

Assessment of Financial Viability of Irrigation Cooperatives in Dharoi Irrigation Project in Northern Gujarat A New Approach

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Introduction

- Irrigation management transfer, or turnover, has become a widespread strategy in Asia, Africa, and Latin America.
- To provide sustainable and adequate financing for operation and maintenance of irrigation and of facilitating investment in the required rehabilitation or upgrading of irrigation systems.
- It often includes demand management to encourage efficient water allocation and imposes new externalities on irrigation systems in terms of environmental performance.

Evolution of PIM in Gujarat

- Joint Irrigation Management (JIM) initiated in Mohani by Irrigation Dept. in 1978.
- AKRSP initiated PIM in 1991; GO-NGO visit Philippines
- National PIM workshop in 1992, State level workshop in 1993; High Level Working Group in 1994
- PIM introduced by Government Resolution of 1st June 1995; (Initial 13 Pilot Project)
- Task Force on Accelerating PIM in Gujarat in 2001.
- 0.40/7.43 lakh ha
- Changes in Secretary; different priorities; decline in interest and funds

(Source: AKRSP, 2007)

Irrigation Cooperatives

- As part of the PIM policy laid down by the GoG in 1995, the government as well as NGOs had initiated a number of Water Users' Associations (WUAs) registered as Irrigation Cooperatives (ICs).
- The success of these farmers' institutions depends on various factors-social, administrative as well as financial.
- Though most of the ICs are still in their early stages, some can be identified as being financially strong, and some as weak.
- It is likely that most of the failed co-operatives are weak in their financial position.
- Thus, financial viability and self-sufficiency is a must for a co-operative to be sustainable and meet the regular Operation & Maintenance expense

Incentives

- Canals to be rehabilitated prior to transfer, irrigation cooperatives contributing 10%.
- 1/3rd of the estimated cost given as advance.
- Simplified procedures for the purchase of material and quality control when works entrusted to irrigation cooperatives.
- After repair work the system is handed over to ICs after signing of MoU.
- The ICs which come forward to contribute Rs. 60 per hectare are provided Rs. 540 per ha. (State and Central Government contributing Rs. 270 each) as functional grant.

Incentives

- The functional grant is placed in a fixed deposit and interest accrued is used for running the society.
- Each farmer has to pay a membership fee to become member of the society.
- Water charges decided by Government but collected by ICs. They retain 50% of collection for maintenance and management of canals and deposit 50% with Government.
- ICs are empowered to decide water charges above the Government rate and retain 100% of collection of excess charges.

Costs of PIM

- Policy change, Initial high cost; senior staff involvement
- Community organising and training @Rs.3 lakh/year/project for 3-4 years
- **Rebuilding costs** @3-10,000/hectare
- Time-consuming; convincing irrigation staff at all levels; large number of exposure visits, trainings.
- Changing habits of 40 years, contractor nexus

Financial Viability

- Ability to generate enough income to meet its regular and emergency expenses and at the same time invest adequately in the maintenance & repairs of canals (*Anil Shaw,2004*)
- **Imperative and vital for the overall smooth functioning and sustainability of this institution.**
- There are few studies specifically dealing with the financial functioning of ICs.

Why?

- The social dynamics (Initial stages) are very important.
- The **social processes** and the **dynamics** between the various stakeholders ensure a sound initiation of any institution.
- However, as the institutions start functioning they **need money** to cover their running cost.

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- Thus, the **financial working issue** gains much importance along with the social dimension.
- **The IC should be able to generate some surplus for coping with the unforeseen requirements.**
- Apart from operation & maintenance (O & M) funds with the ICs; issue of water cards like ration cards, and diversify into profit generation activities like agro-forestry and development of community grazing land can be cited here. ([World Bank,1991](#))

ICs in Dharoi Irrigation Project....

- **Collaborators:** Water Resource Department, GoG, and Development Support Centre, supported by National Dairy Development Board (NDDB).
- The **Development Support Centre** is in the process of organizing and formation of **216** Irrigation cooperatives in three irrigation schemes namely Dharoi (45,000ha.), Guhai (7200 ha.) and Mazam (4500ha.) covering **56,700 hectares** of command area by March 2008.

