) clearing of herbaceous and shrub vegetation on both sides of the road to carry out works or create diversions. This will result in vegetation loss along a 2-metre wide band on both sides of the road, making a total surface area of 102 ha along the 255 km road; and (ii) the opening and operation of 69 borrow sites for laterite and 3 quarries. Compensatory reforestation of 102 ha has been recommended on the hillsides, erosion-sensitive areas, as well as borrow sites which have to be rehabilitated. Street tree planting at the entrance and exit of the towns of Atakpamé, Blitta, Sotouboua, Sokodé, Bafilo and Kara has also been recommended. This will not only beautify the roads but also produce shade for pedestrians and motorcyclists.

POTENTIAL IMPACT DURING THE OPERATIONAL PHASE

6.8 **Positive impact:** Means of communication, such as roads and railways, are essential factors of progress. A good transport system is necessary for balanced distribution of resources and for trade in general. The purpose of the road development and maintenance works is to protect the road network, maintain an acceptable level of service for road transport and ensure the comfort and safety of road users. In terms of the economic impact, it is expected that asphaltting of the road and development of feeder roads will have the following major effects: (i) boost trade between this part of the country and other regions, and between Togo and the hinterland countries (Burkina Faso, Mali, Niger); (ii) open up access to and develop agricultural areas and the untapped regional potential of the entire project area; (iii) boost commercial (raise commercial agricultural production volumes), industrial (agro-food) and touristic economic activity; (iv) improve traffic conditions and the safety of road users, and reduce travel time, transport costs and vehicle operating costs; and (v) promote tourism through the much-improved access created by the project. Furthermore, it is noted that cleaning and reshaping of ditches, and construction of outfalls and drains will reduce the risk of flooding in villages along the project road.

The improvement in community living conditions will be felt especially by women, the aged and vulnerable persons, in terms of better travel comfort. Women represent a major segment of the population in the ABSK Project area. They operate informally in the agricultural production (food crops, vegetable gardening) and product processing sector: soyabean, cassava, yam, vegetable, etc. and the marketing of these products. These activities are often financed by mobilizing savings at their level and micro-credits in the area. They are active in markets in the localities situated along the roads. They also operate small restaurants in the villages. They are more exposed to the nuisance generated by traffic on the currently unasphalted roads through these activities. Project implementation will reduce such nuisance and thus be beneficial to health. As traders, women will also benefit from gains in travel time and a substantial reduction in transport costs. The project will improve the health condition and management of pregnant women, and reduce the risk of maternal and infant deaths attributable to home delivery and evacuations done under difficult conditions.

6.9 **Negative impact:** The expected increase in vehicle speed and traffic volume on the asphalted road will generate greater risk of accidents especially as a tendency to speed has already been observed on this road. The risk of accidents is even higher around the Alédjo cliff and in areas

where the communities have established markets along the road. There are 71 socio-educational establishments (primary, secondary and high schools) and 14 health centres (health outposts, peripheral health units, dispensaries) not fenced and located about 50 metres away from the road or even closer. This situation exposes students and patients to the risk of accidents.

Besides, the improvement of the road will lead to an increase in the circulation of heavy road vehicles, especially those transporting hydrocarbons, chemicals and organic pollutants, etc. which in the case of spillage, would constitute a risk factor.. The developed road will promote permanent access to the provincial hospitals in the zones and the local health centres. On the flip side, while the rehabilitation of the road will encourage the intermingling of people and improved mobility, it could fuel the spread of sexually transmitted diseases (STDs), particularly HIV/AIDS. There will be an expected rise in noise pollution (noise and vibrations) resulting from increased traffic after the rehabilitated road becomes operational. The most affected population will be those living closest to the road. On another level, the project's impact on the landscape will be minor and several measures will be proposed to enhance its visual appeal. This impact is of minor importance.

The greatest impact on wildlife during the operational phase of the rehabilitated road is the greater risk of accidents for animals crossing the road due to increased traffic speed. This concerns the small animals and birdlife in the environs of the road. This impact is of minor importance.

During the road's operational phase, there is a risk of pollution of the watercourses and lakes situated along the road. Pollution may result from accidental spillage of transported products (especially hydrocarbons) or waste resulting from daily use of the road. The impact on the soil relates mainly to the risk of erosion. Erosion should be considered as an effect (destruction of the physical environment through gullyng, clogging, and eventually uprooting of the vegetation) as well as a major constraint to the sustainability of this road enhancement scheme.

In terms of air pollution, the improvement of the state of the road will generate increased traffic of heavy trucks and light vehicles. Such increased traffic will generate a rise in exhaust emissions thereby increasing the amount of carbon dioxide (CO₂), the main greenhouse gas. Nevertheless, exhaust gas emissions (especially CO₂) into the atmosphere will also be reduced through: (i) the reduction in travel time; and (ii) the reduction in the number of driving manoeuvres. These factors, although insignificant, will help to mitigate greenhouse effects at the regional level.

