2. BACKGROUND

"Modern technology
Owes ecology
An apology"

- Alan M. Eddison
CHAPTER II

BACKGROUND

2.1. BACKGROUND OF THE STUDY

Freshwater is a finite and precious resource that is essential for sustaining life, as are the natural systems that provide and maintain its supply. Irrigation has been a vital input for food security and sustainable livelihoods, especially in developing countries during the Green Revolution, since it has increased income and improved health and nutrition, locally, and by bridging the gap between production and demand, nationally. As demand increases, this vital, irreplaceable resource is becoming increasingly scarce. A potential crisis is looming where available resources can no longer meet the growing needs (DFID, 2001; Rosegrant et al., 2002).

Irrigation water is central to the production activity of irrigated agricultural systems and returns to collective action are more significant in irrigation water management. Irrigation water is a scarce resource in many areas and more often than not, the source of supply, distributory systems and drainage systems are either State-owned or community-owned resources. It has long been customary for governments in many countries to extend patronage and control over irrigated agriculture. However, as this approach could not be sustained, the Governments of these countries were compelled to look for alternative ways of circumventing the problem of Operation and Maintenance (O and M) funding. One method was to charge an irrigation fee and the other was the devise of management transfer as a method of transferring O and M costs to water users: "because of its importance and the perceived inability of the private sector sources to meet water demands, many countries have depended on the public sector to provide water services. Yet, this has resulted in many inefficient public water projects and in inadequate supplies of good
quality and reliable water. Decentralization of water management, including the use of water markets, cannot solve all of these problems, but it can improve the efficiency of water allocation. When given adequate responsibility and authority, WUAs have effectively taken over management activities at savings to taxpayers (Easter and Hearne, 1995).

The story of food security in the 21st century is likely to be closely linked to the story of water security. In the coming decades, the world’s farmers will need to produce enough food to feed the expanding population, yet there are virtually no untapped, cost-effective sources of water for them to draw on as they face this challenge. Moreover, farmers will face heavy competition for this water from households, industries, commercial and educational institutions (Moench, 2001; Rosegrant et al., 2002).

To overcome such problems, the Governments of many countries worldwide have already recognized the need for transferring management responsibilities to water users. The major reasons for PIM/ Irrigation Management Transfer (IMT) are: improving irrigation system performance and productivity; responding to the advice/pressures of external funding agencies; reducing Government expenditure on O and M of irrigation systems; responding to broader democratization and privatization policies and programs of respective governments; enhancing the sustainability; and reducing environmental impacts (Barker and Molle, 2002; Joshi et al., 2003; Hooja, 2004; Shah, 2005; Mikkelson, 2005; Mukundan, 2005).

The tradition of Government involvement in irrigation management, however, has been so strong in many countries and the dependency syndrome cannot be easily broken and the Government funding and patronage extended to irrigation O and M
cannot be suddenly withdrawn. It would be necessary for these countries to follow a
gradual process of withdrawal of funding through the adoption of management
transfer. Several countries have had varied measures of success in cost and
management transfer. The measures adopted have had several advantages other than
transferring the cost of O and M. For example, these have contributed to infusing a
sense of ownership or belongingness to farmers and also this is true for developing
countries in Asia. Certain developed countries such as Taiwan have had strong WUAs
prior to 1990. It should also be noted that, in addition to Gal Oya, two other
interesting experiments on organizing water users towards PIM had influenced the
large-scale adoption of PIM in Sri Lanka. One by a Deputy Director of Irrigation who
was responsible for managing the Minipe Irrigation Scheme, and the other by a
technical officer of the same department at Kimbulwana Oya Irrigation Scheme. Even
though both these efforts were on a much smaller scale and were confined to few O
and M tasks, compared to Gal Oya, and were not organized as "action research", they
can be considered as unique because they were not supported by external or project
funding for increasing efficiency in O and M. While the concept and principles seem
to be generic in nature, the strategies and procedures may be country/site specific
(Wijayaratna and Vermillion, 1994).

