

## Côte d'Ivoire

### Road Maintenance Project

Report Date: October, 2002

Field Survey: July, 2001

#### 1. Project Profile and Japan's ODA Loan



**Project Site (Whole Country)**



**Paved road**

#### 1.1. Background

The transportation sector in Côte d'Ivoire is heavily dependent on road transportation, as alternative public transportation is generally underdeveloped. However, this situation was largely unimproved and seemed daunting given the following statistics: out of about 45,000 km of road in Côte d'Ivoire, only about 3,000 km had been paved as of the early 1980s. The vast majority of roads were unpaved or poorly maintained, and such roads were inaccessible during the rainy season. In order to remedy the situation, the Government of Côte d'Ivoire prepared a "Road Sector 10 Year Plan" (1978-87) for: (1) construction of new roads, and (2) maintenance of existing roads by the Road Maintenance Work Group. The World Bank had been assisting this sector through a series of loans for highway projects (6 IBRD loans totaling \$123.3 mil. were committed from 1968 to 77). However, road maintenance capacity had been limited not only by the obsolete maintenance equipment, but also by a shortage of staff trained to carry out maintenance tasks. In addition, due to the severe nature of the rainy season in Côte d'Ivoire, road maintenance had been further hampered. The Government has tried to focus its efforts on rectifying this vicious cycle. In line with the Fifth Socio-Economic Development Plan (1981-85), the Ministry of Public Works and Transport made efforts to strengthen the maintenance capacity through the "Four Year Budget Program for Road Maintenance and Rehabilitation" (1980-83). A Highway Sector Loan (1980,

\$100mil.) from the World Bank was provided to assist this program through road construction/rehabilitation and capacity building (training, research etc.). A Japanese ODA loan was requested for the machinery necessary for the implementation of the “Road Maintenance Work Group Enhancement Program,” a sub-program established under the above Four Year Budget Program.

## **1.2. Objectives**

To strengthen road maintenance capacity by procuring construction machinery and vehicles for nation-wide road maintenance works. It was expected that improvements in road conditions would contribute to more efficient transportation of agricultural products, to traffic safety and to more balanced nation-wide development.

## **1.3. Project Scope**

In this project, various types of road maintenance machinery (bulldozers, graders, loaders and rollers) and vehicles (trucks) were procured and allocated to 321 “Road Maintenance Work-Groups” established nation-wide under the Ministry of Public Works and Transport, for periodic and routine maintenance work. (Details of procurements are shown in the table “Comparison of Original and Actual Scope of the Project”).

The Japanese ODA loan covered the foreign currency required for these procurements.

## **1.4. Borrower / Executing Agency**

The Government of the Republic of Côte d’Ivoire /Ministry of Economic Infrastructure (ex-Ministry of Public Works and Transport)

## 1.5. Outline of Loan Agreement

Loan Amount	5,000 million yen
Loan Disbursed Amount	4,984 million yen
Exchange of Notes	September 1982
Loan Agreement	March 1983
Terms and Conditions	
Interest Rate	4.25% p.a.
Repayment Period (Grace Period)	25 years (7 years)
Procurement	Partially Untied
Final Disbursement Date	March 1989

## 2. Results and Evaluation

### 2.1. Relevance

The project was recognized as a top priority in the Fifth Socio-Economic Development Plan (1981-85) of the Government of Côte d'Ivoire and received international assistance. The assistance for road maintenance was highly relevant and consistent with the country's urgent need to strengthen road maintenance capacity. With economic growth and increased traffic volume, road maintenance needs are still high today.

### 2.2. Efficiency

#### (2.2.1) Project Scope

All machinery and vehicles included in the original project scope have been procured as planned. By utilizing the balance of the loan, additional equipment and vehicles were procured to cope with the increasing need for road maintenance works. (See table "Comparison of Original and Actual Scopes").

#### (2.2.2) Implementation Schedule

The procurement of maintenance machinery and vehicles was carried out in two phases, the first in 1985, one year later than the original plan, and the second in 1989.

### (2.2.3) Project Cost

The total amount of the contracts for the first phase procurements was 3,123 million yen, compared with the original cost estimate of 4,657 million yen (which excludes contingency costs of 1,343 million yen). The cost underrun implies that more than 1,500 million yen was saved through the international competitive bidding process, which enabled this project to procure additional equipment and vehicles, as mentioned above. The total disbursed loan amount was 4,984 million yen, almost the same amount as planned.

## 2.3 Effectiveness

In this project, most of the planned machinery and vehicles were procured in 1985 and allocated to 321 “road maintenance work-groups”. The record of periodic and routine maintenance works (see Table 1) shows that the volume of works increased rapidly from 1985 to 1987, which can be attributed to the machinery and vehicles procured in this project.

However, the volume of works decreased in 1988-91.

After the completion of the project, the volume of routine road maintenance work increased in 1992-1993, and decreased in 1994-1995. On the other hand, the volume of periodic road maintenance work fluctuated during the years of 1992 – 1996. It is difficult to determine the cause of such fluctuation of volume of both maintenance works, although economic conditions the country faced may provide some reasoning.