Besides these factors, during road works, the following measures will help to combat the effects of global warming: (i) rehabilitation of the burrow sites used for the construction of the highway and feeder roads through systematic planting of trees and revegetation; (ii) compensatory planting of trees on 102 ha distributed in the three regions; and (iii) planting of trees on both sides of the road at the entrance and exits of the main localities such as Atakpamé, Blitta road junction, Sotouboua, Sokodé, Bifalo and Kara.

MITIGATIVE AND LAND REHABILITATION MEASURES

Implementation Phase	Environmental Component	Impact generating Activities	Impact	Type	Mitigative and Land Rehabilitation Measures	Technical specifications/observations
STUDY AND IMPLEMENTATION PREPARATION PHASE	Institutional framework	Inclusion of environmental measures in the contract preparation documents and contract documents	Inclusion of environmental clauses in the bidding documents (BD)	S	Specification of environmental clauses	BD (technical prescriptions and unit price tables, etc.)
			Selection and commissioning of companies		Selection criteria that favour companies concerned about environmental and social aspects	Selection criteria document
			Extension of the guarantee to environmental and social aspects		Formulation of specific points related to the environment	Works guarantee document
			Approval of the companies' settlement plan and implementation of the ESMP		Site selection and adoption of environmentally friendly measures	Settlement plan document
		Inappropriate technical capacity of those responsible for ESMP implementation and monitoring	= Creation of 3 ESMP regional monitoring units = project and ESMP implementation workshops = 2 workshops on environmental challenges for MTP experts and 2 for contracting companies and BC = 2 training courses for 3 experts from the Environmental Unit of the DGTP and of 3 DRTP in ESIA, and of 10 experts in ESMP monitoring		1 day workshop at Sokodé, 40 persons to learn about the challenges of the project, the recommended measures and implementation modalities Training to be conducted in Year 1 and 2 to ensure the rapid utilization of the achievements	
WORKS PHASE	Human environment	Activities in workers' camps	Alteration of the physical environment of project area communities and road users by pollution resulting from waste, sewage and junk	-	Equipment of workers' camps with latrines, septic tanks and garbage bins ..	Sizing and construction based on the estimated number of users
		Operation of construction machines	Inconvenience resulting from noise, vibrations and explosions	-	Provision of ear defenders to construction machine operators and other affected staff	Usual measures taken by companies
		Works	Alteration of the living environment through = Disruption of traffic = Operation of quarries = Dust emission = Smells from the preparation of tar	-	Good installation and signalisation of diversion Watering of diversion dirt roads during the dry season	- Usual measures taken by companies and technical prescriptions in the BD
		Works to widen to widen the right-of-way	Loss of buildings (houses, shops), tombs, farmland, and other facilities	-	Identification and assessment of the buildings and other properties to be expropriated by the local commissions provided for by law Compensation of affected persons	- At the commencement of works on each segment concerned - Activity usually supervised by Commission chairpersons
		Use of explosives for rock breaking in quarries	Fire risk resulting from the handling of explosives	-	Delimitation and signaling of quarries and borrow sites as well as access and exit controls Fire-control equipment, water tanks, means of communication Communicate the blasting plan to the authorities and project area communities	- The usual safety measures taken by companies

Implementation Phase	Environmental Component	Impact Generating Activites	Impact	Type	Mitigative and Land Rehabilitation Measures	Technical Specifications/Observations
WORKS PHASE		Establishment of the works site and arrival of many people	Sexually transmitted diseases (STDs) and AIDS due to the presence of worker's camps and sexual relations between unmarried partners Other diseases caused by lack of hygiene noted in certain worksites which do not respect basic sanitation rules Standing water in borrow sites which can encourage the development of disease vectors	-	Creation of local committees on HIV control IEC actions on HIV/AIDS and STDs HIV awareness-raising poster boards along the road Procurement of condoms for workers Organisation of voluntary screening tests	For the project area community and 2 for the company staff 1 awareness-raising activity 1 training 1 screening test per village and at least 2 tests for company staff
					○ = Establishment of an infirmary at the workers' camp	- Contract provisions on the establishment of company work sites
		Works site organisation, movement of construction machines, circulation of road users during the works	Disruption of traffic Risk of accident related to the works site Fire risk resulting from failure to observe forest protection rules	-	Procurement of safety helmets, gloves and boots for workers Signalisation of works sites and diversions Definition and dissemination of safety rules Fire-fighting equipment	The usual measures taken by companies and works site installation prescriptions
		Utilisation of the road by the various users	Risk of road accident due to poor signage and inadequate preparation of users	-	Signage and safety measures to be included in road design and construction (bicycle paths, boulevard strips, warning devices and speed breakers, parking area in the villages, etc.) Poster boards to raise awareness on road safety	The usual measures taken by companies and contractual measures in the BD
		Execution of the project in the area	Creation of many jobs and substantial income in the project area (600 local workers) Development of petty trading along the project road, especially by women	+ +	Contribution of women and youth to the project in accordance with the law Raising of workers' awareness to save in micro-finance institutions	Encouragement of women to join existing groups and associations Awareness-raising for works site workers organized by micro-finance institutions present in the project area.
		Support the activities of women who are victims of gender disparities	Improvement of the living conditions of women Provision of the means to process soyabean and maize Supporting women's organizations with means of transport (handcarts, wheelbarrows)	+	Provision of the means to process soyabean and maize Supporting women's organizations with means of transport (handcarts, wheelbarrows) and rehabilitation of the tailoring workshop for Sokodé girls	Designation of the beneficiary women's groups by umbrella organizations (ODJUGBO at Atakpamé, PAFED at Sokodé and FUGFK at Kara) with the support of the Regional Directorate for Women's Empowerment