However, in the past 10 years, several NGOs across India have been striving
to revive completely with physical and social mechanisms, these traditional irrigation
institutions while taking cognizance of modern conditions. Notable among them are in
Maharashtra, Rajasthan, Uttar Pradesh, Bihar, Gujarat, Tamil Nadu, Madhya
Pradesh, Karnataka, Orissa and Andhra Pradesh (AP) (Pretty and Shah, 1999; Shah
and Raju, 2002; Shah et al., 2003; Ramsar, 2003). Even the Government has taken up
several projects across the country, independently and also has been implementing in
collaboration with NGOs. The Governments of Philippines (Wijayaratna and Vermillion, 1994), Indonesia (Soenarno, 1995), China (Xu Zhifang, 1995) and Sri Lanka (Wijayaratna, 2000) in Asia, Mexico (Gorriz et al., 1995) and Colombia (García-Betancourt, 1994) Latin America, and others such as New Zealand (Farley, 1994), Turkey (Devlet su Isleri et al., 1996) and Nepal have made major efforts in this direction.

The use of participatory methods in watershed projects is growing, but there is still room for improvement for institutionalizing the use of participatory methods or achieving user empowerment through research. There is a need for both workable methodologies and systematic evaluation of the experience with existing methods and tools. Beyond methodologies, there is also a need for a re-evaluation of the implications of participatory research for the role of researcher and research organizations (Johnson et al., 2002).

Being dependent for a long time on the vagaries of monsoon, India has placed a greater emphasis on development of the irrigation sector, right from independence. However, the problems of under-utilisation, lack of access by tail-end farmers, poor maintenance and non-viability of the irrigation systems still persist in the Government owned surface irrigation schemes. On the other hand, small, privately owned irrigation systems (dugwells, tubewells etc.) are found to be more efficient and provide more than 50% of irrigation in India. Water rates have not been increased for a long time because of political populism. In fact, the average water rate is only 3% of the estimated net benefit from irrigation. Because of the low water rates and poor recovery rates, revenue from the irrigation sector covers only 20% of the cost of O and M, making the sector highly subsidized and non-viable (Oza, 1998). These
problems in the irrigation sector are more or less found in all States of India though no water rates exist in Puducherry region, farmers pay in kind (paddy grain, which varies from 8-10 bags per Ha).

In the coastal areas of developing countries, the pressure on groundwater is high due to following factors:

1) Rapid urbanization and industrialization leading to higher population growth rate and density

2) Over exploitation of groundwater for irrigation, industry, institution and domestic uses (exploitation rate greater than the renewal rate)

3) Increasing pollution due to untreated sewage, industrial wastewater and agricultural runoff.

Village tanks were the exclusive source of irrigation water before the advent of bore well technologies and they ideally ensured groundwater recharge, as the rainwater was harvested and stored in the tanks. Due to the evolution of bore well technologies necessitated by introduction of water demanding hybrid crops coupled with the populist policies of the Government (subsidized/free power supply), there is unsustainable exploitation of groundwater (Palanisami and Balasubramanian, 1998). This has serious implication for groundwater quest in coastal areas. There is a close and inseparable link between groundwater and surface water bodies as the former is re-charged by the latter during the rainy season. However, the over exploitation of groundwater by increased number of bore wells, culminates in seawater intrusion into the groundwater aquifers (Agarwal and Narain, 1997; Shah, 2000). Seawater intrusion is already reported in the coastal settlements of Keezhparikalpet, Kirumampakkam, Bahour Sitheri, Seliamedu, Utchimedu, Aranganur, Irulansanthai, Kuruvinatham and
Kalapet of Puducherry region (Vasanthakumar Reddy, 2003). Among them, Keezhparikalpet, Kirumampakkam, Bahour Sitheri, Seliamedu, Utchimedu, Irulansanthai and Kuruvinatham are located in Bahour Commune, the area chosen for the present study. Thus, there is an urgent need to rehabilitate the village tanks so as to encourage community cooperation and sustainability of irrigation water use in Puducherry region. Hence, Government of Puducherry joined hands with European Union in implementing Tank Rehabilitation Project in Puducherry (TRPP) in 1998 - 1999.

2.2. Background of the TRPP

Many people still believe that India’s irrigation mainly comes from public canal irrigation systems. While this may have been true in the past, recent evidences show that groundwater now sustains almost 60% of the country’s irrigated area. Even more importantly, groundwater now contributes more to agricultural wealth creation than any other irrigation source. Yet State irrigation departments currently focus most of their manpower and budgetary resources on centrally created and managed large canal irrigation systems, allocating only a fraction of these resources to develop groundwater resources (Sowmya, 2004).

