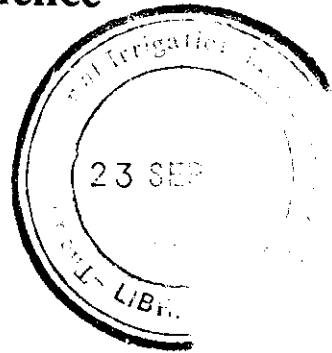


Status of Irrigation Management Transfer in India

**Water Users' Association in Kadloi
Lift Irrigation Scheme:
Farmers' Experience**

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Foreword

This booklet is one of the series of short narratives about farmers' efforts to create and manage water user associations. The purpose of the series is to provide other farmers in the state with succinct, readable, and interesting information about these efforts that might enable farmers to improve their access to the irrigation services. This study is being published in both Marathi and English. See the back cover for information about the other narratives in this series.

This narrative was written by Pritam K. Patle under the guidance of IIMA and IIMI team members. He lived with the farmers described here from October, 1994 to April, 1995. While there, he interviewed and observed the farmers in order to document the water user association and irrigation management transfer process at this site. The information presented here reflects the ideas and opinions of the farmers themselves.

Pritam K. Patle's effort was part of the study on Status of Irrigation management Transfer in India being carried out from 1993 to 1995 by the Indian Institute of Management, Ahmedabad, and the International Irrigation Management Institute, Colombo, with funding from the Ford Foundation. The study investigated and documented the policies and activities of agencies, non-governmental organizations, and others with regard to promoting irrigation management transfer from the government to farmers. The overall goal was to contribute to formulation of effective policies and programs with regard to irrigation management transfer in India. In addition to this series of short narratives, study results are reported in more traditional research reports and other forms.

The primary members of the IIMA/IIMI study team were Shashi Kolavalli, Amaral Kalro, Gopal Naik, and S. Ramnarayan from IIMA, and Jeffrey D. Brewer, R. Sakthivadivel, and K.V. Raju from IIMI. Editing in Marathi was carried out by Sudhir Sevekar and Suryakant Saraf. The edited first draft was translated into English and reviewed by the study team, particularly by Amaral Kalro and Gopal Naik.

The members of the study team, including Pritam K. Patle, wish to thank the people of Village Kadoli, concerned government and non-governmental agencies who gave their hospitality and time to answer questions and explain how things work without expecting compensation. We sincerely hope that their experiences will be useful to others.

Jeffrey D. Brewer
IIMI

Gopal Naik
IIMA

Water Users' Association in Kadoli Lift Irrigation Scheme: Farmers' Experience

Kadoli village is situated at a distance of 35 kms. from Kolhapur. It comes under the Panhala revenue taluka. Panhala is associated with the bright history of Marathas. Panhala fort still stands as witness of those glorious days. Kadoli is 17 kms away from Panhala. Population of the village is about 23000. Marathas constitute the major part of the population and majority of them are farmers.

Kadoli is surrounded by the Warana river basin. Warana river has a better water ratio, and is fully flooded during rains. In the past people tried to use its water by building weirs in its bed.

A sugar factory came up in 1955 on the Warana bank near Kadoli. It was named **Warana Sakhar Karkhana**. Its founder, Late Mr. Vishvanath Anna Kore was affectionately called "Tatyasaheb" by the local people. He brought a change in the area by establishing the sugar factory. He implemented new schemes and guided the farmers and farm labourers towards a new direction of progress.

The factory required sugarcane in large quantity, but the farmers cultivated rainfed crops for four months. The next season they would try for another crop with the help of well water. This picture needed to be changed. Kadoli Kolhapur type weir was therefore built in 1960. Eight such type of weirs were built in the area as soon as impressive outcomes were achieved. Warana stream was blocked at many places, and the flowing water was impounded to be utilised for farming.

Kadoli had a vast amount of unused land. Lack of cultivation had made it a waste land. Rainfall in the area was 1200 to 1500 m. Farmers used to grow paddy in kharif as there was enough water. During Rabi, they could raise maize, jowar, wheat, bajra, etc. Summer was a slack season for them. There could not be any annual crop.

The first Kadoli weir was built in 1960. It was a quite big weir. It was 78.40 mts long, 3.65 mts wide and 6.70 mts high. It could irrigate 1500 hectares of land if the entire storage water was used. The weir had thirty two outlets for water.