Implementation Phase	Environmental Component	Impact Generating Activites	Impact	Type	Mitigative and Land Rehabilitation Measures	Technical Specifications/Observations
WORKS PHASE	Natural environment	Product storage (cement, hydrocarbons, etc.), operation and maintenance/oil change of construction machines	Alteration of the quality of surface and ground water	-	Appropriate storage of products and in sheds built for that purpose Construction of a concrete platform to recover all used oils	The usual measures taken by companies and prescriptions of the BD
		Operation of the borrow areas and quarries + circulation of construction machines around these sites	Consumption of the natural landscape Soil erosion Alteration of the landscape	-	Rehabilitation of the areas used, the borrow sites and quarries	Leveling of the borrow sites and quarries followed by planting of local tree species with a spacing of 5 m x 5 m.
		Works on the right-of-way	Destruction of the vegetation cover to clear a right-of-way for works on the three roads Felling of trees by workers Poaching by workers in the works sites	-	Street tree planting at the entrance and exits of Atakpamé, Blitta, Sotouboua, Sokodé, Bifalo, Kara: 400 plants per locality Compensatory plantations: 41.2 ha on Lot 1, 31.2 ha on Lot 2 and 29.6 ha on Lot 3 Observance of Togolese forestry and wildlife regulations	<u>Street tree planting</u> - Species: <i>Khaya senegalensis</i> or <i>Delonix regia</i> - Size of plants = 0.8 m - Hitches: 0.60 m x 0.60 m - Spacing between 2 feet: 10 m - Distance between the plantation line and the external edge of the road shoulder: 4 m (but has to be adapted to the realities of the terrain) - Planting date: beginning of the rainy season Protection with local railing - Maintenance: in Year I <u>Compensatory planting and leveling of the borrow sites</u> - Local species, 4m x 4m - Hitches: 0.5 m x 0.5 m

Implementation Phase	Environmental Component	Impact Generating Activites	Impact	Type	Mitigative and Land Rehabilitation Measures	Technical Specifications/Observations
OPERATIONAL PHASE	Human environment	Development of activities in the Plateaux, Central and Kara Regions and with the hinterland countries (Burkina Faso, Mali, Niger)	<ul style="list-style-type: none"> = Opening of access to the regions and several localities = Developement of trade in the region and with neighbouring countries = Better sale of agricultural and handicraft products = General improvement in the income of the population = Greater travel comfort on the project highway and feeder roads = Reduction of vehicle operating costs = Possibility of developing tourism 	+	Community awareness-raising on the possibility of diversifying their source of income, thanks to the project highways and feeder roads	Invitation of micro-finance institutions to raise awareness and educate workers on savings, benefits, conditions, etc.
		Circulation on the road	Risk of accident	-	<ul style="list-style-type: none"> Raise the awareness of users and local communities on the observance of traffic rules Road safety awareness-raising poster boards Institution of road safety mechanisms 	<ul style="list-style-type: none"> Traditional activities of the Road Safety Service - Punishment of repeat offenders by the Gendarmerie and the Police Rigorous traffic control
		Intermingling of people due to ease of movement	Risk of spreading HIV/AIDS and STDs	-	<ul style="list-style-type: none"> IEC and voluntary screening activities to be carried out with the target groups HIV/AIDS awareness-raising poster boards for transporters and all road users 	- Traditional activities of the NACP and NGOs involved in HIV/AIDS control
	Natural environment	Greater pressure on the vegetation due to demand for firewood and on wildlife	<ul style="list-style-type: none"> Steady deterioration of the vegetation and plant life Deterioration of the wildlife resources in the project area 	-	<ul style="list-style-type: none"> Continue awareness-raising on environmental protection and wildlife regulations 	- The usual forest protection activities carried out by environmental services.

Cost of ESMP Measures, Support Actions to Women’s Associations and Infrastructure Rehabilitation

Activities	Cost in CFAF
IEC activities and HIV/AIDS screening	55 060 000
Awareness-raising on road safety	16 500 000
Awareness-raising on environmental protection	4 500 000
Support to women's associations in the project area	62 150 000
ESMP monitoring activities	17 200 000
Capacity-building for ESMP stakeholders	59 600 000
Street tree planting at the entrance and exit of 6 localities	7 830 000
Compensatory tree planting	47 812 500
Rehabilitation of borrow sites and massive rock quarries	176 343 750
Rehabilitation of social infrastructure (schools and health centres)	788 724 200
Compensation costs for the equipment to be displaced at Blitta road junction	2 750 000
Total for ESMP measures and support/rehabilitation actions	1 238 470 450

VII. ENVIRONMENTAL RISK MANAGEMENT

7.1 During the road construction phase, the environmental risk will mainly relate to the accidental spillage of hydrocarbons, bituminous products, explosives and other substances used for road construction. Accident risks will be localised on the works sites and at watercourse crossings. There will also be cases of fire for which safety and training measures have been provided by the competent services, notably civil protection service, gendarmerie, forest guards, etc. These measures concern: (i) awareness-raising and training for workers and *ad hoc* teams on rapid intervention techniques in case of disaster; (ii) safety measures to be observed in dangerous or risky areas; (iii) installation of communication and rapid evacuation equipment; (iv) signing of contracts with health services for workers and health centres; (v) establishment and supply of local pharmacies; (vi) awareness-raising among local communities on the prevention of health risks and road safety; and (vii) organization of epidemiological surveys to assess the project’s impact on the environment and human health.