**Table1: Periodic and Routine Road Maintenance (km/year)**

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Periodic	1,355	5,779	4,606	3,358	1,443	606	405	542	513	1024	387	790
Routine	66,832	124,898	150,805	99,436	77,877	68,000	26,000	58,210	79,670	51,485	46,060	51,851

Source: Ministry of Economic Infrastructure

Note: Project was completed in 1989.

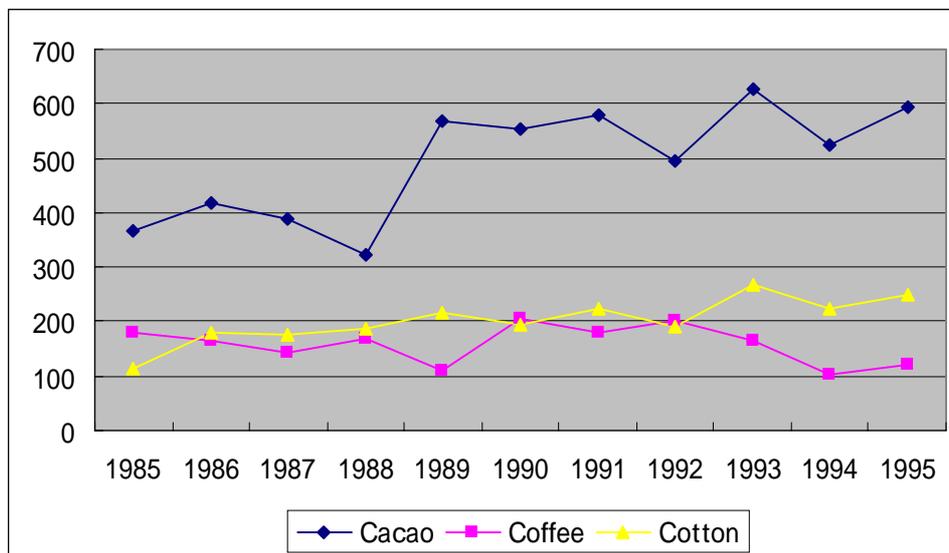
## 2.4 Impacts

### (1) Agricultural Production and Exports

At the time of appraisal, the project was expected to contribute to an increase in overall agricultural production. The data in Figure 1 below show that, while cacao enjoyed a slight

increase in the level of exports, the share of two other agricultural commodities, cotton and coffee, shrank over the 1985-1995 period. This is because some exportable agricultural products are transported from all over the country, mostly by road, to Abidjan Port.

**Figure 1 Exports of Agricultural Products from Abidjan Port (1000 tons)**



Source: National Statistical Institute of Côte d'Ivoire

## (2) Standards of Living and Poverty

Improved access to road transportation is expected to reduce the transaction costs of commerce and industrial activities across regions, thereby improving local standards of living.<sup>1</sup> It is impossible, however, to prove the aforesaid by data acquired during this survey.

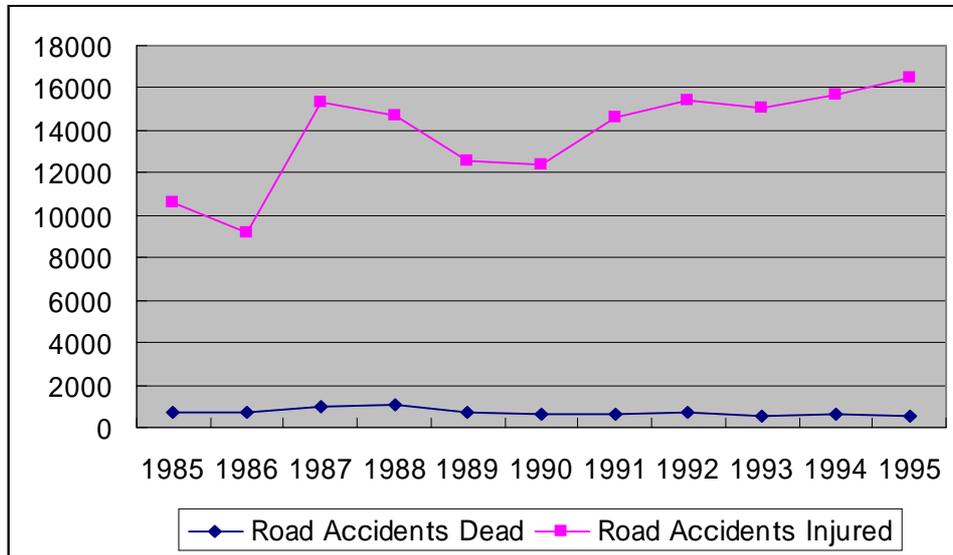
## (3) Traffic Safety

At the time of appraisal, it was expected that the project would contribute to improvements in road maintenance capacity, thereby reducing the number of traffic accidents attributed to bad road conditions. As shown in Figure 2 below, the number of traffic accidents resulting in death remains unchanged; the average number of fatalities is approximately 500 per year. On the other hand, with the increase in traffic volume (from about 320,000 in 1985 to 395,000 in 1990), the number of people injured in traffic accidents has climbed steadily, peaking at over 16,000

<sup>1</sup> Data on regional GDP, an indicator measuring regional standards of living, was not available.

people in 1995. The effect of improved road conditions on traffic accidents anticipated at the time of appraisal has not been evidenced in the data.