The weir was meant for providing irrigation facility. Many people came forward with their lift irrigation schemes. Farmers lifted the water with electric pumps and supplied water to the crops with pipes. This was the only way they could irrigate their lands. Zilla Parishad, Kolhapur initiated many lift irrigation schemes at several places. Land at distant places also began to receive water, and benefits of irrigation were visible soon. Most farmers started to grow sugarcane in their fields.

In a short span of time, the number of weirs increased to eight. The landscape was changing gradually. But irrigation facilities were still not adequate. Kadoli population was 23000. Not many of them could go through the technical procedures. Few could bear the expenditure for motors, pipes and electricity. Very few people had the knowledge to approach Zilla Parishad authorities to apply for permission to lift water in the prescribed way.

While there was ample water for irrigation, other matters were coming in the way of the simple farmers utilising this water. They could "buy" water from a rich farmer having his own lift scheme, but they were then at the mercy of the seller.

The poor farmers buying water benefitted from its use. This gave rise to high water charges. The rich farmer claimed one fourth part of the poor farmer's produce. This was a very high price that he had to pay for the water. However, this was not all as the irrigation department authorities also collected water tax from them as per their rules.

It was intolerably difficult for the poor farmers, but they had no choice except to accept the situation. They continued to grow sugarcane and allowed others to over charge them. They were happy with the small profit they could still get.

A dam was constructed across Warana river in 1975. This major dam is near Chandoli in Sangali district. Water storage increased, and the excess water in the dam was released. This was impounded and stored by weirs. They had larger amount of water now and weirs could be seen full in summer too.

Vishvanatha Taty - the founder of Warana Sugar Factory noticed this change. He knew that there was adequate supply of sugarcane to the factory, but was troubled to see the poor farmers deprived of their due benefits, because they had to depend on others for water supply. They must have their own lift irrigation scheme - he thought. This vision shaped the future of the poor farmers in a short span of time.

The Warana Sugar Factory was now well established, and was managed by professional staff. Their irrigation department had many schemes. One more scheme was added by them for the farmers of Kadoli - one more lift irrigation scheme.

By a mutual contract the responsibilities for obtaining water permission from Irrigation Department and electricity permission from the Electricity Board were to be borne by the Warana Sugar Factory. It was agreed that the factory authorities would do everything necessary to make enough water easily available to Kadoli farmers. Each beneficiary farmer had to deposit Rs.580/- per irrigated acre. Kadoli Cooperative Lift Irrigation Society was thus born and registered in 1985 as Sambhaji Warana Cooperative Farming Water Distribution Society, Kadoli.

Something About Kadoli and Surrounding Area

Kadoli is situated in Panhala taluka of Kolhapur district. (It is thirty five kms. away from Kolhapur) The weather is hot and damp, rainfall is in the range of 1200 mm to 1500 mm. The soil is black, medium and red at some places. River Warana spans a larger portion of the village. Government of Maharashtra built the Kadoli weir in 1960. It helped to store water, which was lifted for drinking and for industries. Enough water was not available for agricultural purpose. Irrigation department,

Government of Maharashtra therefore decided to construct a dam across the river Warana. Construction work started near Chandoli at a distance of 75 kms. from Kadoli. When it was near completion in 1980, excess water began to be let out in Warana river bed. Eight Kolhapur type weirs were built in order to utilise this excess water.

The weirs are supervised and maintained by Government of Maharashtra. The water stored is used for drinking, for industries and for irrigation as the order of preference. Maintenance and repairs of the dam and the weirs were the most important job of the irrigation department. The lift irrigation schemes added to their responsibilities. To give permission for lifting water and regulating the quantity lifted by specifying the horse power ratio, and to collect water tax was the additional job for the department. Water tax was to be charged depending on the crop pattern per hectare.

Each farmer could not afford to have his own lift system. Therefore, the majority used well water. Due to shortage of water supply from wells, they saw their crop wither.

The rich farmers in the area benefitted by installing their own lift system. Some farmers irrigated their lands with the help of these rich farmers. But the benefits were low. They had to pay one fourth of their output to their benefactors. In addition, they had to pay water tax to the Government of Maharashtra.