7.2. Other technical measures concern the development of secure maintenance areas for trucks and storage of polluting products to avoid any accidental spillage that could pollute natural resources. Safety measures will be implemented on-site to: (i) ensure good retention around storage tanks for fuels, oils and tar; (ii) develop pits for disposal of oils, grease and other liquid pollutants from maintenance workshops, installation of vehicle and equipment washing points and loading areas; (iii) manage explosives according to the provisions of the Togolese Mining Code.

VIII. ENVIRONMENTAL MONITORING PROGRAMME

The monitoring programme comprises environmental surveillance and environmental monitoring.

8.1. *Environmental surveillance* is aimed at ensuring that environmental and social impact mitigation and rehabilitation measures are effectively implemented. It will focus on a certain number of elements at different stages of the construction phase. It is important to measure the

degree of implementation of the recommended measures and then seek to establish the compliance of these measures with contractual provisions.

"Construction site installation" stage: approval of the installation plan (dump vat, landfills, storage areas, etc.) and inspection of the workers' camp (latrine, infirmary, waste disposal sites, etc.).

"Works execution" stage: control based on the intervention plan and technical specifications while observing the works site process (work site journal, etc.); verification of materials, zones really affected, quantities implemented; verify the most important points indicated in the ESMP (environmental and social measures, indicators); include an item on "environmental measures" during project meetings with the companies; prepare either an environmental report or an environmental record; ascertain the implementation of environmental measures when accepting the breakdown of payments for works.

"End of works" phase: verify the rehabilitation of borrow sites and quarries, filling of ditches, removal of provisional excavated and backfill material; removal of hulks and debris and general clean-up of the works site; make acceptance of the works conditional on the implementation of all environmental measures; establish a works completion report; conduct an end-of-mission assessment of the actions conducted and gauge the efficiency of the measures and methods used in the works sites to limit the temporary adverse impact of the works and propose a methodological framework applicable to similar works sites (feedback).

Compliance of Measures Implemented

Non-compliant works are characterized by a discrepancy between executed works and contractual obligations on safety and environmental protection. There are: (i) minor non-compliant services whose consequences are reparable (key point); (ii) major non-compliant services whose consequences are hardly reparable (break point).

The proposed actions are of three (3) types: (i) corrective actions aimed at repairing damage to the environment and preventing a repeat of the dysfunction noted; (ii) preventive actions stemming from an assessment of new risks and aimed at averting their emergence; and (iii) supplementary actions in untreated areas.

After each field visit followed by a works site meeting, the head of the environmental surveillance team will, if need be, send a request for compliance to the company concerned.

8.2. *Environmental monitoring:* For the structures responsible for ESMP monitoring, this entails organizing visits with companies during the guarantee period to verify the effectiveness of measures, especially whether each measure: (i) does not, in any way, change the affected element in the receiving environment; (ii) clearly mitigates or corrects the impact of the affected element in the receiving environment; (iii) substantially mitigates or corrects the impact of the affected element in the receiving environment; (iv) worsens or does not clearly reverse the impact of the affected element in the receiving environment; (v) worsens or does not substantially reverse the impact of the affected element in the receiving environment.

IX. PUBLIC CONSULTATIONS AND DISSEMINATION OF INFORMATION

9.1 A number of public consultations must be organized to optimize the positive contributions of various stakeholders involved in project and ESMP implementation. They are presented below:

- i. The project and ESMP implementation workshop which will bring together about forty persons in Sokodé (chosen for its central location). The objective is to inform and sensitize the representatives of structures involved and the affected communities to the challenges of the project and measures retained, to avoid any inconvenience for them as much as possible and optimize the positive effects. This workshop will bring together: the political and administrative authorities of the three regions, heads of the decentralized services of the ministries, representatives of the Ministry of Public Works, Ministry of Environment and Forest Resources, Ministry of Health, police and security forces, professional organizations of transporters, etc.
- ii. Consultations will be organized with about fifteen proprietors of commercial and social facilities at Blitta road junction with a view to their relocation and compensation by the Commission that will be set up.
- iii. Consultations with the communities in the localities situated along the project road on IEC actions related to road safety, HIV/AIDS control and environmental protection. These consultations will be organized by those operating the activities, with the participation of the main contractor, the environment service, council authorities, etc.
- iv. For rehabilitation or development works on quarries and borrow sites, consultations will be held with the company, control mission, Regional ESMP Monitoring Unit and representatives of the localities concerned to determine the intervention modalities and the precautions that need to be taken, depending on the realities of each site to be treated.

