



Water and Sanitation Program

An international partnership to help the poor gain sustained access to improved water supply and sanitation services

South Asia Region

SMALL PRIVATE INITIATIVES (SPI) IN THE WATER AND SANITATION SECTOR IN INDIA

In India, water and sanitation services are predominantly provided by Government and para-statal agencies. There are very few instances of large-scale formal private sector participation; where they exist they are mostly service contracts or management contracts.

However, a number of small-scale informal private initiatives have emerged to fill the gaps in the existing delivery system. Some of these private initiatives are in partnership with the Government, and others have come about on their own in response to demand from clients.

This series of Field Notes on Small Private Initiatives in the Water and Sanitation Sector in India is designed to document a few successful urban and rural experiences focusing on the poor.

SPI Series: 2

Sustainable Community Management of a Multi-village Water Supply Scheme in Kolhapur, Maharashtra, India



Women filling water at the public standpost

SUMMARY

In the Shirol *taluka* of Kolhapur district are 4 villages which have reason to feel proud. For as many as 19 years, the joint water management body (*mandal*) of Lat, Latwadi, Shivnakwadi and Shiradwad has operated and maintained its own multi-village piped water supply scheme, with a total revenue surplus of more than Rs. 370,000. This field note documents the remarkable story of Kolhapur.

Background

IN DECEMBER 1980, the Department of Environmental Engineering (Maharashtra Jeevan Pradhikaran) of the Government of Maharashtra constructed and commissioned a multi-village piped water scheme, in Kolhapur district, which drew water from the Panchganga river and supplied it to 4 nearby villages in Shirol taluka, namely, Lat, Latwadi, Shivnakwadi and Shiradwad. Three out of the 4 villages were Gram Panchayats (GP) (see box on the Panchayati Raj Institutional Structure). Latwadi subsequently became a GP. The Maharashtra Jeevan Pradhikaran's (MJP) policy was to hand over such schemes to the Zila Parishad. However, the Kolhapur Zila Panchayat was not prepared to take it over because it did not have the financial resources to pay for the operation and maintenance (O&M) costs of the scheme.

A Government Deputy Irrigation Engineer, and the Headman (Sarpanch) of Lat GP, discussed the

THE PANCHAYATI RAJ INSTITUTIONAL (PRI) STRUCTURE

THE PRI structure is a three-tiered one: Zila Panchayat (district level), Block Panchayat (intermediate level) and Gram Panchayat (village level). A district typically has several Block Panchayats and each Block Panchayat contains several Gram Panchayats (GP). Each GP, which comprises one or more villages, has several wards, which are electoral units for GP elections. There are also several hamlets within a village, which are locally-recognized clusters of habitations.

matter extensively with the committees of all 4 beneficiary villages, advocating the setting up of a self-help group. Convinced of the advantages, the 4 village communities came forward to take over the scheme directly from the Government of Maharashtra. These villages formed a joint water management body (*mandal*), which included the Sarpanches of 3 GPs, an elected Member from Latwadi village, Chairpersons from the newly-formed Village Water Supply Committees in the 3 GPs (Latwadi was excluded as initially it was not a GP), and a Technical Advisor, who was the Sub-Divisional Officer of the Ichalkaranji Sub-Division of the Maharashtra Water Supply and Sewerage Board. As the adjoining Ichalkaranji Spinning Mill would also benefit from the scheme, a representative from the Mill was included in the *mandal*.

In May 1981, the *mandal* took over the O&M of the Kolhapur multi-village piped water scheme. There was no formal handing-over from MJP to the *mandal*, but only an informal arrangement where the MJP continued to own the scheme, and the *mandal* was responsible for its O&M.

This unprecedented move would not have been possible without the motivation and advocacy of the Irrigation Engineer and the Lat Sarpanch, who took it upon themselves to convince villagers to accept the responsibility of self-management. To their credit, the villagers responded to this challenge, and took on the responsibility of the O&M.

The Scheme in Operation

THE SCHEME started with 419 household connections. Over the next 19 years, the *mandal* replaced and repaired faulty equip-

ment and encouraged more villagers to opt for household connections. Additional pipelines were laid in the 4 GPs and the total number of household connections increased to 1,723 in 1999.