The owners of lift schemes used to irrigate their own lands first and then sold water to their fellow farmers with irregular water supply. They dictated their terms and the poor farmers had to submit to them for availing water. They had no alternative except to depend on rain water or well water or borewell water.

Farmers depending on rain water generally grew paddy, maize, groundnut, jowar, bajra, etc. in their fields. But uncertain, irregular rains made them face famine often. Very few farmers could invest in private lifts or borewells. They cultivated sugarcane, wheat and groundnut as the major

crops. Many farmers produced enough for their own consumption only. But some grew cash crops on a large scale because they had access to enough water from lift schemes. They also got a good price for their produce in the market.

The 1991 census reports the population of Kadoli to be 22500. It has grown much since then and consists of Marathas, Brahmins, Muslims, Jains, Christians, Buddhists, etc. Marathas are the largest in number and their main occupation is farming. There are many cooperative societies, banks, housing societies and they have contributed to the development of the village. The condition of the people was pitiable when they depended on rainfed agriculture. Except for the rainy season, they spent the remaining year in idleness. The landless could not get employment anywhere and the people were perpetually under economic stress.

The Vision of Tatyasaheb Kore and the Role of Warana Sugar Factory

Late Shri Tatyasaheb Kore created an awareness about Cooperative movement among the people in the region. He convinced the people about the importance of cooperation. He collected shares from the people in the area and established the Warana Cooperative Sugar Factory. The sugar factory aimed at economic development of the region. He initiated many more cooperative organisations one after another. He strove for the betterment of the people.

There were about eighty villages in the factory catchment area. The factory had undertaken five water supply schemes for the villages - Talsande, Pargaon, Savarde, Latwade, Kadoli and Satve. A small scheme for village Karave was also run by the sugar factory. These schemes have since repaid the complete loan amount and are progressing satisfactorily. They charge the least water tax for supply of water.

With intention of bringing more land in the factory area under irrigation, 57 small lift irrigation schemes have started functioning with support from Warana Sugar Factory. They are progressing satisfactorily under the

control of the sugar factory. Nearly 36 of these schemes have since repaid their loan. The remaining schemes are regular and prompt in their repayment. These schemes have been financed by Bank of India, State Bank of India, United Western Bank, Union Bank of India, with loans to be repaid over a ten year period. All these water supply schemes have their balance at factory's credit. Some societies have also repaid the five percent share the factory had offered without interest initially. Each of these schemes is operated with a 40 HP electric motor and commands 120 acres of land.

The lift irrigation schemes have contributed 1.50 lakh metric tonnes of extra sugarcane production in this area. There is still scope for initiating more lift irrigation schemes. Recently Parshvanath Kini and Jal Laxmi Kini societies have established at Kini.

The Warana Sugar Factory has undertaken some bigger schemes also. The upcoming Padali Pargaon Warana Sahakari Pani Puravatha Sanstha has been financed with a loan from Kolhapur District Central Cooperative Bank. The sugar factory has also invested a large amount as required to expedite the scheme. For the year 1994-95 they have planned to have 600 acres of sugarcane crop under this scheme. The pipeline work is under progress now and the management is under the control of Shri Bajirao Balaji Patil, the Vice President of the sugar factory.

The existing and upcoming schemes will result in increasing cane production so as to meet the increasing requirement of the factory.

Kadoli Awakens: Formation of Shri Sambhaji Warana Cooperative Lift Irrigation Scheme

Everybody around was interested in growing sugarcane. Kadoli villagers who did not have access to water came together. They had a meeting which was presided by Shri Vasant Keshav Patil. They discussed about establishing a cooperative water distribution society. Mr. Kulkarni from the Irrigation Department of the factory guided them. Most of them agreed to initiate efforts for a lift irrigation scheme. Shri Vasant Keshav Patil

agreed to donate land for the pump house in the name of his nephew - Late Sambhaji Patil. Eleven farmers went to the Assistant Registrar's office and Sambhaji Warana Cooperative Water Distribution Society was registered on 28th April 1985. The byelaws were prepared for the society. Membership was granted to farmers in the command area of 240 acres. Rs. 540 for an acre was the share subscription amount collected for the society with the membership forms.