Groundwater use has increased largely because it is available ‘on demand’ to any farmer who has access to a pump. It is a myth that groundwater use is high only where resource availability is high. High intensity of groundwater use is associated with high population density. Areas with low supplies of renewable groundwater, compared to alarmingly high groundwater use include Tamil Nadu, Gujarat, Maharashtra, Andra Pradesh, Karnataka, Punjab and Haryana (IWMI annual report, 2003 - 2004).
Since the 1970s, groundwater irrigation has expanded phenomenally in Puducherry. Most of the tubewells (26% in Bahour commune) are deep tubewells averaging a depth of 100 m and often being as deep as 200 m (Vasanthakumar Reddy, 2003).

To recharge groundwater and for stopping sea water intrusion and to benefit the poorest of the poor in the villages, GoP and the EU have initiated a project in 1999, based on the principle that “transfer of irrigation management responsibilities to users will only be effective if users are equipped with powers and rights to implement them and thus water quality and level can also be maintained by using the water resources in sustainable way”. The TRPP project was implemented through the PWD, Puducherry with the assistance of Agriculture Department over a period of five years commencing from 1999.

Similar findings were reported by Mukundan, (2005) on tank modernization in Chengal pattu villages of Tamil Nadu. In the late 70’s under a scheme funded by the European Economic Community (EEC), the PWD initiated a Programme for “Tank Modernisation”. Under this programme, the following factors were identified as impairing irrigation efficiency of etries: (1) Reduced inflow into etries, mainly due to the silting up of feeder canals (2) Siltation of etry bed leading to reduced capacity of the etry (3) Weak bunds leading to breaching and loss of water (4) Sluices needing major repairs and design changes (5) Surplus weirs needing redesign and repairs (6) Siltation of the water distribution system (7) Seepage losses in the water delivery systems (i.e. channels) (8) Lack of equity in water regulation (9) Field-to-field irrigation.
2.2.1. Institutional setup of the TRPP project

In order to ensure cooperation among the various departments and coordination, the project and a steering committee was formed with officials from PWD, Agriculture Department, Revenue Department and Local Area Development Department (LAD). The Development Commissioner of the GoP is the Chairperson of the committee. The EU provided expatriate and local consultants to assist in the implementation of the project. The EU was contributing 81% of the total project cost, the PWD bearing 13% and the local communities, contributing the remaining 6% as money.

The project has created sustainable TAs and rehabilitated the existing infrastructure for 84 tanks by the end of December 2004, under TRPP, which could irrigate 6000 Ha at least for one crop. Apart from this, there was enhanced recharge of the groundwater aquifers by not using the tube wells and from the return flows of the irrigated fields under the tank command areas. In order to conserve the ground water resources, field schools was conducted in the villages in participatory mode in crop water management and thereby awareness (Plate 2.1) was created among the farmers to use water efficiently for irrigation of crops.

Plate 2.1. Farmers participation in awareness/experience sharing programme
Under this project, TAs (TAs - "eri sangam" in Tamil; eri means tank and sangam means association) was set up in all the rehabilitated tanks. A Community Organizer (CO) identifies the youth and Women groups while doing explanatory meeting and hand over the responsibility of enrolling General Body (GB) members for the tanks to be rehabilitated. The GB selects the Executive Committee and Executive Committee selects the Office Bearers (OB). As per general guideline, 60% of the EC has to be ayacut farmers, 10% non-ayacut farmers and the rest as other sections including landless sections. The institutional set-up of TRPP is illustrated in the Fig.2.1.

**Fig.2.1. Institutional set-up of TRPP**

The TA has an Executive Committee to look into the day-to-day management of the association. The Executive Committee also implements the decisions of the GB and for all the practical purposes, Executive Committee takes a very central role in the
TA. Once the TA was registered, CO would organize a planning meeting with PD, PC, EE, AE and JE along with NGO and farmers. In the meeting, the farmers will place a list of demands and the PD and PC will decide the possible work and ask the concerned JE to prepare for an estimate. Besides, there would be a transect walk on the same day to know the present status of the field. Once the estimate was prepared, the TA has to remit an Earliest Money Deposit (EMD), equivalent to 2.5% of the total estimate, and the PWD prepares bill for seed money advance of 10%. With the help of seed money, the TA would execute the preliminary works. Before work execution, the TA arranges for an Executive Committee meeting and the working committee plans the modalities.