X. ADDITIONAL INITIATIVES

In addition to asphaltting of the ABSK road, the project plans to develop about 75 km of earth roads to open up access to project area villages, which are major agricultural producers, but whose momentum is limited for the most part by access problems. In a bid to support women in their daily poverty reduction efforts and improve the living conditions of households, the project plans to assist women's cooperatives in the three regions with socio-economic facilities, including building a market to enable them to sell their agricultural produce. This support will ease the burden of agricultural produce marketing.

XI. CONCLUSION AND RECOMMENDATIONS

11.1 The environmental and social impact assessment conducted along the full length of the Atakpamé-Kara road shows that project implementation will certainly have a negative impact on the physical, biological, socio-cultural and socio-economic environments.

11.2 However, such potential negative impacts will have no major irreversible environmental effects in the immediate vicinity of the project or its environs, since they can be technically and financially contained within reasonable limits, or even offset by adequate corrective measures recommended in the proposed ESMP.

11.3 This summary of the project's potential impact and the ESMP is submitted to the Bank's Board of Directors for information.

XII. REFERENCES AND CONTACTS

12.1. List of Documents Consulted:

- a. Environmental and Social Assessment Procedures for ADB Public Sector Operations, June 2001
- b. ESIA Report on Reinforcement of the Atakpamé-Kara Road, October 2010;
- c. Technical and economic studies on the Blitta-Sokodé-Kara segment and resurfacing of the Atakpamé-Blitta segment of the CU9 Togo community road, environmental report, August 2008;

Any requests for additional information should be referred to:

1. Mrs. M.
2. NDIAYE DIOP, Transport Engineer, OITC.1, Tel.: + 216 71102439, m.ndiaye-diop@afdb.org
3. Mr. J. P. M. KALALA, Socio-economist, OITC.1, Tel. : 216 71103561, j.kalala@afdb.org

Cost of Impact Mitigation and Correction Measures by Lot

ATAKPAME - BLITTA Segment, 103 km (Lot 1), 45 localities				
DETAILED COST OF ESMP MEASURES AND ATTENDANT ACTIONS				
ITEM	UNIT	QTY	UNIT PRICE	AMOUNT
IEC/HIV-AIDS CAMPAIGNS				
Remuneration of IEC team per session	Session	50	60 000	3 000 000
Organisation costs (50 comprising 45 for the communities and 5 for the company staff)				0
Mobilisation of the population	U	50	15 000	750 000
Renting of the hall	U	50	20 000	1 000 000
Renting of chairs (batch of 100 per session)	U	5 000	75	375 000
Renting of public address system	U	50	25 000	1 250 000
Awareness-raising posters (batch of 100 per session)	U	5000	800	4 000 000
Batch of 400 condoms per session	U	50	10 000	500 000
Voluntary HIV screening				0
Reagents	U	50	100 000	5 000 000
Material (alcohol, needles, gloves, cotton)	U	50	8 000	400 000
Banner for all sessions during the campaign	Year	2	35 000	70 000
Monitoring, administrative and management costs				
Monitoring costs	Year	2	300 00	600 000
Secretarial costs	Year	2	500 000	1 000 000
Administration and management costs	Year	2	1 000 000	2 000 000
Awareness-raising poster boards for road users and project road communities	U	10	500 000	5 000 000
TOTAL HIV-AIDS				24 945 000
IEC/ROAD SAFETY CAMPAIGNS				
Awareness-raising on road safety (localities and schools)	Outings	15	100 000	1 500 000
Awareness-raising poster boards	U	10	500 000	5 000 000
TOTAL ROAD SAFETY				6 500 000
ENVIRONMENTAL PROTECTION ACTIONS				
Awareness-raising session	Outings	15	100 000	1 500 000
TOTAL ENVIRONMENTAL PROTECTION				1 500 000

SUPPORT TO WOMEN'S ASSOCIATIONS IN THE PROJECT AREA				
Handcarts for 7 women's cooperatives	U	35	250 000	8 750 000
Grain mill for umbrella organization ODJOUGBO	U	1	1 000 000	1 000 000
Bagging machine for HIV carriers	U	1	100 000	100 000
Grading of the Atakpamé cereal market road (2 km)	FF	1	8 000 000	8 000 000
Capacity-building activities for women's associations	Ft	1	3 000 000	3 000 000
TOTAL SUPPORT TO WOMEN'S ASSOCIATIONS				20 850 000
ESMP MONITORING				
Project and ESMP implementation launching workshop	ft	1	10 000 000	10 000 000
Environmental surveillance missions by Regional ESMP Monitoring Unit	U	16	100 000	1 600 000
Environmental surveillance missions by SEIE and Department of Environment	U	8	200 000	1 600 000
TOTAL ESMP MONITORING				13 200 000
CAPACITY-BUILDING FOR ESMP STAKEHOLDERS				
2 ESIA training sessions for 6 experts from the Environment Unit and 3 DRTPs.	U	2	20 000 000	40 000 000
Training session for 10 experts on ESMP monitoring	U	1	5 000 000	5 000 000
Workshops for public works experts on environmental challenges	U	2	2 000 000	4 000 000
Awareness-raising workshops for companies, BC+NGO	U	2	1 000 000	2 000 000
Logistic support to ESIA Unit: 3 PCs + 3 printers	U	3	1 700 000	5 100 000
Logistic support to ESIA Unit: digital camera	U	1	500 000	500 000
Logistic support to ESIA Unit:	U	1	1 000 000	1 000 000
Logistic support to ESIA Unit: Scanner	U	1	2 000 000	2 000 000
TOTAL CAPACITY-BUILDING				59 600 000
TOTAL 1				126 595 000
STREET TREE PLANTING ON ATAKPAME-BLITTA ROAD (2 localities, 4 km of trees on both sides)				
Seedlings	Trees	800	700	560 000
Poles	U	800	50	40 000
Digging of holes	Hole	800	500	400 000
Supply of compost manure	m3	10	25 000	250 000
Planting of seedlings	U	800	200	160 000
Tree grate	U	800	1 000	800 000
Tending of seedlings for 1 year	U	800	500	400 000
TOTAL STREET TREE PLANTING				2 610 000

