

ADVANCED CENTRE FOR WATER RESOURCES DEVELOPMENT AND MANAGEMENT (ACWADAM), MAHARASHTRA

“The systematic process of establishing science needs to come into our view of development.” Himanshu Kulkarni’s statement sums up the belief that drives not only his organization, but also the project that he is handling for the Sir Dorabji Tata Trust (SDTT). A first time recipient of a grant from SDTT, Kulkarni is the executive director of the Advanced Centre for Water Resources Development and Management or ACWADAM, a Pune-based non-profit organization.

The purpose of ACWADAM’s project is to establish a practical framework to manage groundwater. This is being planned in such a way that it will be a blend of a scientific understanding of hydrogeological systems as well as participative actions from the people. The latter would be the implementation of established water management techniques like building check dams, reforestation, etc.



Shallow water table at Borkhaliya

ACWADAM’s SDTT project is in Bagli tehsil of Dewas district in Madhya Pradesh. The area is essentially arid and the locals depend on small-scale farming and herding activities for their livelihood. The impetus for the project is very obvious. The dynamics of an exploding population and diminishing resources make groundwater an even more precious commodity than it is. The survival of social and environmental needs of the coming years will be entirely dependent on the intelligent management of groundwater. ACWADAM believes that a resource and community focused, action-oriented research program is necessary to understand the problems of groundwater and evolve solutions that will stand the test of time to qualify as ‘sustainable’ strategies.

There is a rational fear that the depletion of groundwater is directly affecting the livelihood earnings of the rural poor. The concern is not a new one and there have been many interventions over the years to try and tackle the problem. The most successful among these has been for the community to participate in the management of their own local resources. The sense of responsibility that emerges from this stewardship is thought to be the most sustainable approach to long-term conservation.

In the project, ACWADAM will study existing literature of the region, map and monitor groundwater systems and understand the characteristics of the local aquifer system. This will be the foundation for the future plan of management. The organization has had previous experience in this area because of its association with Samaj Pragati Sahyog (an NGO that SDTT has interacted with frequently) and has already completed some preliminary hydrogeological research in 25 villages in the

Bagli area. It is imperative to distinguish between groundwater development and management. While conceptually linked to each other, development refers to the usage of groundwater while management involves a longer-term look at the resource including its judicious use with an aim to conservation. This is broadly what ACWADAM is doing.

The organization believes that groundwater management will be effective if wells are managed systematically by the local community. For instance, if there are more than three wells in one area, farmers will be taught to schedule the well use depending on the hydrogeology and the local hydrological conditions instead of the prevalent system in which farmers use a well depending on its proximity to the fields. This calls for a basic change in the attitudes of the community. Instead of treating the wells as the source of the water they will have to realize that the wells are merely a means to tap the water –

the true source of the water is the aquifer – and, it is this that requires wise management. This is the basis of ACWADAM’s proposed intervention.

Location specific data will be a big challenge for ACWADAM. Since the project will form the scientific basis for developing a strategy for groundwater management it is imperative that specific data is held for each location. This means a detailed study of individual locations within the specified hydrogeological zone. Plans for detailed mapping will include use of existing Remote Sensing data imageries as well as fieldwork to create a new set of data.

The project which has received a grant of Rs 4.73 million from the Trust, extends over a five-year span. This is essential because the data being gathered is dependent entirely on natural cycles. One ‘hydrological’ year consists of the following periods: pre-monsoon, post-monsoon, irrigation period and



Community well at Sitapuri



Private dug-out well

the next pre-monsoon. These periods will have to be mapped for all the 25 villages in the project's study. Time is also required for developing an understanding of traditional, current and future groundwater uses. It is only when all this is put together and analyzed that a plan can emerge for groundwater management.

The main hurdle for any rural project is usually acceptance by the community. In this case, there is less of a problem as the beneficiaries themselves have expressed a need for doing something about their diminishing water supply. Samaj Pragati Sahayog, has also expressed an urgent need for proactive action on the water-front. In fact, it is Samaj Pragati Sahayog's articulation of this need that led to their partnering with ACWADAM. The collaboration is a happy one

because it blends the science provided by ACWADAM with the people's participative process that Samaj Pragati Sahayog can handle. The venture is also expected to succeed in bringing science to the people.

The application of science in the field of development is an area that has long been neglected. In fact, the problem has been compounded because frequently science has been confused with technology, with the result that irrelevant, unnecessary and often expensive equipment is presented as a solution. ACWADAM has taken an innovative approach to the problem. Instead of mindlessly thrusting technology at the locals, the organization has taken the sensible approach of using science only as a guiding light. Bridging the gap between science and technology and between science and the masses is what this project is all about.



Dug-out well at Siwanpani