Mukundan, (2005) reported about the modernization of tanks in Tamil Nadu that the “reduced capacity due to siltation” of erys is one of the Stated concerns of the programme, de-silting was not to be among the items of actual work undertaken. The actual work of “modernisation” is carried out by two departments of the Government, the Public Works Department and the Agricultural Engineering Department (AED). While the PWD (Irrigation) concerned with the repairing of bunds and sluices, overflow weirs etc. the AED handles only the “On-farm Development” (OFD) works – Cement lining of channels and construction of the necessary infrastructures for implementing “rotational irrigation” to ensure technologically that each cultivator receives the same quantity of water at regular intervals. These are aimed at preventing seepage losses in conveyance and bringing about “equity” in water distribution respectively. Betterment levies are collected from the farmers for the OFD works.
The success or failure of an irrigation system depends to a great extent on the active participation of an individual beneficiary in association with the community at large. Also it is concerned with allocation of water distribution, which is concerned with the “fairness” of allocation across economically disparate groups in a society (Shah, 2005; Mukundan, 2005).

A separate byelaw containing rules and regulations was formed for the TRPP in 1999 and TA followed the same viz. 30% of the income derived through auctioning (from trees and fishing) should go to CP. The income is earmarked for the maintenance of tanks and village infrastructure such as schools and hospitals besides minor repairs.

In addition to TA formation that deal with operation / maintenance work of tanks and proper irrigation scheduling, the EU made sincere efforts in forming clusters and federation similar to that of Erode - Bhavanisagar Pasanavivasayikal Kutta maippu Sangam (BPKS) (Pasanavivasayikal – Tamil ver. for farmers who irrigates from the tank water; Kuttamaippu – Tamil vern. for Federation; Sangam – Tamil vern. for Association).

As the TA is smaller than the cluster a separate byelaw is formed which is very similar to BPKS. The clusters are formed depending on how large is an ayacut area for a particular feeder. In Bahour there are totally two clusters. One is through bangaru vaikal and other directly from Pennaiyar and hence two clusters namely Sitheri vaikkal Pasanavivasayikal Pakuthi Kuttamaippu Sangam (Pakuthi Kutta maippu – Tamil vern. for Cluster) and Bangaru vaikkal Pakuthi
Pasanavivasayikal Kuttamaippu Sangam. Executive Committee Members from these two clusters will become GB members of Federation. There are totally 11 clusters in Puducherry. The main objective of this clusters and Federation is to organize water distribution among its members, including rapport with other adjacent federations, which deliver water to their field channels. The Federation of Water bodies of Puducherry was registered in February 2007 and its first meeting was convened by farmers and members of the Federation along with PWD and agriculture department officials in a successful manner. The Federation has 33 Executive Committee and the Executive Committee was selected from clusters leaving the OB of the cluster behind. 5 OB were selected for Federation. Federation formed is expected to solve the transboundary disputes in irrigation between different regions of adjacent tanks and ayacuts. The byelaw for the federation is in process and Peikulam tank of Madhurai district is taken as role model because of its vast experience (120 years old). There found to be slight institutional change in the byelaw and hope to get over by end of February 2007.

2.2.2. Basic concepts of TRPP

2.2.2.1. Rules

Before registration, the TA usually develops systems of rules and regulations known as “Byelaws”. These are Statements about things that members should do, or should not do. The byelaw includes management of the society (President, Vice president, secretary, Joint secretary, Treasurer and Executive Committee members), enrolment of members (qualification, restriction, classification and conditions if any; methods; entrance and fees and annual subscriptions), removal of members, rights/obligation and privileges, transaction by the society, constitution of the society, filing of returns as per act and rules, auditing, imposition of fine, the mode of custody.
application and investment of the fund, arrangement of transaction of day-to-day business, conduct of annual GB meeting (Plate 2.2), powers of Executive Committee, notice and quorum for Executive Committee meeting, exhibition of the register of members, the books containing minutes and the books of accounts, corpus fund and dissolution of the society. Some rules can be changed often, perhaps by an Executive Committee, but there is usually a higher set of rules, called a constitution, which can be changed only by some special procedures, such as a decision taken in a GB meeting.

**Plate 2.2. Annual GB Meeting – Utchimedu tank**

![Image of a GB meeting](image)

In older “traditional” systems, the rules are often not written, but are known to everybody; these are called “informal” rules (Abernethy and Heim, 1999).

- The line of control and authority in the government for promoting PIM need to be clearly defined.
- Since there are no specific rules and procedures at different levels of government functionaries for organizing farmers’ participation, specific rules and procedures therefore should be spelt out.
• The positive impact of PIM is seen in the economy of water use and consequent increase in the area irrigated (Sithapati Rao, 1997).

