



<b>1. Project Data:</b>		<b>Date Posted :</b> 08/16/2001	
<b>PROJ ID:</b> P005462		<b>Appraisal</b>	<b>Actual</b>
<b>Project Name:</b> Second Large Scale Irrigation Improvement Project	<b>Project Costs (US\$M)</b>	367.3	199.77
<b>Country:</b> Morocco	<b>Loan/Credit (US\$M)</b>	215.0	107.8
<b>Sector(s):</b> Board: RDV - Irrigation and drainage (75%), Central government administration (15%), Roads and highways (10%)	<b>Cofinancing (US\$M)</b>	54.3	30.7
<b>L/C Number:</b> L3587			
	<b>Board Approval (FY)</b>		93
<b>Partners involved :</b> German KfW, French AFD	<b>Closing Date</b>	12/31/2000	12/31/2000
<b>Prepared by :</b>	<b>Reviewed by :</b>	<b>Group Manager :</b>	<b>Group:</b>
George T. K. Pitman	John R. Heath	Alain A. Barbu	OEDST
<b>2. Project Objectives and Components</b>			
<b>a. Objectives</b>			
<p>The global objective to make large-scale irrigation more efficient, cost-effective and sustainable was to be achieved through achievement of five specific objectives : (i) raising the efficiency of water distribution through rehabilitation of infrastructure and improved operation, (ii) preserving public investments through appropriate replacement and maintenance, (iii) increasing recovery of O&amp;M costs from beneficiaries and by improved public -sector management; (iv) improving irrigation techniques and on -farm investments to enhance water use efficiency, and (v) ensure environmental protection. Agricultural development aspects were to be supported through a separate and parallel Bank-financed project that is still ongoing.</p>			
<b>b. Components</b>			
There were three:			
<ul style="list-style-type: none"> <li>● <b>Infrastructure Rehabilitation</b> (planned \$229.8 million, actual \$180.0 million). Reconstructing 52,000 ha of irrigation distribution systems covering six regions, upgrading five main canals /pipelines, rehabilitating diversion weirs and canals serving 20 traditional flood irrigation schemes in the Sahel regions covering 21,000 ha, improving subsurface drainage in three schemes covering 19,000 ha, replacing equipment in 58 pumping stations covering 130,000 ha in six regions, and rehabilitating 1,060 km of feeder roads in four regions.</li> <li>● <b>Institution Building and Policy Reforms</b> (planned \$79.3 million, actual \$62.8 million). Covering nine Regional Authorities for Agricultural Development (ORMVA) this included provision of equipment, vehicles, buildings, TA and training to improve management of irrigation schemes and enable the Directorate of Rural Equipment to coordinate project implementation and monitor ORMVA performance. Policy reforms were to cover water tariff restructuring and increased water charges, defining public -private water delivery contracts, public sector management improvement plans, a long -term strategy and plan for systematic rehabilitation of irrigation infrastructure, and restructuring of the institutional framework for large -scale irrigation.</li> <li>● <b>On-farm Water use Efficiency Improvements</b> (planned \$58.2 million, actual \$ 21.3 million). This would include pilot demonstrations of improved irrigation techniques (including sprinkler and drip systems and land levelling ) upgrading of water metering systems and rehabilitation of on -farm irrigation systems on about 20,000 ha on a 70:30 farmer/government cost sharing basis . In addition, the project would promote formation of 400 water user associations as a vehicle for on -farm demonstrations and investments, and to participate in O&amp;M of public infrastructure.</li> </ul>			
<b>c. Comments on Project Cost, Financing and Dates</b>			
<p>While not formally revised, the project components were drastically downsized three times following government's financial crisis. Overall the reduction in budget was 25% (\$103.2 million) but the greatest impact was on the budget for on-farm water use efficiency improvements which was cut by 64%. By completion, the Bank had cancelled \$ 87 million in four tranches.</p>			
<b>3. Achievement of Relevant Objectives:</b>			

The project achieved some of its major relevant objectives but with significant shortcomings (the ICR states "achievement of project objectives is considered partially satisfactory").

- The first objective, to enhance the efficiency of water distribution in large -scale irrigation systems through rehabilitation, was satisfactorily achieved with minor shortcomings .
- The second objective, to preserve investments in large -scale irrigation through improved system maintenance, was only partially achieved but with major shortcomings .
- The third objective, increasing recovery of O&M costs from beneficiaries and by improved public -sector management was only partially achieved .
- The fourth objective, to improve on-farm water-use efficiency through improved irrigation techniques, was achieved but at a much smaller scale and for fewer innovations than planned because of the budget cut .
- The fifth objective, to improve environmental protection, was only partially achieved reflecting the low priority accorded to it by ORMVAs.

