ICR Review

Operations Evaluation Department

Report Number : ICRR11005

1. Project Data:		Date Posted : 08/21/2001		
PROJ ID : P005836			Appraisal	Actual
Project Name :	Land & Water Conserv	Project Costs (US$M)	47.64	30.12
Country :	Yemen	Loan/Credit (US$M)	32.8	28.76
Sector(s):	Board: RDV - Irrigation and drainage (60%), Forestry (20%), Agricultural extension and research (10%), Central government administration (10%)	Cofinancing (US$M)	3.2	n.a
L/C Number :	C2373			
		Board Approval (FY)		92
Partners involved :	UNCDF	Closing Date	06/30/1999	12/31/2000

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2. Project Objectives and Components

a. Objectives

To strengthen sustainable agriculture through :

- institutional and technical developments in irrigation and forestry;
- initiating a program of water resource monitoring and regulation in the agriculture sector;
- improving water use efficiency in irrigated agriculture;
- conserving key indigenous forest areas, accelerating tree planting and extending soil and water conservation; and
- establishing approaches for watershed management and terrace stabilization .

b. Components

The project had three major elements :

1. **Water management (65% of cost)**:
   - provision of groundwater conveyance pipes to improve groundwater conveyance efficiency from existing tubewells and equipment for irrigation demonstration units on farmers' fields;
   - gabion baskets and other materials for improving traditional spate irrigation systems; and
   - equipment, vehicles and staff allowances for implementation units in the regional agencies .
2. **Forestry and land management (15 % of cost)**:
   - training, equipment, vehicles and staff allowances for centrral and regional agencies to support a program of indigenous woodland management and rehabilitation;
   - upgrading the network of tree nurseries and promoting tree planting, sand dune fixation and coastal sand stabilization; and
   - planning and executing pilot programs in watershed management and terrace stabilization .
3. **Institution strengthening (20% of cost):**
   - technical assistance, training, facilities, equipment, vehicles and staff allowances for central and regional agencies for strengthening the respeective Directorates general of the Ministry of Agriculture and Water Resources (MAWR);
   - establishing a system of water monitoring and regulating its use in irrigated agriculture; and
   - strengthening technical capabilities in irrigation agronomy, engineering and forestry .

c. Comments on Project Cost, Financing and Dates

Project cost was estimated at $47.6 million at appraisal. Turmoil following the Gulf War and internal instability resulted in delays and slow implementation. At a country implementation review in 1995 some components were scaled back and some further trimming was done at the Mid-Term Review in 1997. Bulk purchasing also resulted in some cost savings. At completion, after an 18 month extension, final costs were $30.1 million. Perhaps inevitably, the cuts impacted the field operations rather than the institutional support . Final expenditure on both water management and forestry components were just below 50% of the appraisal estimate, while expenditure on the institutional component was 123% of the initial estimate.

3. Achievement of Relevant Objectives:

Although performance varied among activities, the projects overall development objectives have been achieved . Under the groundwater irrigation component, the targets in terms of area under improved conveyance efficiency were exceeded (10,500 ha compared to 8,500 ha). The reduction in water use for irrigation due to improved conveyance is estimated as 20 percent of the pre-project level. Pilot plots focused on pressurized systems and required a financial contribution from farmers. The latter were initially sceptical and only 66 pilot plots were established compared to the goal of 165. However, performance and later response were encouraging . The physical goals for spate schemes were only 50 percent achieved, largely because of the impact of unusually heavy rainfall that reconfigured wadis. In many cases this meant that the required barrages were larger than planned .

Nurseries supplied almost one million tree seedlings as planned . These were used for a range of purposes with satisfactory results, such as community efforts to protect fields from water or wind erosion, sand dune stabilization and around public facilities. Watershed management efforts (small check dams, bank protection and terrace rehabilitation) were concentrated in poor communities where farmers contributed labor .

A substantial program of training and TA support was undertaken . In most cases, TA and training were of high quality, as reflected in studies and reports and in assessments by counterpart staff and trained staff . The support for irrigation agronomy, including the strengthening of field units is reported to have been the most succesful activity . The impact of some activities has, however, been limited by institutional problems, such as low salary levels that reduce retention and the failure to develop counterpart capacity to TA inputs .

4. Significant Outcomes/Impacts:

At the outset, it had been expected that farmers would use improved efficiency of water supply to increase area planted. However, it appears that they have placed a greater emphasis on reducing use (i.e. pumpage). If this is a permanent change, it would have the beneficial effect of limiting drawdown of aquifers, some of which were under threat. The project has familiarized farmers on a wide scale with the improved technologies and demonstrated their effectiveness.

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

Although the activities initiated by the project are relevant and substantial progress was made in upgrading skills, etc. in the relevant agencies, it appears likely that this effort may be vitiated by public resource constraints, as trained personnel leave the public sector and farmers are unwilling to risk significant investments without some public support.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Moderately Satisfactory	While many physical targets were met, there were significant shortfalls. More importantly, while the project was intentially based on only partial cost recovery in order to spread new technologies, evidence presented in the ICR suggests that farmers and others are still not willing to cover the full costs of the activities on their land. For example, project experience has shown that, in the case of the tree seedlings, cost recovery has significantly reduced demand. Given constraints on public finance, this puts in question the viability of the approach underlying the project.
Institutional Dev .:	Modest	Modest	
Sustainability :	Likely	Unlikely	The ICR notes that the impact of the significant effort in institutional development will be reduced by loss of trained staff due to low salary levels in the public sector and the inability in some cases to establish counterpart capacity to match TA inputs. Also, although farmers have shown interest in the improved irrigation technologies, their application requires significant cost sharing by government, something that has not happened so far. Ongoing budget

			constraints make it unlikely to happen in the future.
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:

- Project design and implementation arrangements should be kept simple . In particular, care should be taken to ensure that, if a steering committee is to be established for project activities, the committee will be in a position to effectively coordinate the activities
- The leverage available under a single project of limited size to drive the policy agenda in such a crucial sector as water policy should not be overestimated .

8. Assessment Recommended? ● Yes ○ No

Why? Yemen is an under audited country . The ICR finding that farmers were reducing pumping, rather than expanding area irrigated, as a result of water savings deserves further investigation .

9. Comments on Quality of ICR:

The report does a good job of concisely conveying the essence of the relatively complex project and of its outcome . Its principal shortcomings are that it does not include either a project financing table or the aide -memoire of the ICR mission. Without the project financing table we do not know the status of counterpart financing or co -financing at completion. In addition, given the dependence of much of the project's activities on continued support, the treatment of the transition arrangement to regular operations was rather cursory .