

**Ex-Ante Evaluation**

**Africa Division 4, Africa Department  
Japan International Cooperation Agency**

**1. Name of the Project**

Country: The Republic of Côte d'Ivoire (hereinafter referred to as "Côte d'Ivoire")

Project: Project for the Construction of Three Intersections in Abidjan

Loan Agreement: January 11, 2019

**2. Background and Necessity of the Project**

**(1) Current State and Issues of the Urban Transport Sector in Côte d'Ivoire**

The Greater Abidjan Region, the economic capital of Côte d'Ivoire, serves as the economic hub of the region of the West African Economic and Monetary Union, with the Port of Abidjan handling the largest freight volume in this region. With arterial roads, railroads, ports, and airports playing a vital role in transport of the whole West African region, Abidjan is also important as the point of origin of the international corridors leading to landlocked countries, such as Burkina Faso, the Republic of Mali, and the Republic of the Niger. It was after the period of economic growth in the 1970s, which is called the Ivorian Miracle (during which Côte d'Ivoire enjoyed robust economic growth driven by the export of coffee and cacaos), that the Greater Abidjan Region established its status as the economic hub of the region, growing as a metropolis while attracting a large population from rural areas of Côte d'Ivoire as well as neighboring countries. Although Côte d'Ivoire underwent political instability for about 15 years from the mid-1990s, the increase in the long-stalled investment and in the production as well as export of primary commodities mainly represented by cacaos achieved the rapid economic reconstruction just after the end of instability in 2012. The annual economic growth rate recovered to maintain 8-9% and is projected to be constant at 7.5% on average from 2018 to 2021 (International Monetary Fund).

The development of road infrastructure in Côte d'Ivoire was accelerated by active direct investment in the 1970s; however, the above-mentioned instability stagnated the new construction of roads and the maintenance of existing roads. Meanwhile, the number of registered vehicles in the Greater Abidjan continued to rise at a rate of approximately 10% per year due to the quick urbanization that did not slow down even during the above-mentioned upheaval and the rapid economic growth after the crisis. As a result, road traffic grew significantly. Coupled with this, the deterioration and poor maintenance of roads around the

city caused frequent traffic congestion. Therefore, traffic improvements for sustainable urban development and quality infrastructure development have been identified as important issues in Côte d'Ivoire's National Development Plan for 2016-2020.

In this context, JICA implemented the Development Study Project for the Development of the Urban Master Plan in Greater Abidjan from 2013 to 2015. The Urban Master Plan in Greater Abidjan, developed in this project, was approved by the Cabinet of Côte d'Ivoire in March 2016 and has ever since served as the basic urban development plan for the Greater Abidjan. This Master Plan proposed a total of 118 development projects, including 51 priority projects. Among them, the Government of Côte d'Ivoire gives urgent priority to the improvement of intersections on Boulevard François Mitterrand, a heavy traffic road connecting the city center and the residential area of Riviera. The Project for the Construction of Three Intersections in Abidjan (hereinafter referred to as "this Project") is aimed at constructing grade-separated interchanges (flyovers) at three intersections (Intersections of National Police School, Riviera 3, and Palmeraie) on the Boulevard.

The African Development Bank (hereinafter referred to as the "AfDB") is also planning traffic improvement projects in the Greater Abidjan, including not only the construction of bridges and ring roads but also the rehabilitation of roads near the above-mentioned intersections. These projects are expected to create synergies with this Project, for example by diverting intercity traffic from the city center.

## (2) Development Policies for the Urban Transport Sector in Côte d'Ivoire and the Priority of the Project

This Project conforms to Japan's Country Development Cooperation Policy for the Republic of Côte d'Ivoire (March 2018), which identifies the "promotion of sustainable economic growth" as one of the priority areas, as well as the JICA Country Analysis Paper for the Republic of Côte d'Ivoire (March 2016), which also highlights the "acceleration of economic growth" as an important issue. Moreover, the Greater Abidjan is the starting and ending point of the West Africa Growth Ring Corridor, one of the three major Growth Corridors which the Government of Japan committed to supporting at the TICAD VI. By developing transport infrastructure in this area, this Project can contribute to comprehensive regional development.

## (3) Other Donors' Activities

The AfDB and other donors supported a project to construct the 3rd Abidjan Bridge, a bridge in the city center of Abidjan, under a concession agreement (completed in December 2014) and several other urban transport infrastructure projects in the Greater Abidjan (including projects proposed in the Urban Master Plan in Greater Abidjan). Meanwhile, the World Bank and other donors are considering supporting the construction of the Vridi Bridge to connect Abidjan's city center and industrial zone.

