ICR Review

Operations Evaluation Department

Report Number : ICRR10952

1. Project Data:		Date Posted : 07/30/2001		
PROJ ID : P035765			Appraisal	Actual
Project Name : Highway		Project Costs (US$M)	36.9	36.65
Country : Armenia		Loan/Credit (US$M)	31	30.18
Sector(s): Board: TR - Roads and highways (91%), Central government administration (9%)		Cofinancing (US$M)	2	.78
L/C Number : C2776; CP913				
		Board Approval (FY)		95
Partners involved :		Closing Date	12/31/1999	12/31/2000

Prepared by :	Reviewed by :	Group Manager :	Group :	
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2. Project Objectives and Components

a. Objectives

1. Prevent deterioration of the Armenian national road network and reduce transport operating costs by expanding maintenance operations, including bridge and tunnel rehabilitation .
2. Help develop an institutional framework adapted to the requirements of the road sector of a market economy .
3. Expand the resource base for road maintenance by encouraging appropriate road user charges .
4. Assist in developing an effective private road construction and engineering industry .
5. Improve road safety.

b. Components

Total project costs of $36.65 million comprised:

1. **Periodic road maintenance (70%)** - surface dressings, overlays and reconstruction of portions of the 1440 km Interstate road network.
2. **Repairs of priority road bridges and tunnels (4%.)**
3. **Materials support for routine and winter maintenance (7%.)**
4. **Equipment and spare parts (11%)** - essential for improving road maintenance operations .
5. **Consultant services and training (6%.)** for institutional strengthening of AR (the Armenian Road Directorate) including reshaping organizational and operational procedures, road research, safety and the introduction of cost-benefit analysis to determine maintenance priorities . TA also provided training in contracting procedures for the newly privatized/corporatized road construction industry .
6. **Project administration (3%) -** covering equipment and office support costs for the Project Implementation Unit (PIU.)

c. Comments on Project Cost, Financing and Dates

The SAR assumed financing of $ 15 million from the Kuwait Fund, which was subsequently cancelled for reasons unrelated to the project. France, The Netherlands and the EU committed $ 2 million in grants of which $780,000 are accounted for in the ICR (data for the Human Resources and Highway Survey are not included .) The Bank approved an additional $16 million loan in June 1997 to complete the original project and substitute for the Kuwaiti funding .

3. Achievement of Relevant Objectives:

Items 1,2 and 3, corresponding to components 1,2 and 3, support objective 1:

1. Deterioration of roads was reversed and the International Road Roughness Index (IRI) reduced from 6.6 to 4.5 m/ km. This involved a major shift from using surface dressings to the more expensive overlays, resulting in a reduction in total length from a planned 1428 to 628 km. This however still resulted in an increase in ERR from 38 to 44%, while the percentage of project funds allocated to maintenance increased to 70%.
2. The major 2000 m Pushkin Tunnel was renovated but the total bridge and tunnel component was cut back through application of NPV/ERR, which showed maintenance to be the priority. A bridge inspection and management system were set up using an EU grant .
3. The needed supplies of bitumen and fuel for routine and winter maintenance were procured during the first 2

years using IDA funds - little or no funds were available from the government budget. The economic rate of return on pothole repair was very high (in excess of 100%.)

4. The project's greatest achievement was institutional strengthening of the AR. An extensive grant-supported training program created greatly increased capacity for standards and procedures (now consistent with the West), use of HDM (the Bank's highway design maintenance software), implementing a Pavement Management System and competitive contracting for periodic maintenance. An effective monitoring indicator, annual surveys of the IRI, has been extended to 1300 km of roads (of a national total of 7,800 km, 1440 being Interstate Highways.) A streamlined PIU was established with a small staff of highly qualified and better-paid professionals - by completion the AR's direct hire staff had been reduced from 4000 to 50 persons to carry out planning, contracting and supervision of works.
5. Financing sources for road maintenance were changed - the general tax on total revenues of companies was dropped and replaced by a 10% increase in fuel excise tax, a vehicle registration tax, heavy vehicle fees and a transit tax. The level of taxation is still not sufficient to cover the full cost of road maintenance, and the road user charges go directly to general revenue. A proposal to establish a Road Fund is under development.
6. The project successfully nurtured a private sector contracting industry. Of 41 District Road Maintenance Offices, 19 were privatized and the balance converted to Joint Stock Companies, which receive no Government support. Equipment, which was rented out to private contractors, was supplied by a Government owned joint-stock company, but despite variation of the rental rates it proved impossible for the plant pool operations to attain commercial viability.
7. A 5-year road safety program was developed and implementation has started. Accident statistics have been revised to international standards and are now broadcast on radio and television.

4. Significant Outcomes/Impacts:

1. The project created a road administration that has the capacity to plan and carry out future road works with a greatly improved efficiency and quality.
2. New technologies were introduced and an effective and efficient private road construction industry was established.

5. Significant Shortcomings (including non-compliance with safeguard policies):

1. There were frequent delays in counterpart and regular budget financing. The charges and the amount of transfers from the Ministry of Finance are still not adequate to maintain the entire road network.
2. Government interference in the governance of the AR affected performance negatively and the problem was only resolved by outside IDA intervention.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Highly Satisfactory	Highly Satisfactory	
Institutional Dev.:	Substantial	Substantial	
Sustainability:	Likely	Likely	
Bank Performance:	Highly Satisfactory	Highly Satisfactory	
Borrower Perf.:	Satisfactory	Satisfactory	This rating is a composite of Highly Satisfactory for the implementing agency and marginally satisfactory for Government
Quality of ICR:		Satisfactory	

NOTE: ICR rating values flagged with '*' don't comply with OP/BP 13.55, but are listed for completeness.

7. Lessons of Broad Applicability:

1. Overall road costs can be reduced by 50% or more compared to Soviet Period operations.
2. Pooling equipment and renting it out to private contractors requires demand estimation. Selectivity in the types of equipment is necessary, if it is to be utilized at a level permitting commercial sustainability for the government-owned supplier.

8. Assessment Recommended? ○ Yes ● No

9. Comments on Quality of ICR:

Satisfactory. Comparison with baseline data (on road safety and traffic flows for instance) would have made the evaluation exemplary. Nonetheless data, models and monitoring indicators were used very effectively to plan and manage the project.