Progress as on 31-03-2006

Cultivable Command Area	No. of ICs
Less than 50 hectare	17
50- 150 hectare	39
More than 150 hectare	68
Total	124
Area	25141 hectare

Objectives of the Study

- Identify and analyze the critical factors for financial success/ failure of canal irrigation co-operatives in the context of agro climatic conditions
- Assess the capacity of the farmers to pay and get benefit of Irrigation Cooperatives using simulation and scenario testing model.
- Elicit the conscious steps taken by farmers for ensuring the financial strength of these I Cs
- Develop recommendations for nurturing and enhancing financial viability of the Irrigation Co-operatives along with adequate care of Maintenance & Repair of canals.

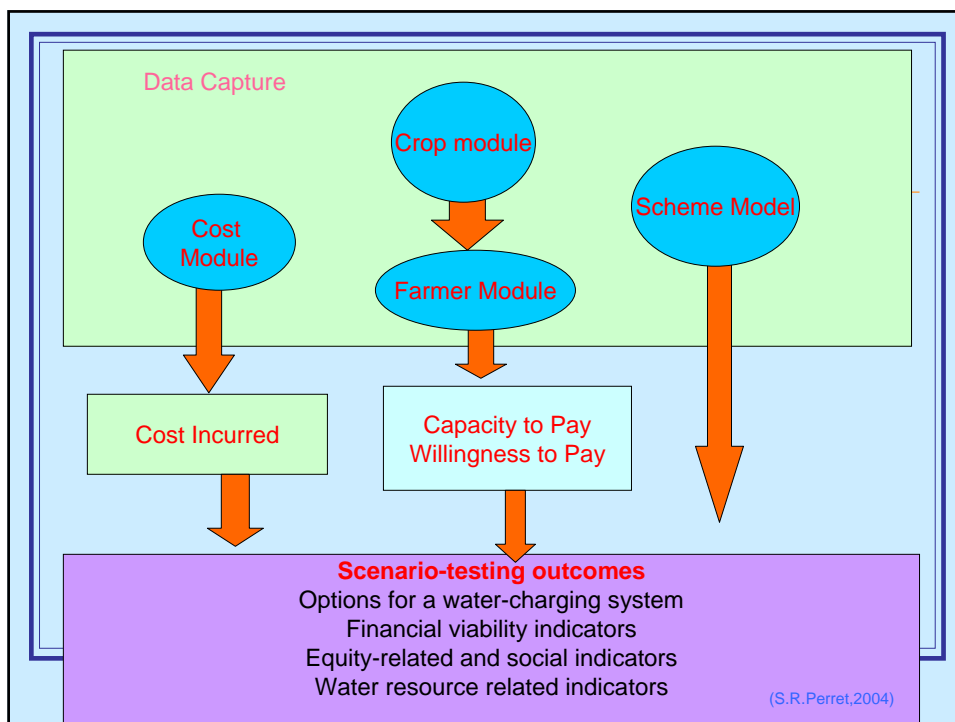
Present status of Financial Viability

- a) **Analysis of Expenditure**
 - Maintenance & Repairs expenditure
 - Salary of secretary, operator and other staff
 - Administrative expenditure
 - Minimizing expenditure through voluntary labour
- b) **Analysis of Income**
 - Government assistance for
 - Maintenance
 - Management
 - Additional water rate collection
 - Interest from balance at bank Income from additional services
 - Others-such as penalty
- c) **Other factors which affect income are**
 - Quantum of water available
 - Area irrigated
 - Recovery

Factors Affecting Financial Viability

- Command area per unit length of canal and under each IC
- Number of Minors
- Water availability
- Efficient Water Distribution
- Subsidy/Rebate
- Average Additional Water charges.
- Voluntary Labor
- Diversification
- Administrative Expenditure

Conceptual Framework for Analysis



Crop Module

Kharif	Rabi	Hot weather crop after rabi	Hot weather crop after Kharif
Hy.Cotton Hy. Bajra Jowar Pulsesl	Wheat/Mustard Cumin Isabgol/ Cumin Wheat, Lucerne	Cowpea, Mug Jowar, Bajra. Cowpea	Hy. Bajra Pulses Fodder

Cropping Pattern

- **Kharif:** Cotton (40%), Green gram (10%), Castor (20%) Hybrid Bajra (20%), Fodder (10%)
- **Rabi:** Wheat (40%), Mustard (20%), isabagol/ jeera (20%), fodder (10%)
- **Summer:** Bajra (20%), fodder /vegetables (10-15%)

Farmer module...