### **3. Project Description**

#### **(1) Project Objectives**

By constructing flyovers for grade separation at three intersections on Boulevard François Mitterrand, which passes through the Greater Abidjan, this Project aims to increase traffic capacity and reduce traffic bottlenecks, thereby enhancing traffic convenience and improving logistics to promote economic stimulation and growth in the Greater Abidjan.

#### **(2) Project Site / Target Area**

The Greater Abidjan (consisting of the Abidjan Autonomous District and its surrounding six communes, with an area of 750 square kilometers and a population of approximately 5.05 million (as of 2014).)

#### **(3) Project Components**

- 1) Civil engineering works: construction of flyovers and branch lanes at three intersections (Intersections of National Police School, Riviera 3, and Palmeraie) and ancillary works (construction of pedestrian bridges, bus stops, etc.)
- 2) Consulting services: procurement support, construction supervision, etc.

#### **(4) Estimated Project Cost (Loan Amount)**

23,990 million yen (loan amount: 16,137 million yen)

#### **(5) Schedule**

January 2019 to May 2023 (total 53 months). This Project will be deemed complete when the service starts (in May 2022).

#### **(6) Project Implementation Structure**

- 1) Borrower: The Government of the Republic of Côte d'Ivoire
- 2) Guarantor: None
- 3) Executing Agency: Road Management Agency (l'Agence de Gestion des Routes; hereinafter referred to as "AGERROUTE")
- 4) Operation and Maintenance Agency: AGERROUTE

(7) Collaboration and Division of Roles with Other Projects and Donors

- 1) Japan's Assistance Activities: The three intersections to be developed in this Project are included in the 118 projects proposed in the Project for the Development of the Urban Master Plan in Greater Abidjan (Development Study from 2013 to 2015). In particular, the intersection of National Police School is included in the short list of 51 priority projects.
- 2) Other Donors' Assistance Activities: This Loan will be provided as parallel co-financing with the AfDB, which is planning to support several infrastructure development projects, including the construction of the 4th Abidjan Bridge to connect the communes of Yopougon and Plateau in the Greater Abidjan, the rehabilitation of ring roads, and the widening of highways (to be completed in December 2021). This Project is intended to improve intersections near the target areas of these AfDB projects.

(8) Environmental and Social Consideration / Poverty Reduction / Social Development

1) Environmental and Social Consideration

i) Category B

- ii) Reason for Categorization: This Project is unlikely to have a significant adverse impact on the environment because it is not classified as a large-scale road sector project as defined in the JICA Guidelines for Environmental and Social Considerations (published in April 2010) and because it neither has any of the sensitive characteristics nor is it located in any of the sensitive areas listed in these Guidelines.

- iii) Environmental Permit: The Environmental Impact Assessment (EIA) report for this Project is expected to be approved by the National Environment Agency (Agence Nationale de l'Environnement) in February 2019.

- iv) Anti-Pollution Measures: Air and noise pollution already exceeded environmental standards before the start of this Project. During the construction period, necessary measures will be taken to prevent pollution, such as sprinkling water, installing noise barriers, and limiting construction hours; therefore, this Project is considered unlikely to have any additional impact. Moreover, in order to control noise pollution after the service starts, necessary measures will also be taken, such as installing noise barriers.

- v) Natural Environment: This Project is likely to have a minimal adverse

impact on the natural environment since the project area is not located in sensitive areas or their vicinity, such as national parks.

- vi) Social Environment: This Project will acquire around 3,296 square meters of land and cause involuntary resettlement of 26 households. These processes will be undertaken based on the Resettlement Action Plan formulated in line with Côte d'Ivoire's relevant procedures and the JICA Guidelines for Environmental and Social Considerations (published in April 2010). At stakeholder meetings, no objection was raised by affected people against this Project.
- vii) Other / Monitoring: In this Project, AGEROUTE will monitor air quality, noise and vibration levels, land acquisition and involuntary resettlement processes, accidents, and other incidents during construction and after the commencement of service.

## 2) Cross-Cutting Issues

- i) Measures for infectious diseases including HIV/AIDS: Because this is a large-scale infrastructure development project that will require workers to gather in a single location for long periods within an area at high risk of HIV infection, it is planned to take HIV/AIDS prevention measures for all the people working on the construction site.
- ii) Consideration for the Handicapped, etc.: Côte d'Ivoire has ratified the United Nations Convention on the Rights of Persons with Disabilities; therefore, this Project is designed to incorporate universal design (to ensure accessibility) in accordance with Article 9 of the Convention.

## 3) Gender Classification: [Not subject] Gender Informed

- (9) Other Important Issues: As a candidate for STEP (Special Terms for Economic Partnership), this Project is expected to utilize Japanese technologies, such as the construction of multiple-span continuous steel box girder bridges with composite decks and the application of high performance coating systems.

