



1. Project Data:		Date Posted : 08/15/2001	
PROJ ID: P005216		Appraisal	Actual
Project Name: Il-Tehran Drainage	Project Costs (US\$M)	95.6	111.4
Country: Iran	Loan/Credit (US\$M)	77.0	77.0
Sector(s): Board: UD - Flood protection (95%), Central government administration (5%)	Cofinancing (US\$M)		
L/C Number: L3479			
	Board Approval (FY)		92
Partners involved :	Closing Date	12/31/1998	12/31/2000
Prepared by :	Reviewed by :	Group Manager :	Group:
Robert C. Varley	William B. Hurlbut	Alain A. Barbu	OEDST
2. Project Objectives and Components			
a. Objectives			
The objectives of the project were to :			
<ol style="list-style-type: none"> 1. Provide storm water drainage to divert flood waters away from flood -prone areas . 2. Transfer new technology for the construction of tunnels . 3. Strengthen the institutional capacity of the Tehran Municipality through technical assistance for project planning and implementation and for sound municipal finance . 			
b. Components			
The project costs of \$111.4 comprised:			
<ol style="list-style-type: none"> 1. Construction of 3 tunnels and Third Outlet Pipe (71.4%) - for (a) the Khayam Tunnel Contracts 1 & 2 (44%); and (b) the Third Outlet Tunnel/Pipe (27.4%) 2. Retention Reservoir and Northern Head Branches (20%) 3. Land Acquisition (1.2%) 4. Equipment and Vehicles Including Tunnel Boring Machine or TBM (3.5%) 5. Technical Assistance (4%) - for (a) project management/construction supervision; and (b) municipal revenue and financial management. 			
c. Comments on Project Cost, Financing and Dates			
The project was significantly modified due to the SAR's underestimation of the costs of the original design, and the need to reroute a tunnel and relocate the reservoir to avoid the Shrine of Imam Khomeiny . The lowest of the original three bids for Khayam and Third Outlet Tunnels was \$ 140 million, twice the appraisal estimate. The project was then split into three contracts and some additional works, to replace components removed from the Bank -financed projects, were added. Equipment became more important than anticipated at appraisal and the Municipality of Tehran bought the TBM directly since the cost was too high for the contractors .			
3. Achievement of Relevant Objectives:			
<ol style="list-style-type: none"> 1. All the works envisaged have been constructed, either with Bank funding or financed by the municipality from its own funds. The works provide storm water drainage for the flood -prone areas and the area protected has been enlarged by the addition of Northern branches of the drains . 2. The technology was successfully transferred with the second tunnel constructed using a TBM . The machine is currently being used by Iranian contractors for construction of other tunnels in the Tehran area . 3. The third component was partially achieved . The main institutional achievement was in the area of project planning and management. The Municipality created the KHARIZ AB Company to be responsible for all drainage works in Greater Tehran. The objectives of the sub-component for revenue base and financial management studies were not achieved and the studies were not even carried out . 			
The EIRR was 20% compared to 23% at appraisal. The real economic rate of return is probably much higher as only directly measurable cost savings related to damage of crops and buildings, disruption, clean -up manpower and assistance to the affected population were counted as benefits . While health (reductions in both morbidity and			

mortality rates), environmental and potential agricultural production benefits are not included . These benefits are substantial and the mitigation of social, environmental and health hazards, as much as the direct impact on economic activities, was the main motivation for the project . A financial rate of return of 28% was calculated but there is no corresponding SAR estimate .

4. Significant Outcomes/Impacts:

1. The project has made a large difference above and beyond its measurable economic impact and benefitted 50,000 low-income families in the historical town of Shahr-e Rey and a further 200,000 people in the Khayam area whose lives and economic livelihood have been protected .
2. The successful operation of KHARIZ, with its own budget and autonomy (also part of the Project Implementation Unit), and its impressive performance in the implementation of a complex project, is a major institutional achievement. There was also considerable success in the objective of transferring expertise in using the TBM. KHARKIZ is now the technical and planning arm of the Municipality for storm water . Valuable experience has been acquired on procurement of large equipment and supervision of foreign contractors .
3. Costs were successfully contained by the redesign and the delay of 2 years and rebidding were reasonable . The project also managed the risks associated with flooding during construction very well .
4. The project contributes directly to improved water resources management in the Tehran area . Storm water runoff can now be diverted to the West where there is the possibility of recharging the aquifer through the river bed. The Khayam Tunnel may also be used to convey excess groundwater from the southern areas of Tehran to irrigate about 10,000 hectares of fertile arable land about 30km South West of the city .

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

1. The bank's decisions at appraisal were not judicious - the serious underestimate of tunnel construction costs delayed the project by two years .
2. Although the foreign partner, for the ICB bid on tunnels, proved to be competent, the Iranian partner left the joint venture at the early stages of construction .

6. Ratings :	ICR	OED Review	Reason for Disagreement /Comments
Outcome :	Satisfactory	Satisfactory	
Institutional Dev .:	Modest	Substantial	The institutional achievements in the areas of planning and construction management were "Highly Satisfactory", outweighing the "Unsatisfactory" for the municipal finance sub-component.
Sustainability :	Likely	Likely	
Bank Performance :	Satisfactory	Satisfactory	
Borrower Perf .:	Satisfactory	Satisfactory	
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. Institutional improvements require careful diagnosis of the bottlenecks and agreed measures for change should be reasonable, and consistent with the institutional capacity of client organizations . Their implementation and expected results usually take longer than the time horizon of a single project .
2. Bank help in creating joint ventures would be appreciated by the Borrower .

8. Assessment Recommended? Yes No

9. Comments on Quality of ICR:

Satisfactory. With the following reservations:

- The ICR does not adequately justify its sustainability rating of "Likely." On page 6 an improvement in financial operations of the Municipality is identified as important because it "would have a significant impact on the project's sustainability." On page 7, technical sustainability is affirmed but not considered a sufficient basis for sustaining the facility - "the longer term sustainability of the facility also depends on adequacy of funds allocated by the Municipalities for maintenance and replacement." The next sentence, concluding that "Sustainability of the project is therefore rated as likely", seems something of a non-sequitur.
- The ICR blames the Borrower's reluctance for failure to carry out the municipal finance component . But this may be inadequate ICR reporting as the Borrower points out that they did try, but that there were difficulties due to the high price, and small number of bidders capable of doing the work . Moreover the "*the Municipality of Tehran had itself carried out a large part of the scope of work anticipated for this project .*"
- More effort could have gone into extracting lessons .