**Figure 2 Road accidents in Côte d'Ivoire**



Source: National Statistical Institute of Côte d'Ivoire

#### **(4) Environmental and other impacts**

No resettlement was involved in the project nor were negative environmental impacts reported.

### **2.5 Sustainability**

#### **(1) Operational status of equipment and vehicles**

As reported in a survey conducted by JBIC in 1992 to evaluate the progress of the project, data on the operational status of machinery and vehicles procured in this project are shown in the Table 2 below.

**Table 2: Operational Status of Machineries and Vehicles from 1987 to 1991**

	Plan	1987	1988	1989	1990	1991	Ratio (%) (1990)
<b>Bulldozer-middle size</b>							
Operational	45	45	38	37	33	31	68.9
Under repair/To be repaired	-	-	7	8	12	14	31.1
<b>Grader</b>							
Operational	158	80	154	156	145	143	90.5
Under repair/To be repaired	-	0	4	2	13	15	9.5
<b>Loader</b>							
Operational	25	25	23	22	16	16	64.0
Under repair/To be repaired	-	0	2	3	9	9	36.0
<b>Roller</b>							
Operational	57	35	53	38	35	35	66.0
Under repair/To be repaired	-	0	4	15	18	18	34.0

Source : Ministry of Economic Infrastructure

Note : The planned number of Graders and Rollers was greater than in the “Comparison of Original Plan and Actual Scope”. It is presumed that the Executing Agency adjusted numbers after the commencement of procurement in 1985.

As of 1991, it is thought that the number of machinery and vehicles in operation is not as low as the ratio in Table 2 indicates. However, as Table 1 above shows, the volume of periodic and routine maintenance was declining, particularly after 1990. According to the executing agency, the decline is attributable to the lack of government funds for maintenance and to the rapid decrease of the number of engineers doing maintenance work.

The most recent data available regarding the operational status of machinery and vehicles procured in this project were for the year 1998 (Table 3), after the road maintenance organization had been privatized under the Transport Sector Adjustment Program. In accordance

with this program, road maintenance activities administered by the government became the responsibility of the private sector. According to the data, although many graders and rollers were still operational (i.e., after 10 years in operation), the majority of the other machinery and vehicles were not operational.

**Table 3: Operational Status of Vehicles and Equipment as of 1998**

Items/Activities	In Operation	Non-Operational
Bulldozer-middle size	7	38
Grader	67	88
Loader	5	20
Roller	21	33
Truck (6 m3)	0	120
Truck (3.5 t)	0	80
Truck PRB (3.5 t)	0	60
Truck PRB (Fuel carrier)	0	7
Trailer (35 t)	0	3
Truck (Equipment carrier)	2	5
Water Carrying Truck	0	19
Break Truck	0	132
Pick up Truck	0	127

Source : Ministry of Economic Infrastructure

## **(2) Privatization of maintenance activities**

As mentioned above, the road maintenance organization was privatized in 1998 under the Transport Sector Adjustment Program. All road maintenance machinery and equipment owned by the public sector was sold to the private sector, which then leased it out to local sub-contractors for maintenance activities. The Ministry of Economic Infrastructure (former Ministry of Public Works and Transport) and its Department of Roads and Highways continue to hold budgetary and planning authority over routine and periodic maintenance. It has been pointed out by various local contractors, however, that payments for contractors' maintenance services have occasionally been left in arrears.

### **3. Lessons Learned**

It is difficult to judge the effectiveness of projects, like this one, whose scope is procurement of equipment without numerical targets/indicators. It was, therefore, important to set up operation/effect indicators, agreed to by the concerned parties, prior to the implementation of the project, so that more direct effect/impact can be measured. The ability to collect such indicators should have been carefully checked and determined.

### Comparison of Original and Actual Scope

Item	Plan	Actual
1. Project Scope- Procurement		
Bulldozer	45	As planned
Grader	80	155
Loader	25	As planned
Roller	35	54
Truck (6 m3)	50	120
Truck (3.5 t)	80	As planned
Truck PRB (3.5 t)	60	As planned
Truck PRB (Fuel carrier)	7	As planned
Trailer (35 t)	3	As planned
Truck (Equipment carrier)	7	As planned
Water Carrying Truck	0	19
Break Truck	0	132
Pick up Truck	0	127
2. Implementation Schedule		
Shipment & Delivery of Equipment	-1984	First Phase (original scope): -1985 Second Phase (additional): 1986-89
3. Project Cost (ODA loan portion)		
*Local currency portion of the project was covered by the Borrower.	5,000 million yen	4,984 million yen