Household Connections

At the time of taking a household connection, each subscriber pays a deposit (currently Rs. 250) and a connection charge (at present Rs. 50) to the *mandal*. Thereafter, he pays an annual development charge (now Rs. 20) and an annual water supply charge of Rs. 200 per individual connection. Thus, a new household connection currently costs Rs. 520. Interestingly, the annual water supply charge of Rs. 200 per household connection levied by the *mandal* is lower than the Rs. 365 charged by the Zila Panchayats in the rest of Maharashtra.

If the subscriber fails to pay the annual charges, the *mandal* imposes a penalty. Recurring non-payment leads to disconnection. However, disconnections are rare and till now

TECHNICAL DETAILS OF THE SCHEME

WATER IS pumped from the river by a 30 horsepower pump to a settling tank 4 kilometers (km) away. Subsequently, water is released to the 4 villages through pipelines, according to a fixed time schedule. The scheme was designed to provide 70 liters per capita per day (lpcd). Piped water supply is given to individual households and, in addition, a few public standposts are located at central points in the village for the economically weaker sections in the village, and for common purposes.



A jack-well on the river

only 16 household connections have been disconnected.

Public Standposts

Those who cannot afford a household connection - or do not desire a higher level of service - use public standposts. These provide free water. While there were about 70 public standposts at the start of the scheme 19 years ago, there are currently only 43. The *mandal* reduced the number of public standposts to promote revenue-yielding household connections within the villages.

For the O&M of the existing public standposts, the *mandal* has been collecting payment from the 4 GPs. On an average, the annual contribution has been Rs. 18,000, with the GPs of Lat and Latwadi paying Rs. 12,000,

SINCE EVERYONE pays the Panchayat levies - including those who have opted (and paid) for private connections - the non-poor also pay part of the cost of providing drinking water to the poorer households in the village.

Shiradwad paying Rs. 4,500, and Shivnakwadi, Rs. 1,500 per year. These amounts were revised in 1995, and Shiradwad now pays Rs. 5,000 and Shivnakwadi, Rs. 2,500 per year.

These amounts work out to less than 1 rupee per villager per year in each of these villages, and each GP adds this amount to the annual Panchayat charges (of Rs. 40 per year currently) routinely collected from all villagers.

Finances of the Mandal

Over the 18 years of its operation, the *mandal* has accumulated a revenue surplus of more than Rs. 370,000 (Table 1).

The annual revenue of the *mandal* comes from annual water supply charges and penalty fees from private subscribers, payments from the GPs, payment from the Ichalkaranji Spinning Mill, a rebate from the Maharashtra State Electricity Board

Table 1
Annual Income and Expenditure of the Mandal
(1981-82 to 1997-98) Rs. '000

Year	ANNUAL			Cumulative Balance
	Income	Expenditure	Balance	
1981-82	83	55	28	28
1982-83	66	38	28	56
1983-84	89	60	30	86
1984-85	104	72	31	117
1985-86	121	111	11	127
1986-87	155	185	-30	97
1987-88	138	146	-9	88
1988-89	223	194	29	117
1989-90	175	160	16	133
1990-91	250	164	86	219
1991-92	211	205	6	225
1992-93	275	286	-10	215
1993-94	285	255	29	244
1994-95	260	248	12	256
1995-96	343	329	13	270
1996-97	564	432	132	402
1997-98	462	493	-31	371

Source: Mandal Account Books

for paying electricity bills on time, and interest income from its investments (Table 2).

The largest contribution to the income of the *mandal* in 1997-98 came from annual water charges

