VILLAGE OUTREACH

Water and waste in the villages

Against a background of villagers complaining that the government does not look after their water needs, Auroville is implementing a large water and waste project in three villages, with 'people's participation'.

Village ponds are an integral part of a village's water supply system

Whilst the Tamil Nadu government is responsible for the village tanks and bore wells, villagers say that government water management is entrenched in corruption and prioritises the needs of big businesses elsewhere in the state. They claim that the current water delivery system – bore well water pumped into the overhead holding tank, then delivered via underground pipe to three or four taps per street – is fraught with problems.

"The government sanctioned money for a quality pump from the bore well to the main tank in the village, but it broke down after one year," says Balu, who lives in Edaiyanchavadi village and works in Auroville's Financial Services. "The water usually comes from 4-6 a.m., and then again in the evening. People stand in line at the taps, and when someone jumps the line, there are fights. There was a murder 15 years ago over water."

The people feel forced to take matters into their own hands, and have been known to illegally tap water by digging and placing a pump on the main line to siphon water to their own houses. Due to the proliferation of improvised pits and taps in the street, street waste leaches into the illegal connections and then contaminates the pipeline water, generating water and mosquito-borne diseases such as diarrhoea and chickungunya.

In order to address such issues, Auroville's Water Harvest is implementing a project in the nearby villages of Kottakarai, Edyanchavadi and Sanjeevi Nagar to ensure equitable and hygienic water distribution, pond rehabilitation and tank de-silting, and to provide eco-san toilets and solid waste management. Undertaken with money from the Netherlands, the project has been implemented initially in Kottakarai because it has a sizeable population in a small area. Harvest worked with Kottakarai's village development council and offered water connections for Rs1,000 per household, with the panchayat contributing 1 lakh rupees to the project against Harvest's approximate 38 lakhs (Rs 3,800,000).

The water distribution project

Harvest's Dhandapani says the Kottakarai villagers are pleased with the water distribution system. "The individual connections have made things easier," says Sudarkar from Kottakarai. "For many years my village was in a difficult and unclean situation, with much water waste. Every morning there was fighting over who was first in the line [at the water tap]. Now, there is no shouting. It's very quiet."

Harvest now plans to implement a similar system in Edyanchavadi village, where it is sorely needed as the number of illegal tappings means that not a single drop reaches the public tap. Dhandapani says, "The purpose of the tank is zero! It's a difficult project for us."

Dhandapani points out that there is limited funding of approximately 32 lakh for the overall Edyanchavadi project, which includes salaries, rehabilitation of the five tanks and water supply to the whole village and colony. "People will get a connection within five metres of their house with 'pukkha pressure'. But Edyanchavadi's contribution is important. If we provide connections for free, people won't maintain the system. But the leaders are delaying their contribution. So far, they have only delivered 50% of the money."

The reason for the delay seems to be that Edaiyanchavadi village leaders want a commitment from Harvest to connect all houses. If Harvest does not deliver water connections to all streets, then village fights might start.

Balu concedes that Edaiyanchavadi village is hard to work with. "People don't think of the future. One family was using a rubber hose as an illegal pipe. They would stuff it with a stick to stop the water. When the pressure built up, the stick would shoot out, and the water would run onto the street for two hours. I told the family to stop wasting the water, but they said, 'You put in a good tap for me'."

In Sanjeevi Nagar village, Harvest has installed a reverse osmosis drinking water system, as the water there is undrinkable. This system can handle up to 10,000 litres per day. Each house pays Rs 50 per month to receive 20 litres of drinking water every alternate day. The system was also trialled in Kottakarai, but it failed there because no one kept collecting the money for maintenance once Harvest handed over the project to the village panchayat, and the system wasn't properly maintained. "Some people resist cooperating with Auroville," Dhandapani says. "There's resentment over land issues. We get better cooperation from villages that are further away from Auroville."

The other projects

Harvest's large project initially also included installing eco-san toilets and solid waste management systems, but these aspects of the project failed. Dhandapani points out that the villagers in Kottakarai did not initially accept toilets and preferred defecating in the open. Harvest provided awareness programmes, training and offered a generous Rs1500/9500 split of cost for a toilet in the house. "Around the installation period, about 60% of the new toilets were being used," he says. "Now, less than 5% are being used. What is needed is attitudinal change. It's difficult to get people to use a normal toilet, and one with eco-san composting is even more difficult. They don't believe that the ash will create compost." Given the lack of success with toilets in Kottakarai, Harvest will only install a limited number in Edaiyanchavadi.

Similarly, the solid waste project has not been successful in Kottakarai. Harvest provided training in the separation of trash, two dustbins per house, and employed three people to collect dustbins and recycle bottles. Dhandapani says the model worked for two years, and included 'giant clean ups' in the village. "When we handed the project over to the panchayat, it disintegrated. The awareness is not maintained. The end result is zero. We discuss with the staff why it's not a success. We feel frustrated. In Tamil Nadu, sanitation projects are just not sustainable, so we are not focussing on it too much. However, the international funding agencies don't accept the results."

