



1. Project Data:		Date Posted : 08/20/2002	
PROJ ID: P009964		Appraisal	Actual
Project Name: Haryana Water Resources Consolidation Project	Project Costs (US\$M)	483.4	474.4
Country: India	Loan/Credit (US\$M)	258.0	206.6
Sector(s): Board: RDV - Irrigation and drainage (47%), Water supply (46%), Sub-national government administration (7%)	Cofinancing (US\$M)	0	0
L/C Number: C2592			
	Board Approval (FY)		94
Partners involved : NA	Closing Date	12/31/2000	12/31/2001
Prepared by :	Reviewed by :	Group Manager :	Group:
Peter W. Whitford	George T. K. Pitman	ERROR: Server error: Entry not found in index	OEDST

2. Project Objectives and Components

a. Objectives

- a) to introduce water resources planning (including contingency planning for drought) and management which addresses current and future intersectoral needs;
- b) to enhance agricultural productivity and diversification, and to improve equity;
- c) to assure sustainability of the environment; and
- d) to improve the Haryana Irrigation Department (HID)'s capabilities in all water related functional areas.

b. Components

The project covered both the Bhakra Canal and Western Yamuna Canal systems, through the following four main components:

- a) **Rehabilitation** of the existing canal and drainage systems, and selective lining of canals and water courses (planned, US\$87.8 million, actual US\$99.8 million);
- b) **Modernization** of canal and drainage systems and water courses, construction of the Hathnikund Barrage, and construction/ extension of minors (planned US\$184.1 million, actual US\$162.6million);
- c) Upgraded **Operation and Maintenance (O&M)** of the water distribution and drainage system (planned US\$177.7 million, actual US\$199.15 million); and
- d) **Institutional Support** for administration, data collection, planning, design, beneficiary participation, research and training (planned US\$33.8 million, actual US\$ 12.8 million).

Two major changes were made following the 1997 MTR: a new component - Agricultural Intensification Program (AIP) - was introduced; and, with support from AIP, the formation of Water Users Associations (WUAs) was given greater emphasis. A further change occurred in March 2001, when US\$48 million in anticipated savings in the Credit was allocated to a new category for Gujarat earthquake emergency reconstruction. *As there is insufficient information in the ICR to reach any judgement on the quality of this component, it is excluded from this Evaluation Summary.*

c. Comments on Project Cost, Financing and Dates

There were wide changes in the scope and cost of individual sub-components (generally earthworks increased and structures and lining decreased) - for reasons that are inadequately explained in the ICR, and major shortfalls in the policy, institutional and research activities. However, given the nature of this kind of project - a policy package grafted onto a package of civil works compiled from numerous field offices - wide differences between appraisal and ICR quantities are almost inevitable.

Timely implementation was identified as the most significant risk at appraisal and project closing was two years behind schedule. A nine-month delay in Planning Commission approval (inexplicably not a condition of negotiations or Board presentation); there was insufficient counterpart funding due to pay increases and a dropoff in government revenue due to prohibition, as well as slow release of land. However, counterpart funding improved considerably

during the last two years of implementation.

3. Achievement of Relevant Objectives:

a) Water Resources Planning and Management , the objective was ambitious and the results were mixed . The State Water Plan was finalized but five years later than planned, a State Water Policy has been drafted (but not yet adopted), a State Water Resource Council, chaired by the Chief Minister, has been established, with a secretariat body, groundwater legislation has not been introduced, though ad hoc measures for some critical areas has been introduced; recovery of O&M costs was largely achieved; the ICR does not discuss whether power tariffs were raised to economic levels, as anticipated at appraisal . It appears that a new and less intrusive role of the State in water management is gradually being adopted by the government, though not at the speed rather optimistically foreseen at appraisal.

b) Enhanced Agricultural Productivity, Diversification and Equity . The project used two means to achieve this objective: rehabilitation, modernization and improved O&M of the canal and drainage systems; and, improvement of water courses and their "turnover" to WUAs. In general, the second objective was realized but not the first . Impact studies show that the water course activities improved incomes and equity, with a modest impact on diversity to higher-valued crops. The AIP was an important factor in this achievement. The ICR re-evaluation of the rate of return of the project ERR was 14% compared with 18% at appraisal. (albeit through highly simplified methods).