The society applied for loans to the Bank of India and the Warana Bank by hypothecating member's lands. A contract was signed between the society and the sugar factory. Accordingly, a water permission for 80 HP was sanctioned by irrigation department, Govt. of Maharashtra. In the same way electricity permit too was obtained. The sugar factory had to enter into a contract with both the irrigation department and the State Electricity Board.

The conditions and limitations of the society were mentioned in the contract.

The factory engineers prepared an estimate for the schemes to be run by the Sambhaji Warana Cooperative Water Distribution Society. The estimated cost was Rs.7.50 lakhs for Scheme No.1 and Rs.8.00 lakhs for Scheme No.2.

Work on the lift irrigation scheme started in 1985. It took two years to complete. Four electric motors, each of 20 HP were installed on the bank of Warana river. They were in two different groups. The main pipelines were taken four feet under ground. The length of the two main pipelines was 8000 feet and 12000 feet respectively. PVC pipes of 6 inches diameter were used. For irrigation purpose valves were provided in the pipeline.

Scheme No.1 had 30 valves and Scheme No.2 had 35 valves. In order to avoid pressure in the pipeline, air valve arrangement was made.

The engineers from the irrigation department of the sugar factory, the Patkaris and the Secretary of the Society have made a significant contribution in making the scheme work. Their hard work resulted in successful working of the scheme. The scheme was inaugurated by Late Shri Tatyasaheb Kore in 1987. Water supply started from that day.

Framework and Structure of the Scheme

Initially the society had one hundred and twenty members, 65 cultivators under the first pipeline and 55 under the second. An Executive Committee consisting of 9 persons was formed by the members. They were - one Chairman, one Vice Chairman and seven members. Two members of the sugar factory were nominated to supervise the working of the executive committee.

The engineer of the irrigation department of the sugar factory and the Executive Committee planned the management of the scheme. Paid workers were appointed as the management staff. A Secretary, two Patkaris and one Machine Driver were appointed by the society.

The executive committee members unanimously decided the water charges per acre. The Engineers from the Warana sugar factory irrigation department explained the scheme to the Secretary, Patkari and Machine Driver. They also helped at times when some technical problems came up in the way.

There is a regular monthly meeting of the executive members of the society. The secretary reads out the proceedings of the previous month. The problems of water distribution are solved in this meeting. New proposals are sanctioned by the committee.

The secretary of the society reports to the irrigation department of the Warana factory about the expenses and the water distribution every fortnight. He also has to report about any shortcomings.

Working and Its Results

There is ninety percent sugarcane crop in the command area now and the remaining ten percent is used for paddy and other crops like wheat, gram, maize, groundnut, etc.

The members of the society are the members of the sugar factory too. Everybody has his account in Warana Cooperative Bank. The water tax is paid by the sugar factory on behalf of these members. The amount of the members' sugarcane is credited at the account of the concerned member. Water tax collection is always 100% and is a creditable thing for the society. The members are provided with fertilizer loans by the Warana Cooperative sugar factory.

The Patkari gives water distribution report to the society secretary everyday. Secretary resolves problems if any and explains to him the water distribution timetable. The members get water according to the timetable and their need.

The lift scheme has two sections. These two schemes are handled by two separate Patkaris. There are 65 "T" points for each operation of water distribution.

Water is distributed in presence of the Patkari and the member himself. Four "T" points are let open everyday. The member reports to the Patkari when his turn is over. Patkari closes the "T" point and notes down details of area irrigated in his book and obtains the members signature confirming completion of his turn.

The Patkari then provides water to the next member by opening his "T". At the same time he notes down the details in the society register.

If the member is absent during his turn time, the Patkari does not supply water to his land. If the member is careless and allows water to flow out of his land, he is fined Rs.30 per guntha. As this rule is strictly followed, members are careful while taking their water turn.

The society has avoided wastage of water by having underground pipelines. Farmers take water from their field channel and this helps in maximum water utilisation.

The scheme runs night and day. It stops working only when the water is not needed by the members. In absence of power or when the machine is under repairs, the scheme stops working. There is good rainfall during the monsoon and during that period also the scheme is not operational.

In summer every member needs water. This sometimes results in trivial quarrels. The secretary decides everything about the water distribution and is capable of resolving these conflicts and restoring peace among members.