Crop	Av. Yield (Qt/ha)	Cost of cultivation (Rs./ha)	Gross income (Rs./ha)	Net Income (Rs./ha)	Weightage (%)	Income (Rs/ha)
Cotton	30	25,000	50,000	25,000	40	10,000
Castor	20	15,000	30,000	15,000	20	3,000
Bajra	50	15,000	30,000	15,000	20	3,000
Wheat	35	15,000	30,000	15,000	40	6,000
Green gram	7/2*	10,000	20,000	10,000/ 4000	10	1,000
Tobacco	10	17,000	30,000	13,000	10	1,300
Mustard	10	10,000	20,000	10,000	20	2,000
Jeera	10	20,000	30,000	10,000	20	2,000
Total Income						24,000

Scheme module

- Annual Rainfall in the range of 625-825 mm
- Sandy to sandy loam soils
- Canal Water only from September/October
- During Kharif farmers depend on tube well cooperatives
- They pay any where between Rs. 2000-4000/acre (Rs.60/hr, 6 hours/acre/irrigation and 6-8 irrigations per crop) to tube well cooperatives in addition to ICs (Rs.400/ac)
- Normally during summer no water from ICs
- Drought Once in four years

Farmer module...

Crop	Water charge by govt. (Rs./ha)	Water charge by ICs(Rs./ha)
Cotton	1000	1200
Castor	750	1000
Bajra	499	900
Wheat	556	900
Green gram	499	900
Tobacco	750	1000
Mustard	556	900
Jeera	1000	1200
Fodder/veg	499	1200

IC (Com. Area)	Rangpur (dsc)	Thalota (dsc)	Kakdimba (Ak)	Chopdavev (AKR)
	617	251	891	1460
Irrigated area/ Share holders	230 248	152 212	290 550	340 444
Water Charge Income	203.5	164.6	238.71	259.22
Subsidy for Adm M&R Addl. water charges	43.72 65.52 94.42	35.76 52.51 117.23	21.43 34.91 200.61	34.01 51.02 227.33
Bank Interest	24.24	28.81	7.1	4.02
Voluntary Labor	57.02	-	6.41	5.85
Diversification	-	58.10		
Toatl Income	284.68	292.41	252.23	275.6
Expend- Adm.	8.83	36.52	143.85	36.36
Salary	12.50	36.09	37.03	35.60
M&R	136.63	40.09	92.32	69.34
Operator Salary	69.77	55.67	72.06	32.51
Total Exp	157.96	168.37	236.1	141.29
Surplus	126.75	124.03	16.13	134.31

Components of expenditure

Component	Extent of expenditure by ICs(% of Total expenses)
Secretary's Salary	10- 22% (Rs 500 to 2000/month)
Operator's Salary	Highest component with 20-40 % (Rs. 500 to 1500/month) (1 to 3 and more operators depending on the command area.)
Administrative expenditure	5-45% (Rs 9 to Rs 116/ha)
Maintenance and Repair of the canal	Less than 50%

Conclusion

- Farmers are capable and willing to pay the water charges fixed by the ICs.
- Need to maintain **Fixed expenditure** within the stipulated limits.
- Need to have minimum of 100-150ha. Command area under irrigation.
- **Secretary's salary** should be on work basis.
- Voluntary labor is a welcome development and it should be institutionalized.
- Water rates for **high value crops** should be higher.

- Water charging should be **on watering basis**.
- **Non Farm water users** should be made members
- Emphasis should be on increasing command area
- In the presence of no. of cooperatives lead by Dairy cooperatives in the villages, **diversification** should be the option only after well planning.
- **Vermi composting, seed production** and marketing can be the new areas for diversification
- **Need further detailed study focusing on farmers in ICs of various sizes of command.**

Let us Discuss