The need for a policy resolution of the government, amendment of irrigation acts, taking up pilot projects, a defining action plan for implementing PIM, simplification of procedures, organization of training, framing of bye laws of farmers' organizations, model memorandum of understanding between the department and farmers' organizations, incentives for the farmers and rewards for the government functionaries promoting PIM etc. He felt that initial implementation of PIM was a learning process, in which pilot projects provided base line studies. He advocated the launching of pilot projects through which the process could be perfected by trial and error (Hooja, 1997).

• WUAs should get financial support for the work of maintenance

• The relationship between the officials and the NGOs should be based on mutual trust and respect. The NGOs should be suitably recompensed for their work.

• Women's participation in PIM should be encouraged

• Success stories on PIM along with constraints faced and solutions found should be listed, documented and published

• Involvement of Panchayats (rural local bodies) in PIM may also be considered

• Modalities and strategies to be adopted for transfer of system to the WUA should be transparency clear for smooth turn over

• Since the main objective of PIM is to improve the irrigation efficiency, various models could be tried and the most suitable could be adopted
Empowerment of WUAs by removal of restrictions from the State irrigation act is necessary for promoting sustainable PIM.

Amendment of the irrigation act is necessary for giving legal protection to WUAs. However, the formation of WUAs should not wait for these amendments (Hooja, 1997).

Under the Constitution of India water is a State subject and therefore changes in their laws of irrigation would have to be made by the State governments. The Union government could pay an important role by rendering technical and financial assistance. The State governments have to frame their own water policies taking into account the State’s specific social and geographical conditions. Once State policies emphasizing the commitment to PIM are formulated the next step would be to translate the policy into programme. In most of the irrigation acts of the States, there is no provision for associating farmers in the management of water distribution, fee collection etc. Necessary enabling or mandatory changes have to be introduced to facilitate and accelerate farmers’ participation. Pilot projects could be taken up under the existing legal framework to understand what legal changes were needed to safeguard their interests. These legal provisions relate to an enabling law, formation and constitution of WUAs with a suitable structure and a transfer agreement or Memorandum of Understanding (MOU) between the department and the WUA (Patil, 1997).

The importance of rules and regulations to be followed by WUAs and their bye laws. These would include the extent of the jurisdiction of WUA, nature of membership, the minimum number of members, relation of WUA with non-members,
water rates, federation of WUAs etc. Another important legal instrument, he said, was the Memorandum of Understanding between the WUA and the irrigation agency, which specified what was to be transferred, how and when, modalities thereof, rights and obligations of WUAs etc. MOU is a binding instrument on both the parties (Patil, 1997). By providing necessary legal support, the WUAs would be more successful and sustainable.

2.2.2.2. Accountability/Transparency

An association is transparent if it is easy for any stakeholder (that means any person who is affected by the association actions) to find out information about its activities and its performance. The legal reforms in Puducherry have empowered the villagers and have brought more accountability into the functioning of the irrigation department. Prior to the Act, 1860 the department officials assumed themselves as providers and had no accountability towards the farmers. Today the department officials play a facilitator’s role to the TAs.

In the case of the TA, the Presidents and OB are accountable to their members. The Act has the provision for recall, wherein if the members of the TA are dissatisfied with the functioning of the President they can recall him/her from the position with a third majority of the members calling for the recall. This clause in the Act is a revolutionary step in the devolution process of management powers to the TA. In the past in other States, once a person is selected, he stays there for 5 years or the duration of office and has no compulsion to prove himself or perform, because he is guaranteed office for his full time. This has put social pressure on other Presidents to perform because of the social stigma attached to recall (Pangare, 2001).
2.2.2.3. Sustainability

TA is sustainable if it will continue to exist, under its present or expected future circumstances, for a long time. TA had concerned with two kinds of sustainability—physical and organizational sustainability. Physical sustainability means the expectation that the natural resources and the physical facilities such as dams, canals and structures which the farmers use continues to exist without deterioration. Organizational sustainability refers to the TA management to ensure smooth O and M of the resources and facilities.

2.2.2.4. Capacity building/training and exposure visits

Though the farmers were actively involved in the process of tank rehabilitation since 1999, the importance of training and to keep them abreast for the day to day needs had been taken care of, by providing necessary sharing sessions among farmers at different WUAs as well as organizing for exposure visits to the well developed agricultural model farms and irrigation commands in the commune. This is done to kindle the enthusiasm and interest among the tank users on all tank related activities and issues, with a holistic approach towards water, crop and system management aspects. This is common for all PIM organizations throughout India (Arumugam et al., 1997; Mukundan, 2005).

