



1. Project Data:		Date Posted : 07/20/2005	
PROJ ID: P010476		Appraisal	Actual
Project Name: Tamil Nadu WRCP	Project Costs (US\$M)	315.6	245.2
Country: India	Loan/Credit (US\$M)	282.9	219.8
Sector(s): Board: RDV - Irrigation and drainage (33%), Agricultural extension and research (22%), Other social services (19%), Water supply (15%), Sub-national government administration (11%)	Cofinancing (US\$M)	0	0
L/C Number: C2745			
	Board Approval (FY)		95
Partners involved : None	Closing Date	03/31/2002	09/30/2004
Prepared by :	Reviewed by :	Group Manager :	Group:
Christopher D. Gerrard	John R. Heath	Alain A. Barbu	OEDSG

2. Project Objectives and Components

a. Objectives

The project had four primary objectives :

- (1) Introduce water resources planning by river basins across all uses of water
- (2) Improve agricultural productivity through modernization and completion of irrigation systems, upgraded water management and farmer participation
- (3) Assure sustainability of water infrastructure and the environment
- (4) Improve institutional and technical capability for managing the state's water resources .

b. Components

The project had five components at appraisal . Expected and actual projects costs are in parentheses .

- (a) System Improvement and Farmer Turnover (SIFT) (US\$143.1 million at appraisal, \$141.6 million actual)
- (b) Scheme Completions (US\$76.8 million at appraisal, \$67.6 million actual)
- (c) Water Planning, Environmental Management and Research (US\$21.0 million at appraisal, \$8.9 million actual)
- (d) Institutional Strengthening (US\$17.7 million at appraisal, \$21.8 million actual)
- (e) Land Acquisition and Economic Rehabilitation (LAER) (US\$3.9 million at appraisal, \$5.3 million actual).

An irrigated agriculture intensification program (IAIP) was added to the SIFT component at the time of the mid-term review in November-December 1998. Two additional sub-components were also added to the SIFT component in 2002 -- for completion of works begun under the Bank's Dam Safety Project, and for rehabilitation of 620 non-system water tanks.

c. Comments on Project Cost, Financing and Dates

Project closing was extended three times -- twice by one year and then by an additional six months -- to allow for completion of all targeted physical construction activities, and to permit the project to support elections for territorial constituencies and water users' associations (WUAs). Implementation progress was extremely slow during the first two years due to the change of state government in the 1996 elections immediately after project approval, due to disruptions associated with the reorganization of the Water Resources Organization (WRO), and due to lack of experience with Bank procurement procedures . Out of the total IDA credit of SDR 181.9 million, SDR 20 million was canceled in 2002 and the undisbursed balance of 8.8 million after project closing.

3. Achievement of Relevant Objectives:

This was an ambitious project involving both wide-ranging reforms and substantial physical investments . It was based on the recognition that efforts and cost recovery without service improvement are mostly unsuccessful, and infrastructure improvements without attention to O&M and farmer participation are physically, financially, and institutionally unsustainable . It aimed to put in place planning by river basins across all uses of water and a

participatory approach to irrigation management involving stakeholders in O&M responsibilities . Although the project grew out of a long dialogue between the Bank and the Central and State Governments, the lack of knowledge and experience of these new concepts among the implementation staff led to understandable initial problems in implementation. Nevertheless, the project achieved its four primary objectives with only a few shortcomings, and even exceeded some targets .

(1) **Achieved** : Water resource planning is now based on river basins . Macro-level plans have been completed for 16 out of the 17 consolidated river basins in Tamil Nadu, and micro-level plans for 5 basins .

(2) **Achieved** : Agricultural productivity has improved by rehabilitation and system improvement, organization of farmers, and turnover of O&M to WUAs in 16 major and medium irrigation systems, 25 minor schemes, and 620 non-system irrigation tanks. Farmers participating in the IAIP obtained 18 percent higher paddy yields than non-participants, and used about 25 percent less water than non-participants .

(3) **Partially achieved** : The sustainability of the water infrastructure that was rehabilitated and improved under the SIFT and scheme completion components is considered likely due to the paradigm shift that has taken place in water resources management under the project . However, the Government of Tamil Nadu still has to take some administrative and legislative measures to make the River Basin Boards and associated technical secretariat permanent and operational. Also, WUAs, which are now responsible for maintaining canals serving less than 700 ha and structures in the project area, have only recently been formed, and will require considerable training and practical guidance to perform their O&M responsibilities in a satisfactory way .