COMPENSATORY TREE PLANTING ON 41.2 ha (4 m x 4 m spacing, or 625 feet/ha = 25,750 seedlings)				
Seedlings	trees	25 750	200	5 150 000
Poles	U	25 750	50	1 287 500
Digging of holes	Hole	25 750	200	5 150 000
Planting of seedlings	U	25 750	100	2 575 000
Surveillance/care-taking for 1 year	U	25 750	200	5 150 000
TOTAL COMPENSATORY PLANTING				19 312 500
RESTORATION OF BORROW SITES AND QUARRIES				
Levelling of laterite borrow sites	U	33	2 000 000	66 000 000
Seedlings (33 ha x 625/ha)	U	20 625	200	4 125 000
Digging of holes	Hole	20 625	200	4 125 000
Setting up poles	U	20 625	50	1 031 250
Planting of seedlings	U	20 625	100	2 062 500
Tending of seedlings for 1 year	U	20 625	200	4 125 000
Rehabilitation of massive rock quarries	PM	1	2 000 000	2 000 000
TOTAL RESTORATION OF BORROW SITES AND MASSIVE ROCK QUARRIES				83 468 750
REHABILITATION OF SOCIAL INFRASTRUCTURE				
Rehabilitation of road-facing fences of 30 schools with cement block	ml	5 283	40 000	207 320 000
Rehabilitation of the remaining 3 sides of the fences of 30 schools with hedges	ml	17 991	2 200	39 580 200
Rehabilitation of 21 classrooms in 3 schools	U	21	4 000 000	84 000 000
Rehabilitation of road-facing fences of 5 health centres	ml	550	40 000	22 000 000
Rehabilitation of the remaining 3 sides of the fences of 5 health centres with hedges	ml	1 550	2 200	4 070 000
TOTAL RESTORATION/REHABILITATION OF SOCIAL INFRASTRUCTURE				356 970 200
TOTAL 2				462 361 450
EXPROPRIATION OF TOMBS AND RELOCATION OF FACILITIES				
Relocation of facilities at Blitta road junction	Ft	1	2 750 000	2 750 000
TOTAL EXPROPRIATION				2 750 000
TOTAL 3				2 750 000
GRAND TOTAL Lot 1				591 706 450

ESMP MONITORING

BLITTA - SOKODE SEGMENT, 78 km (Lot 2), 25 localities

DETAILED COST OF ESMP MEASURES AND ATTENDANT ACTIONS

ITEM	UNIT	QTY	UNIT PRICE	AMOUNT
IEC/HIV-AIDS CAMPAIGNS				
Remuneration of IEC team per session	Session	28	60 000	1 680 000
Organisation cost per session (28 comprising 25 for the communities and 3 for the company staff)				0
Mobilisation of the population	U	28	15 000	420 000
Renting of the hall	U	28	20 000	560 000
Renting of chairs (batch of 100 per session)	U	2 800	75	210 000
Renting of public address system	U	28	25 000	700 000
Awareness-raising posters (batch of 100 per session)	U	2 800	800	2 240 000
Batch of 400 condoms per session	U	28	10 000	280 000
Voluntary HIV screening				0
Reagents	U	28	100 000	2 800 000
Material (alcohol, needles, gloves, cotton)	U	28	8 000	224 000
Banner for all sessions during the campaign	Year	2	35 000	70 000
Monitoring, administration and management costs				
Monitoring costs	Year	1.5	300 000	600 000
Secretarial costs	Year	1.5	500 000	750 000
Administration and management costs	Year	1.5	1 000 000	1 500 000
Awareness-raising poster boards for road users and project road communities	U	8	500 000	4 000 000
TOTAL HIV-AIDS				16 034 000
IEC/ROAD SAFETY CAMPAIGNS				
Awareness-raising on road safety (localities and schools)	Outings	10	100 000	1 000 000
Awareness-raising poster boards	U	8	500 000	4 000 000
TOTAL ROAD SAFETY				5 000 000
ENVIRONMENTAL PROTECTION ACTIONS				
Awareness-raising session	Outings	10	100 000	1 000 000
TOTAL ENVIRONMENTAL PROTECTION				1 000 000
SUPPORT TO WOMEN'S ASSOCIATIONS IN THE PROJECT AREA (women's associations along the road)				
Handcarts for 12 women traders' cooperatives	U	12	250 000	3 000 000
Grain mill for 4 cooperatives	U	4	850 000	3 400 000
Wheelbarrows for women's cooperatives	U	20	70 000	1 400 000
Rehabilitation of tailoring training workshop for girls in Sokodé (headquarters of regional directorate)	FF	1	5 000 000	5 000 000
Equipment support (sewing machines)	U	20	100 000	2 000 000
Capacity-building activities for women's associations	FF	1	3 000 000	3 000 000
TOTAL SUPPORT TO WOMEN'S ASSOCIATIONS				17 800 000