TA can also tap their members’ knowledge of local conditions. For example the AP (India) experience indicated that instead of irrigation department doing or contracting all maintenance work, the WUAs were given a portion of the maintenance fund to handle directly, much more maintenance work was done. However it is important not to idealise: some irrigation tasks require technical information that
farmers may lack and thus training or capacity building may be required (Abernethy and Heim 1999, Nikku, 2002).

Plate 2.3. Exposure visit to pilot tank – Kedar for farmers

Systematic training programmes and exposure visits were organized in Puducherry for all tanks each year so as to supplement and educate the farmers in order to make them self-reliant and enable to face challenges of day to day functioning of the association in all facets of its activities like tank rehabilitation/maintenance/management, crop management and upkeeping of accounts. Registered TA was taken to an exposure visit, which was arranged by TRPP for farmers of Bahour to other TAs. They were taken to Peikulam and Thenkarai Farmers’ Association in VOC District, Parambur Farmers’ Kanmoo in Pudukottai District and Kedar Farmers’ Association of Villupuram District (Plate 2.3.) that are functioning efficiently. These visits provided ample scope for the farmers to have better interactions with the established Farmers’ Association of repute and to exchange views so as to enable them to face their problems with a note of optimistic confidence. This training was appreciated by a greater extent by farmers and ensured greater
involvement and participation in the rehabilitation activities of Bahour commune by the farmers.

Apart from this, the TRPP in coordination of the Irrigation Management Training Institute (IMTI) at Trichy had arranged farmers’ training and exposure visits to sustainable TA and had a discussion/clarification on matters related to water and crop management aspects as well as on participatory role. The benefits of better water use application procedures in crop and water management were informed to the farmers through the video display by IMTI. Subject matter specialists in the areas of agronomy and water management from TRPP also visited the villages wherein question and answering session was organized in the village in Tamil, (the local language). This one to one exchange interaction had helped to clear a lot of doubts in the minds of farmers not only on tank maintenance and irrigation but also on crop management for different types of crops like paddy, sugarcane, banana, groundnut, sorghum, mavi gold and palm rosa (which is recently very popular in Bahour).

TRPP, in Bahour agriculture office frequently conduct an in-service training, by inviting minimum number (25) of farmers from all the tanks in the commune. The purpose of this training is to educate farmers about irrigation, fertilizer application and to quote the available subsidies in the agriculture department to small and marginal farmers.

Various studies on TRPP and subsequent interaction with growing communities provided valuable information on the deteriorating conditions of rural economy.

2.2.2.5. Functions of the TA

One of the first values of local organizations in any field is that they create routines and patterns of doing things. The regular patterns reduce “transaction costs”, the monetary, time and intangible costs (e.g. hassles) of interactions (Meinzen-Dick,
1999). This, in turn, increases the efficiency of doing things together. This is especially important for recurring and routine tasks. In irrigation, regular O and M activities such as water distribution, irrigation scheduling, de-silting tanks, feeder canals, surplus course and supply channels and strengthening the already existing structures such as sluices, surplus weir, kondams (with shutters) and cart road formation etc. that are carried out through TA ensures that these are done on a regular basis. This has been true for the study village, Bahour, where the TA members desilted the tanks, feeder and surplus course and removed the weeds in the tank regularly, which increases fish production and water-holding capacity of the tank water spread area (WSA). Proper irrigation scheduling helps in sustainable use of water for next season allowing the recharge of groundwater aquifer; this avoids usage of salt water from the bore wells, which in-turn increases the yield.

The tank rehabilitation works are done in Kuruvai (May to July) season up to month of August (the onset of monsoon) when the tanks will be relatively dry. Once the Kuruvai harvesting is over, the desilting of supply channel is started. Besides, the daily wage laborers have no other alternative work, compared to the subsequent samba season.

The recently introduced community based water harvesting strategies in Puducherry opens new livelihood options for resource poor farmers and the landless poor in vulnerable environments. Larger systems require a social organization that is able to regulate the use of the water more efficiently and equitably to the participating households, and that can ensure that all members carry out their responsibilities relating to maintenance and management of the tanks and irrigation structure. Thus, the TA was born. With the advent of the TRPP, a new life is given to the tank irrigation system.