#### 4. Targeted Outcomes

##### (1) Performance Indicators (Operation and Effect Indicators)<sup>1</sup>

Indicator	Baseline (Actual value in 2017)	Target (2024) [Expected value 2 years after project completion]
Passenger volume (persons per day)		
▪ Intersection of Police School	102,420	131,900
▪ Intersection of Riviéra 3	133,958	162,900
▪ Intersection of Palmeraie	124,664	155,000
Freight volume (tons per day)		
▪ Intersection of Police School	171,000	220,500
▪ Intersection of Riviéra 3	223,900	272,300
▪ Intersection of Palmeraie	208,300	259,500
Daily intersection traffic volume (PCUs per day)		
▪ Intersection of Police School	55,937	70,000
▪ Intersection of Riviéra 3	73,162	87,000
▪ Intersection of Palmeraie	68,086	82,400
Peak-hour (7 AM) travel time (minutes) (from the Intersection of Gendarmerie School / Insaac (*1) to the Intersection of Akouédo (*2))	9.6	7.5
Peak-hour (7 AM) travel time (minutes) (from the Intersection of Akouédo to the Intersection of Gendarmerie School / Insaac)	29.9	15.8

\*1. The intersection adjacent to the west of the Intersection of Police School

\*2. The intersection adjacent to the east of the Intersection of Palmeraie

- (2) Qualitative Effects: enhancement of comfort during driving on Boulevard François Mitterrand (reduction of traffic congestion, enhancement of driving comfort by improving the evenness of the road surface, etc.), improvements in the roadside environment along Boulevard François Mitterrand, enhancement of traffic safety and convenience on Boulevard François Mitterrand, and logistics improvement and economic stimulation in the Greater Abidjan

##### (3) Internal Rate of Return

Based on the conditions indicated below, the economic internal rate of return

<sup>1</sup> These indicators will be measured as follows.

- i) Passenger, freight, and daily intersection traffic volumes: AGEROUTE will perform a 12- or 24-hour traffic volume survey every year at the following locations:
  - At two locations (in the northbound and southbound directions, respectively) within each of the intersections (under the flyovers)
  - At two locations (in the eastbound and westbound directions, respectively) near the diverge noses to each of the intersections (the ends of the flyovers)
- ii) Peak-hour (7 AM) travel time: AGEROUTE will perform a trial survey every year.

(EIRR) of this Project is calculated at 21.2%. The financial internal rate of return (FIRR) is not calculated because the road is toll-free.

[EIRR]

Cost: Project costs and operation and maintenance expenses (excluding taxes)

Benefit: Reduction in travel time and costs

Project Life: 38 years

## **5. Prerequisites and External Factors**

- (1) Prerequisites: Non in particular
- (2) External Factors: The presidential election scheduled in October 2020 may undermine public security; therefore, efforts will be intensified to collect security information several months before the election.

## **6. Lessons Learned from Past Projects**

The ex-post evaluation of the Irtys River Bridge Construction Project in the Republic of Kazakhstan (evaluated in FY2006) indicated that the construction had been completed 11 months ahead of schedule because the contractor had had abundant experience in constructing similar bridges and because the blanket order of main supports, stiffening girders, cables, and approach road materials had allowed several construction activities to proceed in parallel. On the other hand, it was pointed out that the operation and maintenance of the completed bridge had not been assigned to anyone at the project planning stage nor had it been determined after the commencement of service.

In This Project, qualification requirements will be carefully defined in the tender document so as to select a contractor with abundant experience in similar works while ensuring competitiveness. Moreover, the number and content of procurement packages will be carefully determined (the number is to be set to 1) in order to reduce the construction period. As for operation and maintenance after construction, the road maintenance division of AGEROUTE will be asked to assign someone to take this responsibility, and the consulting services will be defined to include providing suggestions on specific operation and maintenance procedures and frequencies.

## **7. Evaluation Results**

This Project is in line with the development issues and policies of Côte d'Ivoire

as well as the assistance policy/analysis of Japan and JICA. By improving intersections, this Project is expected to enhance traffic performance and thereby accelerate economic growth in the Greater Abidjan. This Project is also deemed to contribute to SDGs 9 (build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation) and 11 (make cities and human settlements inclusive, safe, resilient and sustainable). Moreover, this Project is listed in the Urban Master Plan in Greater Abidjan, which was developed with support from JICA and is being put into practice in collaboration with other donors. Furthermore, this Project is expected to promote regional development by facilitating the development of the Greater Abidjan, which serves as the starting and ending point of the West Africa Growth Ring Corridor. Therefore, it is highly necessary to implement this Project.

#### **8. Plan for Future Evaluation**

(1) Indicators to be Used

Per 4. (1) – (3)

(2) Timing

Ex-post evaluation: 2 years after project completion