c) Environmental Sustainability . HID has adopted an Environmental Policy, providing for environmental assessment of proposed projects. Groundwater exploitation is being restricted in so-called grey/dark zones. However, the more ambitious target of comprehensive groundwater regulation has not been achieved .

d) Institutional Capability . A reorganization of HID to separate construction and O&M responsibilities and to create specialized units for groundwater, environment, coordination etc . was achieved in the first year of the project and is reportedly working well. HID has begun shedding surplus staff. Merger of the groundwater and command area development agencies with HID, forecast at appraisal, did not occur . The management information system was still underway at the time of the ICR.

4. Significant Outcomes/Impacts:

- formation of 1,280 WUAs (appraisal target 1,700) with beneficiary participation and "turnover" of water courses to 754 to them at time of ICR.
- increase of area under irrigation and yields (area increased by 15-25% in sample watercourses).
- successful implementation of AIP .
- construction of Hathnikund Barrage to replace an 125 year old structure in imminent danger of collapse .
- finalized State Water Plan (but five years late) and GOH has implemented a consolidated Action Plan for stakeholder groups to optimize use of water .
- established State Water Council, with secretariat body .
- restrictions on groundwater development in critical zones .
- decrease in waterlogging and salinity (but the ICR cites no evidence).
- HID reorganized and O&M activities are now separated from construction and a maintenance culture is being established.
- recovery of O&M costs (90%).

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

- Several action promised in the Letter of Development Policy were never implemented and, in the absence of dated covenants this left the Bank with little leverage on policy / institutional questions. The large construction program did not prove to be a sufficient incentive to induce policy /institutional reform.
- The management information system was greatly delayed and the M&E system envisaged at appraisal appears not to have been carried out.
- HID gave low priority to modernize and computerize its budgetary and accounting system and this was not completed at closing.
- Comprehensive groundwater legislation is still lacking and the merger of the groundwater and command area development agencies into HID was deferred . In contrast to successful tubewell privatization in adjacent Punjab, Pakistan, no attempt was made here and the component for public sector tubewell rehabilitation was dropped, as was research on sprinkler and drip irrigation .
- the planned impact assessment study was not done by the time of ICR
- very broadbrush methods of economic evaluation were used at appraisal and ICR; rates of return should therefore be interpreted with some caution; economic analysis was not used for sub -project selection. While ICR economic returns show that water course lining and formation of WUAs was well justified (27%), as was the Hathnikund Barrage (19 to 240%, depending on assumptions), and drainage and flood protection (15%), about a quarter of project costs were spent on rehabilitation and modernization of canals and structures which gave only an ERR of 9%.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Moderately Satisfactory	The policy package performance was

			mixed.
Institutional Dev .:	Modest	Modest	
Sustainability :	Likely	Likely	Even so, OED is concerned that underfunding of O&M will re-occur, leading to another cycle of rehabilitation etc, particularly given the inadequate cost-accounting system and patterns established under earlier projects .
Bank Performance :	Satisfactory	Satisfactory	Innovations introduced at MTR and strong supervision outweighed poor appraisal .
Borrower Perf .:	Satisfactory	Unsatisfactory	The government failed to implement or hugely delayed several key elements of its commitments under the Letter of Development Policy .
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:

- Privatization of irrigation assets (through WUAs) can be successfully carried out even in South Asia, with its enormous inherited burden of inefficient government organizations and procedures; such WUAs may need continued nurturing after project closure .
- Borrower actions to improve water use efficiency, allocation between competing uses and management of water quality will only occur under force major conditions .
- Where policy and/or institutional reform is a major project objective, the Bank should look for key actions to be taken prior to negotiations or Board approval rather than relying on a Letter of Development Policy; an APL might also be appropriate in such circumstances .

8. Assessment Recommended? Yes No

Why? Several Water Resource Consolidation projects were planned as a break from poor past performance and this project should be included in a cluster assesement of these projects to test efficacy of the new approach.

9. Comments on Quality of ICR:

It should have gone further in analyzing the adequacy of O&M funding, on which a major part of the project justification depends and used more robust methodology for economic evaluation . More discussion on the slow progress on several important institutional issues would have been helpful .