Project and ESMP implementation launching workshop	ft	0	10 000 000	0
Environmental surveillance missions by Regional ESMP Monitoring Unit	U	10	100 000	1 000 000
Environmental surveillance missions by SEIE and Department of Environment	U	5	200 000	1 000 000
TOTAL ESMP MONITORING				2 000 000
CAPACITY-BUILDING FOR ESMP STAKEHOLDERS				
2 ESIA training sessions for 6 experts from the Environment Unit and 3 DRTPs.	U	0	20 000 000	0
Training session for 10 experts on ESMP monitoring	U	0	5 000 000	0
Workshops for public works experts on environmental challenges	U	0	2 000 000	0
Awareness-raising workshops for companies, BC+NGO	U	0	1 000 000	0
Logistic support to SEIE: 1 PC + 1 printer	U	0	1 700 000	0
Logistic support to SEIE: digital camera	U	0	500 000	0
TOTAL CAPACITY-BUILDING				-
TOTAL 1				41 834 000
STREET TREE PLANTING ON ATAKPAME-BLITTA ROAD (2 localities, 4 km of trees on both sides)				
Seedlings	Trees	800	700	560 000
Poles	U	800	50	40 000
Digging of holes	Hole	800	500	400 000
Supply of compost manure	m ³	10	25 000	250 000
Planting of seedlings	U	800	200	160 000
Tree grate	U	800	1 000	800 000
Tending of seedlings for 1 year	U	800	500	400 000
TOTAL STREET TREE PLANTING				2 610 000
COMPENSATORY TREE PLANTING ON 31.2 ha (4 m x 4 m spacing, or 625 feet/ha = 19,500 seedlings)				
Seedlings	Trees	19 500	200	3 900 000
Setting up poles	U	19 500	50	975 000
Digging of holes	Hole	19 500	200	3 900 000
Planting of seedlings	U	19 500	100	1 950 000
Surveillance/care-taking for 1 year	U	19 500	200	3 900 000
TOTAL COMPENSATORY PLANTING				14 625 000
RESTORATION OF BORROW SITES AND QUARRIES				
Levelling of laterite borrow sites	U	19	2 000 000	38 000 000
Seedlings (19 ha x 625/ha)	U	11 875	200	2 375 000
Digging of holes	Hole	11 875	200	2 375 000
Setting up poles	U	11 875	50	593 750
Planting of seedlings	U	11 875	100	1 187 500
Tending of seedlings for 1 year	U	11 875	200	2 375 000
Rehabilitation of massive rock quarries	PM	1	2 000 000	2 000 000
TOTAL RESTORATION OF BORROW SITES AND MASSIVE ROCK QUARRIES				48 906 250

REHABILITATION OF SOCIAL INFRASTRUCTURE				
Rehabilitation of the road-facing fences of 28 schools with cement blocks	ml	4 750	40 000	190 000 000
Rehabilitation of the remaining 3 sides of the fences of 28 schools with hedges	ml	14 750	2 200	32 450 000
Rehabilitation of 6 classrooms (Kpeté-Kpeté school)	U	6	4 000 000	24 000 000
Rehabilitation of the road-facing fences of 6 health centres	ml	600	40 000	24 000 000
Rehabilitation of the remaining 3 sides of the fences of 6 health centres with hedges	ml	1 600	2 200	3 520 000
TOTAL RESTORATION/REHABILITATION OF SOCIAL INFRASTRUCTURE				273 970 000
TOTAL 2				340 111 250
GRAND TOTAL Lot 2				381 945 250