#### **4. Significant Outcomes/Impacts:**

- Infrastructure rehabilitation objectives achieved about 70% of targets which was on par with the reduced funding available.
- As a result of infrastructure improvements, including rehabilitated pumping stations, and improved operations, water supplies to farmers were improved. The return on investment (based on a sample of projects) yielded an average ERR of 25% ranging from 12% for full rehabilitation to 50% for partial rehabilitation. Actual improvements in water use efficiency at the network level, however, could not be determined (with one or two notable exceptions) because of the lack of reliable water metering systems .
- Following significant Bank pressure and temporary suspension of disbursement, government eventually increased water tariffs, and farmers' contribution to initial investment cost was raised to 40% in 1997.
- The project increased the number of water user associations from 157 to 445. But the majority are non-operational because of a top-down approach to their formation . In addition where farmers had few problems with water supplies, they had no incentive to maintain WUAs .
- A long-term rehabilitation/modernization plan has identified investment priorities for the sector and forms part of the five year plan (2000-05); however, only a few OMVRAs have produced their own plans .
- An Environmental Monitoring Plan was developed in 1995 and implemented - but it needs further fine-tuning before it becomes operationally useful for M&E purposes .
- MIS systems were installed in five ORMVAs but they are underutilized for decision -making except in two regions where they have had a marked impact on efficiency . Beneficiary feedback shows a large divergence of views about MIS effectiveness, a significant concern being a lack of budget to implement reformed methods of working.
- A large training program of about 15,000 staff/weeks for ORMVA staff was implemented but there are few impact indicators to judge its effectiveness even though staff were very happy with the training they received .

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

- There was some resistance to the irrigation reform agenda in parts of government and among some line agencies, particularly involvement of the private sector and water user associations . As a consequence, there was almost no progress towards planning the restructuring of the institutional framework for large -scale irrigation.
- As a result of water fee collection through the land tax department (who had few incentives and were outside the project's influence) and a series of severe droughts, the amount collected fell from 71% in 1990-95 to 56% in 1996-2000 - In consequence maintenance expenditures per ha declined by 31% between 1995 and 2000.
- Policy reforms were generally only partially implemented because of unresolved difficulties in the legal and regulatory environment of OMRVAs and other government stakeholders, and their lukewarm acceptance of the need for large-scale irrigation reform. Only two of nine OMVRAs signed management improvement plans with government but these remain to be implemented . While government prepared standard water sale contracts these have been applied by only a third of the OMRVAs and their effectiveness remains unproven . Deficient terms of reference for specialist consultants and high costs also compounded the difficulties of implementation and led to cancellation of some system operation studies - those that were completed remain to be implemented. Two OMRVA system maintenance studies were completed and one is yielding good results; the others were postponed due to high costs .
- While government budget transfers for O&M remained almost constant over the life of the project, and thus declined in real terms, yet so too did the amount spent on O&M . Thus the full O&M demand could only have been met through increased government transfers which were not available .
- The project was spread over too many regions (repeating the known mistakes of earlier projects ) which undermined its effectiveness, should have considered alternatives institutional models for institutional strengthening at appraisal and underestimated the difficulties of cross -agency cooperation.
- Beneficiary involvement in system diagnosis, design and implementation of project interventions was mixed - being high for the hydrant-supplied component and low for some WUAs where farmers were happy with service provision.

6. Ratings :	ICR	OED Review	Reason for Disagreement /Comments
<b>Outcome :</b>	Satisfactory	Moderately Satisfactory	The project only achieved some of its major objectives, covered too many systems of variable readiness for reform, some of the better performing elements (e.g.hydrants) were drastically cut-back and progress towards beneficiary management and private sector involvement was modest.
<b>Institutional Dev .:</b>	Modest	Modest	
<b>Sustainability :</b>	Likely	Non-evaluable	Uncertain would be better. This is because of the unresolved O&M budget problem and government's uncertain ability to continue subsidizing the sector . Balancing this is government's willingness <i>ex post</i> to consider public-private partnerships and devolution of authority to autonomous agencies .
<b>Bank Performance :</b>	Satisfactory	Satisfactory	
<b>Borrower Perf .:</b>	Satisfactory	Satisfactory	
<b>Quality of ICR :</b>		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:

- An ambitious reform agenda has to be well targeted . This requires that more attention be given looking at alternative institutional arrangements to achieve reform, phasing and discriminating between those directed at commercialization and those at better management of public goods . A step-wise approach such as those embodied in LILs may be more successful for many elements of a reform program .
- As this project shows in the case of tariff reform, major incentives are created for the Borrower when Bank management links disbursement to progress on agreed reforms .
- Effective M&E of irrigation system performance and water use efficiency requires installation of system -wide flow measurement facilities.
- Community participation (in this case water user associations) cannot be mandated - it has to be nurtured by careful attention to the (sometimes conflicting) interests and incentives for the differing stakeholders to become involved. Sufficient time has to be allowed for institutions, including dispute resolution mechanisms, to evolve .
- The use of WUAs as a blueprint for participation will not always work when farmers are happy with the quality of water service and the use of alternative forms of stakeholder organization - for example commercially based water districting - may be more appropriate.

#### 8. Assessment Recommended? Yes No

**Why?** It would be salutary to examine the reasons for the failure of the reform agenda given the long experience and substantial investment by the Bank in Morocco's irrigation sector . Indeed, the ICR recommends a study for this purpose (para 8.1). It would also provide an opportunity to review how effective the link is between this project and the complementary agricultural support project .

#### 9. Comments on Quality of ICR:

Quite thorough. It would also be easier to judge achievements of project outcomes if they were systematically tabulated against SAR targets. The development partners' and borrowers review comments were particularly helpful in understanding the difficulties faced by this project . A more complete presentation of the economic analysis would have been helpful too.