The third component of the project is pond rehabilitation and tank desilting. Public ponds are common in all villages in Tamil Nadu. In the past they provided water and were used also as a popular swimming hole. Nowadays, they are used for washing clothes, as an open toilet or to water the cattle. This aspect of the project has had mixed results. Harvest recently cleaned the Edyanchavadi pond, but the leaders claim that Harvest did not finish the job, for which the village gave one-third financial contribution. But Dhandapani refutes this criticism, saying, "Harvest did what it promised. The village didn't provide funds for the extra work they asked for – fixing the steps around the pond." Harvest also attempts to create awareness to keep the ponds and their environments clean and not to pollute the water, but this is a long-term process.

As the project moves through the various stages of implementation in the three villages, Dhandapani says he is confident the individual house water connections will make a difference, but says the lack of awareness around water and sanitation throws into doubt the long-term sustainability of other aspects of the project.

Lesley

PLANNING THE CITY

New Water Task Force

Questions on how to secure Auroville's water supply and how to create and run one or more water distribution systems have been the subject of intensive research.

Since 1997, more than 10 studies have been executed by qualified Indian, international and Auroville experts. Yet, agreement on essential points seems still to be lacking as in November 2010, L'Avenir d'Auroville. Auroville's town planning department, initiated yet another task force "to study the overall vision as to the future supply and distribution of water to the city".

The studies which have been done so far are impressive. In 1997, an Auroville Water Board was formed which hired Mr. G.K. Bhat, an eminent hydrologist from The Action Research Unit (TARU) based in Delhi. The project, which cost 9 lakhs, studied in detail the water resources in Auroville and the immediate neighbourhood. The project was completed in two stages with a team of hydrologists, civil engineers, socio-economists and trained field workers from TARU.

In 2002, Auroville Water Harvest (AWH), in collaboration with several French scientists, studied the reasons for ground water contamination in the Kaluvelly watershed. In 2003, German engineer Harald Kraft from Berlin presented an 'integrated water management plan for Auroville' which gave a role to the Matrimandir Lake in the city's water supply. The findings of this plan were later rejected in two other studies, one by the German engineering office of Landesgewerbanstalt Nurnberg (LGA), the second by Dutch engineer Jeen Koostra.

Subsequently, in June 2004, a group of concerned Aurovilians formed an 'Auroville Water Group.' The group organized an International Water Conference in Auroville with the theme 'Sustainable Water Resource Management for Auroville and the Bioregion.' The Conference concluded that Auroville did not lack water, but lacked an appropriate water management plan and made a number of recommendations.

As a follow-up to the conference, a group of 15 Aurovilians and 5 international experts conducted an 'Integral Pre-Feasibility Study' that covered all aspects of water management and resources: rain, storm, ground, surface, waste and sea (desalination) water. The study included the surrounding villages, agricultural (irrigation and crop rotation) practices, household water-saving devices, industrial, water supply for fire-fighting and the sensitive topic of the proposed Matrimandir Lake. The study began in 2004 and was completed and presented to the Planning and Development Committee in 2007.

In that same year, Ms. Aude Vincent from France concluded her Ph.D. thesis, 'Hydrological and Hydro-geological Study of the Coastal Sedimentary Basis of Kaluvelli, Pondicherry'. This thesis, which dealt with the Kaluvelli lake and its surroundings north of Auroville, has also important findings for the Auroville area.

Also in 2007, Eri Salome, a Dutch expert, presented a study, funded by Vitens, a Dutch water organisation, on how a water organization for Auroville, in conjunction with the surrounding villages, could take shape.

In 2008, Aurovilian Dirk Nagelschmidt, who runs the Auroville unit Aqua Engineers, presented a 'Water Management and Infrastructure Master Plan for the Residential Zones 1 and 2' with cost estimates. The Plan covers drinking water supply, wastewater treatment systems including sewage piping network; irrigation (garden water supply);rainwater harvesting; storm water management; and fire water supply for fire-fighting. This study was commissioned and financed by L'Avenir.

In the same year, Andrea Blauth, a student of the Faculty of Civil Engineering of the Cologne University of Applied Sciences, started her Master's Thesis "Drinking Water Concept 2012 – Phase C – Conceptual Strategy for the Water Supply System for Auroville and its Bioregion." This project too was financed by L'Avenir d'Auroville, initiated and managed by Dirk from Aqua Engineers. The comprehensive study was completed and submitted to L'Avenir d'Auroville and AWH in May 2009.

CARTOON: LOUISE

In 2009-2010, Auroville newcomers Aton and Batel designed and facilitated the Integrated Sustainability Platform (ISP) to assist Auroville in using the existing resources better through collaborative planning. [*see Avtoday, September 2010 # 255*]. One of the main recommendations was the necessity to create a Water Board in Auroville that deals with all aspects of water management. The work of the ISP, however, is not being reflected in the constitution of the new water task force.

The most recent study, completed in December 2010 and partially financed by AWH, is a 'Report on the Ground Water Surveys to Augment Water Supply at Auroville Township'. The study, which was conducted by Thrust Geoconsultant from Chennai, leaned heavily on the Ph.D. thesis of Ms. Vincent.

A massive amount of information has become available through these reports. The new Water Task Force, consisting of Aurovilians who in the past have not been able to agree, should now be able to find points of agreement and identify areas that require further study. Hopefully they can then finally formulate the long awaited integrated water management master plan for Auroville's water infrastructure.

Elaine