Agreement - Factory and the Society

The Warana Cooperative Sugar Factory and the Sambhaji Warana Sheti Pani Watap Sanstha have a contractual agreement and have laid down some conditions binding both. Members of the Sambhaji Warana Sheti Pani Watap Sanstha society have consented to these conditions, which are as follows:

I agree to pay the water charge as asked by the society at all times. I consent that it be deducted from my sugarcane credit amount.

I agree to abide by the rules of water distribution framed by the authorities and I shall follow their instructions.

I shall be careful not to waste water by extra consumption and I shall report to the Patkari as soon as my turn is over. In breach of the rules I shall be bound to pay the fine charged by the authorities.

I shall never object to other members getting their water supply. If the member needs a way out from my field for the water I shall

cooperate with the authorities to get the work done smoothly. The decision by the irrigation officers will always be "final" in such matters.

I shall maintain the field channel and keep it in order as per the irrigation officer's instructions.

I will not object when the irrigation authorities visit for inspection purpose.

I accept the responsibility for the harm caused by non-availability of water due to unavoidable reasons or mechanical faults in the machinery. I shall never complain against it.

It shall be binding upon me to deposit my sugarcane produce to the Warana Sugar Factory. In case of my mistake I shall be liable for the penalties charged by factory authorities.

In case of breach of any of the above conditions, factory authorities may stop my water supply and the risk thereof lies with me personally.

The Sambhaji Warana Cooperative Agricultural Water Supply Society is fully controlled by the Warana sugar factory. The board of directors is concerned with operations only.

The sugar factory charges the society Rs.4000/- as supervision charges.

The Picture Today

The Sambhaji Warana Society is making good progress. The command area of the scheme is 240 acres and 180 acres of land were irrigated during the year 1994-95. The scheme has been divided in two sections. Each section machinery is capable of irrigating 120 acres of land. Two twenty horse power electric motors are used for lifting water. Eight thousand feet long pipeline has been drawn to take water to the fields

from the Kolhapur type weir. In the second scheme the length of the pipeline is 12000 feet. The main pipeline has PVC pipe eight inches in diameter. The water supply pipe is only four inches diameter PVC pipe. To overcome air pressure, there are air valves at certain distance in the pipeline.

For smooth working of the scheme, one secretary and two patkaris have been appointed by the society. The secretary is paid Rs.950/- per month whereas the Patkaris are paid Rs.800/- per month.

The secretary has to prepare the timetable for water distribution, call monthly meetings and discuss and resolve problems faced by the society. He has to necessarily report about water distribution, water tax collection, the accounts after every fortnight, to the factory authorities.

An operator is appointed by the society to operate the four electric motors. He is paid Rs.700/- per month by the society.

The electric motors run day and night, except during the monsoon when farmers do not need water. In case of mechanical failure, which occurs sometimes, the motors are stopped.

Members avoid receiving water during night time as they have to be present and supervise the water supply. They are penalised Rs.30/- per guntha if the water enters the neighbouring field.

Collection of water charges is the factory's responsibility and there are no complaints as the amount is deducted from the sugarcane bill deposited at the factory in Warana Cooperative Bank. Naturally there is assured hundred percent recovery of the water charges.

The initial investment of fourteen lakhs was given to the society as loan by the Warana Bank and the Bank of India. These loans were sanctioned through the factory by mortgaging members' lands. Initially there were only one hundred and twenty five members. The society has repaid the entire loan amount within a period of six years. There is no loan amount

outstanding now and future operations should result in profit for the society.

The scheme was basically planned with aim of increasing sugarcane supply to the Warana Sugar Factory. Many such schemes have come and have now stabilised in the command area of the sugar factory. The factory authorities have always been helpful to these societies. No obstacle was allowed to come in the way of the societies as there were experienced officers to guide them. The factory management saved the common farmers from knocking at the doors of irrigation department, electricity board and banks to complete the technical procedures. These procedures were completed with least difficulty.

Though the water charge was not too heavy, the factory authorities collected larger amounts from the members during the beginning years, so as to minimise the burden of loan repayment. Being aware of the liquidity problems faced by farmers, the factory authorities recovered water charges through the sugarcane payment due to them from the factory.