A mandal meeting in progress



Table 2**Details of Income and Expenditure of the *Mandal* (1997-98)**

INCOME SOURCES			HEADS OF EXPENDITURE		
DESCRIPTION	AMOUNT (Rs. '000)	% OF THE TOTAL*	DESCRIPTION	AMOUNT (Rs. '000)	% OF THE TOTAL*
Household annual water charges	315	3	Worker salaries	168	35
Household connection deposits	12	69	Bonus to workers	19	4
Household connection fitting charges	3	1	Maintenance and repair work	23	5
Contribution from Shiradwad Village Panchayat	5	1	Extension of pipelines	36	7
Contribution from Shivnakwadi Village Panchayat	3	1	Chemicals	57	12
Contribution from Ichalkaranji Spinning Mill	35	8	Pump electricity bill	30	6
Interest from bank deposits	13	3	Office electricity bill	4	1
Rebate from the Electricity Board	6	1	Telephone bill	4	1
Workers contribution to Employees' Provident Fund	3	1	<i>Mandal's</i> contribution to Employees' Provident Fund	7	1
Advance to workers**	8	2	Advance to workers from payment	8	2
Advance for pump repair**	55	12	Pump repair	69	14
			Pump repair advance from payment	40	8
			Uniforms for workers	5	1
			Stationery	6	1
			Advance for jack-well land purchase	10	2
TOTAL	458	99	TOTAL	485	98

Source: *Mandal* Account Books

* Percentages have been calculated with respect to the full totals of income and expenditure (given in the last column of Table 1). Total income and expenditure in this table are only 99% and 98%, respectively, of those given in Table 1, because items of income and expenditure less than Rs. 1,000, and items contributing to less than 1% of the totals, have been omitted.

** Advances to workers are mentioned in both expenditure and income columns as an accounting identity, because these are payments already made to workers for which deductions will be made in future salaries paid. Advances for pump repairs appear in both columns for the same reason: advance payments made will be settled against bills produced in the future.



A caretaker opening the reservoir valve to release water

collected for household connections, and the single largest head of expenditure was workers' salaries. The expenditure on salaries, maintenance and repair (including of pumps), chemicals, and electricity, was about 75 per cent of the total annual expenditure.

The *mandal* has used part of its revenue-surplus to create assets, including an office building, a small shed for the watchman at the settling tank, a store for material, and a telephone line. It has also bought Government bonds and placed money in time deposits with banks. Each year the accounts of the

mandal are audited by a chartered accountant, and the entire set of accounts is available for scrutiny with the Secretary of the *mandal*.

The Absence of Spread Effects

WHILE NEIGHBORING villages also have multi-village water supply schemes, not one has been taken over by the local community. Currently, either the MJP or the Zila Parishad manage and maintain these projects. Even though these villagers have been paying the current annual State-wide tariff of Rs. 365 per household connection to their GPs, electricity bills remain unpaid. The payment of these bills is, however, a non-issue as villagers know that even if bills remain unpaid, their water supply will be assured. Indeed, in one neighboring village, when the State Electricity Board cut off power supply for 3 days for non-payment of its bill, a public protest by the villagers managed to generate sufficient political pressure on the Board to restore supply forthwith.

Within such an environment, it is easy to see why the example of the hard-working *mandal* of Lat, Latwadi, Shiradwad and Shivnakwadi does not seem attractive to their neighbors.

Why has the Mandal been Successful?

■ **The need for water** The scarcity of water in these villages was the main reason the scheme was constructed. The villagers have, therefore, had a definite interest in sustaining the scheme.

■ **Evidence of benefits** Since the

mandal has been able to ensure that villagers continue to enjoy the benefits of improved water supply, it has won the trust of the community.

■ **Transparency of operations**

Apart from the sustainability of water supply, the fact that financial details of the operation of the *mandal* are always available on request from the Secretary of the *mandal* has contributed undoubtedly to the trust the *mandal* enjoys in these villages.

■ **Able leadership**

The *mandal* has been able to function effectively largely because of the quality of leadership. Both the *Sarpanch*, who helped initiate the scheme, and the Secretary of the *mandal* (who has held office over the last 18 years) have invested considerable time and effort in its effective operation. One important aspect of their leadership has been their ability to involve the GP members in the management of the *mandal*.

■ **Commitment of the mandal leaders**

Why have they been committed to the *mandal*? The reasons are common to the other *mandal* members. First, the satisfaction of overseeing a working public service, and, second, the prestige that goes with being a part of a *mandal* with sufficient finances to run the system and make small grants for social development in the village.

Current Problems and Prospects

THERE ARE 3 problems currently facing the villagers of Lat, Latwadi, Shiradwad and Shivnakwadi. The first is that of its legal existence. The *mandal* does not own the schemes since it is not a legally registered body. It cannot be regis-

tered as a cooperative since it does not produce any conventional output that is mandated under the cooperative law. The *mandal* is reluctant to register itself as a society since that implies elections, which would introduce a political element that might impede the smooth functioning of the *mandal*. It cannot be registered as a Trust since it does not own any property (ownership of all assets of the scheme rests with the Government of Maharashtra). Yet it operates as an 'Informal Trust' since the villagers are prepared to pay the *mandal* for its services. Currently, the *mandal* is investigating the possibility of taking over the ownership of the scheme from the Government. One possibility as yet unexplored is of forming an association of partners.