(4) **Achieved** : There has been considerable improvement in the institutional and technical capability for managing the state's water resources. The WRO is now well established as the water resources wing of the Public Works Department (PWD), with four regional Chief Engineers designated as River Basin Managers . River Basin Boards and their technical secretariat have been formed . Specialist units for Plan Formulation, Design Research and Construction Support, Operation and Maintenance, and the State Ground and Surface Water Data Center have been established. A Water Planning Unit has been established in the Institute of Water Studies . A special unit for LAER has been established in the PWD Secretariat .

Based on the two construction components (SIFT and scheme completions) and the LAER component -- representing about 88 percent of project costs -- the overall ERR of the project was 13.4 percent compared to 17 percent at appraisal. The main factors underlying the lower ERR were longer construction periods, higher costs, delayed benefits, and lower prices for the dominant crop, paddy .

4. Significant Outcomes/Impacts:

All targeted physical construction activities were completed, as well as additional construction activities undertaken and completed. The number of beneficiaries due to the project is estimated at 740,000 -- 8 percent more than appraisal estimates.

The project led to some institutional achievements that were not envisaged at appraisal, such as the passing of the Groundwater Act, the passing of the Tamil Nadu Farmers' Management of Irrigation Systems Act 2000, and the formation of River Basin Boards (the first of their kind in South Asia).

The Land Acquisition and Economic Rehabilitation component was an innovative component involving rehabilitation grants and asset maintenance grants to project-affected persons, enabling them to maintain a similar or better standard of living while the land acquisition payments were processed . The costs of the component exceeded appraisal estimates due to an increased land area to be acquired and more project -affected persons than estimated at appraisal.

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

Better coordination across eight line departments as well as several government and university institutions involved in water resources management is still needed . The borrower referred to this as "the need of the hour" in its comments on the draft ICR.

The severe drought which affected large parts of the state from 2001 to 2003 adversely affected the monitoring and evaluation procedures put in place . Baseline surveys were carried out and impact evaluation studies were carried out but due the prevalence of the drought, regular updating of information was not possible . This has led to some of the economic analyses at ICR to be based on reasonable projections .

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Satisfactory	
Institutional Dev .:	Substantial	Substantial	

Sustainability :	Likely	Likely	The ICR acknowledged some issues in this regard in section 4.13 and 6.1, which should be revisited in the recommended PPAR. See section 3 (3) above.
Bank Performance :	Satisfactory	Satisfactory	
Borrower Perf .:	Satisfactory	Satisfactory	
Quality of ICR :		Exemplary	

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

7. Lessons of Broad Applicability:

This innovative project has a number of lessons :

- (1) The long period of pre-project policy dialogue and the long, detailed project preparation established a strong strategic direction for the project. This helped sustain the project in the face of two changes of state governments in 1996 and 2001.
- (2) A dramatic paradigm shift in the government's approach to managing a key resource such as water requires extensive training of government staff, WUAs, farmers, and even of NGOs involved in delivering such training . Training needs are often underestimated and training capacities of NGOs to provide training often overestimated .
- (3) Irrigation projects should include an agricultural support services component at the outset in order to enhance their economic impact.
- (4) The separate component for land acquisition and economic rehabilitation worked well for acquiring land, but faced some limitations in rebuilding the livelihoods of those adversely affected by the project .
- (5) Revision of water rates involves not only political will but also assurances that revenues so raised will result in improved services.
- (6) Involving intended beneficiaries in planning, implementation, and monitoring can improve transparency, instill a sense of ownership, and reduce conflicts .
- (7) Covenants which have little direct relevance to project activities -- such as that to reduce subsidies to the Tamil Nadu Electricity Board -- should not be imposed on projects . These are difficult to enforce, and take considerable time and effort of both Bank and Borrower with negligible returns .

8. Assessment Recommended? Yes No

Why? This was one of three Bank-supported water resources projects approved in three Indian states after the Bank adopted an integrated water resources management approach to the water sector in 1993. An assessment of the three projects together -- the other two being in Orissa and Haryana -- may permit valuable lesson learning.

9. Comments on Quality of ICR:

The ICR covers all the bases. It is well-written and forthright about project weaknesses -- such as the failure to include an agricultural component in the initial design and the initial delays in implementation -- as well as its achievements. Annex 3 on the analysis of the economic costs and benefits of the project is particularly thorough .