SOKODE - KARA SEGMENT, 74 km (Lot 3), 20 localities				
DETAILED COST OF ESMP MEASURES AND ATTENDANT ACTIONS				
ITEM	UNIT	QTY	UNIT PRICE	AMOUNT
IEC/HIV-AIDS CAMPAIGNS				
Remuneration of IEC team per session	Session	22	60 000	1 320 000
Organisation cost per session (22 comprising 20 for the communities and 2 for the company staff)				0
Mobilisation of the population	U	22	15 000	330 000
Renting of the hall	U	22	20 000	440 000
Renting of chairs (batch of 100 per session)	U	2 200	75	165 000
Renting of public address system	U	22	25 000	550 000
Awareness-raising posters (batch of 100 per session)	U	2 200	800	1 760 000
Batch of 400 condoms per session	U	22	10 000	220 000
Voluntary HIV screening				
Reagents	U	22	100 000	2 200 000
Material (alcohol, needles, gloves, cotton)	U	22	8 000	176 000
Banner for all sessions during the campaign	Year	2	35 000	70 000
Monitoring, administration and management cost				
Monitoring costs	Year	1.5	300 000	600 000
Secretarial costs	Year	1.5	500 000	750 000
Administration and management costs	Year	1.5	1 000 000	1 500 000
Awareness-raising poster boards for road users and project road communities	U	8	500 000	4 000 000
TOTAL HIV-AIDS				14 081 000
IEC/ROAD SAFETY CAMPAIGNS				
Awareness-raising on road safety	Outings	10	100 000	1 000 000
Awareness-raising poster boards	U	8	500 000	4 000 000
TOTAL ROAD SAFETY				5 000 000
ENVIRONMENTAL PROTECTION ACTIONS				
Awareness-raising session	Outings	10	100 000	1 000 000
Awareness-raising poster boards at Alédjo reserve	U	5	200 000	1 000 000
TOTAL ENVIRONMENTAL PROTECTION				2 000 000
SUPPORT TO WOMEN'S ASSOCIATIONS IN THE PROJECT AREA (women's organizations along the road)				
Soybean processing complexes	U	8	2 300 000	18 400 000
Batches of 3 wheelbarrows for 10 women's cooperatives	U	30	70 000	2 100 000
Women's capacity-building activities	FF	1	3 000 000	3 000 000
TOTAL SUPPORT TO WOMEN'S ORGANISATIONS				23 500 000
ESMP MONITORING				
Project and ESMP implementation launching workshop	ft	0	10 000 000	0
Environmental surveillance missions by Regional ESMP Monitoring Unit	U	10	100 000	1 000 000
Environmental surveillance missions by SEIE and Department of Environment	U	5	200 000	1 000 000
TOTAL ESMP MONITORING				2 000 000

CAPACITY-BUILDING FOR ESMP STAKEHOLDERS				
2 ESIA training sessions	U	0	20 000 000	0
Training session for experts on ESMP monitoring	U	0	5 000 000	0
Workshops for public works experts on environmental challenges	U	0	2 000 000	0
Awareness-raising workshops for companies, BC, NGO	U	0	1 000 000	0
Logistic support to SEIE: 1 computer + ...	U	0	1 700 000	0
Logistic support to SEIE:	U	0	500 000	0
TOTAL CAPACITY-BUILDING				-
TOTAL 1				46 581 000
STREET TREE PLANTING ON ATAKPAME-BLITTA ROAD (2 localities, 4 km of trees on both sides)				
Seedlings	Trees	800	700	560 000
Setting up poles	U	800	50	40 000
Digging of holes	Hole	800	500	400 000
Supply of compost manure	m ³	10	25 000	250 000
Planting of seedlings	U	800	200	160 000
Tree grate	U	800	1 000	800 000
Tending of seedlings for 1 year	U	800	500	400 000
TOTAL STREET TREE PLANTING				2 610 000
COMPENSATORY TREE PLANTING ON 29.6 ha (4 m x 4 m spacing, or 625 feet/ha = 18,500 seedlings)				
Seedlings	Trees	18 500	200	3 700 000
Setting up poles	U	18 500	50	925 000
Digging of holes	Hole	18 500	200	3 700 000
Planting of seedlings	U	18 500	100	1 850 000
Surveillance/care-taking for 1 year	U	18 500	200	3 700 000
TOTAL COMPENSATORY PLANTING				13 875 000
RESTORATION OF BORROW SITES AND QUARRIES				
Levelling of laterite borrow sites	U	17	2 000 000	34 000 000
Seedlings (17 ha x 625/ha)	U	10 625	200	2 125 000
Digging of holes	Hole	10 625	200	2 125 000
Setting up poles	U	10 625	50	531 250
Planting of seedlings	U	10 625	100	1 062 500
Tending of seedlings for 1 year	U	10 625	200	2 125 000
Rehabilitation of massive rock quarries	PM	1	2 000 000	2 000 000
TOTAL RESTORATION OF BORROW SITES AND MASSIVE ROCK QUARRIES				43 968 750
REHABILITATION OF SOCIAL INFRASTRUCTURE				
Rehabilitation of the road-facing fences of 13 schools with cement blocks	ml	2 750	40 000	110 000 000
Rehabilitation of the remaining 3 sides of the fences of 31 schools with hedges	ml	7 050	2 200	15 510 000
Rehabilitation of 4 classrooms (CEG Bouladé)	U	4	4 000 000	16 000 000
Rehabilitation of the road-facing fences of 3 health centres	ml	370	40 000	14 800 000
Rehabilitation of the remaining 3 sides of the fences of 3 health centres with hedges	ml	970	2 200	2 134 000
TOTAL REHABILITATION OF SOCIAL INFRASTRUCTURE				158 444 000
TOTAL 2				218 897 750
GRAND TOTAL Lot 3				265 478 750