The second problem is more serious. The Panchganga river, which is the source of their water supply, has become extremely polluted over the years with the wastes from Kolhapur city. No treatment plant was provided in the original design of the scheme, which did not anticipate a problem of riverwater pollution. Tests of the water supplied to these villages have revealed that it is unfit for human consumption. Yet, the villagers have to drink polluted water since there is no alternative source.

The third problem is also worrying. There is a decrease in the water available to individual villagers from the scheme. Although initially designed to provide 70 lpcd, it now provides only about 44 lpcd, which is less than the current norm of 55 lpcd set by the MJP. This is due to 3 main reasons.

■ **The efficiency of the pumps has decreased with age**

Although 1 pump has been replaced, the other pump works at only 70 per cent of its capacity. While designed to produce 1.09 million liters per day (MLD), the old pump currently produces only 0.70 MLD.

■ The increase in population in the 4 villages

The population of 14,371 persons in 1971 grew at a rate of more than 2.8 per cent per annum to 22,606 individuals in 1991, and is projected to grow at around 2.6 per cent to 30,900 persons in 2004. This growth in demand reduced per capita availability of water from the designed 70 lpcd, to 48 lpcd in 1991, and will reduce it further to 35 lpcd in 2004. If the efficiency of the pump is assumed to reduce by 30 per cent, the availability of water in 2004 will be less than 25 lpcd. With even a 10 per cent reduction in pumping efficiency, there will be only 31 lpcd by 2004.

■ The increase in the number of private connections has reduced the water pressure in the pipes

Given fixed pumping hours, the increased time in collecting the same amount of water, especially from public standposts, will reduce the amount available per capita per day for the poorer households who depend on public standposts. They are, consequently, more affected by the decline in water pressure in the system than the relatively better-off households who can afford household connections.

If these problems are not tackled immediately, the scheme is likely to run into serious difficulties in the near future.

The *mandal* has approached the Zila Parishad to replace the older pump and is prepared once again to pay the 15 per cent contribution required by the Zila Parishad to carry out the replacement. The *mandal* has also written to the MJP to install a small water treatment plant to clean the water before supplying it to the villages. On the basis of this request, the MJP has designed a new scheme consisting of new pumps and pipelines, and a water treatment plant costing Rs. 5.5 crores, to provide clean and adequate water supply for the next 30 years. The new scheme has been approved for funding. However, the *mandal* is not aware of the details of the new project, and it is currently uncertain when this new scheme will become operational.

Lessons

■ This is a demonstration that *village communities can operate and maintain an economically-viable multi-village piped water scheme over a long period of time*. This practical example also reveals that, despite the lack of legal registration, the sustained delivery of a good quality civic service can gain the *informal trust of the community*, with villagers prepared to entrust the *mandal* with their money. The ambiguous status of the project could raise questions of its sustainability, but the existence of the *mandal* for the last 19 years has proved that even an "informal trust" can be sustained.

■ The creation of the *mandal* brings out the *important role of advocacy in motivating villagers to come forward to take up a project that has provided them with rich benefits*. Although the advocates were Government officials, they were acting in the interest of community development.

■ This scheme has also demonstrated the successful use of *an innovative system for recovering the O&M costs of public standposts which also has the non-poor cross-subsidizing the poor*.

■ *A crucial factor that enabled such inter-village cooperation was the small size of the scheme*. The *mandal* officials were strongly opposed to the idea of multi-village piped water schemes serving more than 5 villages because this would hamper effective decision-making in the *mandal*. This, they felt, was the main reason for the failure of larger multi-village water supply projects.

■ There is an important lesson to be learned also from the absence of 'spread effects' of this experience to other villages, even neighboring villages. This is unfortunate, and largely due to the environment where villagers know that sufficient political pressure can provide an alternative to good management. Policy advocacy can ensure that Governments actively promote collective action towards community self-management, without Government subsidies.

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