During the first year 1987-88, the factory collected ten tones of sugarcane crop per acre of the irrigated land. Six hundred rupees an acre for kharif and eight hundred rupees an acre for rabi crops were collected as water charges. Charges varied each year, bearing in mind sugarcane prices, loan repayment, and operating expenses. The charges during subsequent years are as indicated in the table below:

Year	Crops	Water charges
1988-89	Sugarcane Kharif Rabi	12 tonnes/acre Rs.600/acre Rs.800/acre
1989-90	Sugarcane Kharif Rabi	12 tonnes/acre Rs.600/acre Rs.800/acre

1990-91	Sugarcane Kharif Rabi	12 tonnes/acre Rs.600/acre Rs.800/acre
1991-92	Sugarcane Kharif Rabi	9 tonnes/acre Rs.600/acre Rs.700/acre
1992-93	Sugarcane Kharif Rabi	9 tonnes/acre Rs.600/acre Rs.700/acre
1993-94	Sugarcane Kharif Rabi	9 tonnes/acre Rs.600/acre Rs.700/acre
1994-95	Sugarcane Kharif Rabi	6 tonnes/acre Rs.500/acre Rs.800/acre

The irrigation department used to charge Rs.468.75 per hectare of sugarcane, Rs.25.00 for kharif and Rs.37.50 for rabi crops. Government used to add twenty percent of this amount as Zilla Parishad Tax while collecting the water tax.

The society is firmly anchored with the Warana Sugar factory. The farmers are provided with fertilizers, weed killers, etc. by the sugar factory. Because of the factory management, Kadoli villagers have benefitted in many ways, both directly and indirectly. Their cropping intensity has increased, there has been a major shift towards high value cash crops, and price realisation has also improved. Members' incomes have increased substantially. There is a marginal decline in sugarcane yields. The society is interested to add new members. New members will however be charged on a differential basis, as they have not contributed to building the assets of the society. Many social facilities like dairy, market, schools, colleges, hospitals appeared at their doorstep because of the sugar factory. The society need not worry for its future either, as the factory management to take care of all necessary things for them.

List of case studies published in local languages under Irrigation Management Transfer Project

Case Studies conducted in Gujarat and published in Gujarati

1. Water Users' Association in Anklav Subminor, Mahi Kadana Project: Farmers' Experience
2. Water Users' Association in Right Bank Canal of Pingot Medium Irrigation Project: Farmers' Experience
3. Water Users' Association in Left Bank Canal of Baldeva Medium Irrigation Project: Farmers' Experience
4. Water Users' Association in Bhestan Minor (Mohini), Ukai Kakrapar Project: Farmers' Experience
5. Water Users' Association in Bhima Lift Irrigation Scheme: Farmers' Experience

Case Studies conducted in Maharashtra and published in Marathi

1. Water Users' Association in Phulewadi Lift Irrigation Scheme: Farmers' Experience
2. Water Users' Association in Kadoli Lift Irrigation Scheme: Farmers' Experience
3. Water Users' Association in Minor 7, Mula Project: Farmers' Experience
4. Water Users' Association in Parunde Minor Irrigation Project: Farmers' Experience
5. Water Users' Association in Hadshi Minor Irrigation Project: Farmers' Experience
6. Water Users' Association in Minor 17, 18, 18A, 19 and Distributary 1, Waghad Project: Farmers' Experience
7. Water Users' Association in Minor 10, Bhima Project: Farmers' Experience

Case Studies conducted in Tamil Nadu and published in Tamil

1. Water Users' Association in XIth Branch Canal, Periyar Vaigai Project: Farmers' Experience

2. Water Users' Association in Kedar Tank: Farmers' Experience
3. Water Users' Association in Dusi Mamandur Tank: Farmers' Experience
4. Water Users' Association in 28L and 29R Outlets of Mettupalayam distributary in Lower Bhavani Project: Farmers' Experience
5. Water Users' Association in Malayadipalayam Distributary of Parambikulam Aliyar Project: Farmers' Experience
6. Water Users' Association in A9 Mahilanchery Channel (Saliperi), Cauvery-Valappar Project: Farmers' Experience
7. Water Users' Association in Panchanhangipatti Tank: Farmers' Experience
8. Water Users' Association in Pillayarkulam Tank: Farmers' Experience
9. Water Users' Association in Vagaikulam Tank, North Kodaimelalagian Channel, Tambraparani Project: Farmers' Experience

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