Chapter One

Experiences of ARTS in Providing Irrigation Through Small Water Harvesting Structures to Rural Poor in India

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Andhra Pradesh is situated in the southern part of India. The state has many indigenous tribal communities who live far away from cities in the rural areas. ARTS works with 11,459 such families in 242 villages of the Srikakulam and Vizanagaram Districts (Seethampet, Veeraghatam and Burja Mandals of Srikakulam District Kurupam, GL Puram and G.M.Valasa Mandals of Vizianagaram District) in Andhra Pradesh. Many of the tribals have their own dialects, with more than 30,000 dialects spoken in all of India.

Life in these Indian villages is not easy. Rain-fed agriculture is the main occupation of the people, and its success is dependent on monsoons. Usually, the rain gods from the southwest monsoon hit our villages by the first week of July, but unfortunately rains have not reached the villages in the last three years. This hurts the crops and harvest, leading to hunger and the forced migration of adults to cities in search of work, leaving behind the young and the old in the villages. The adults who migrate return once every six or ten months, bringing back the savings they have earned in the cities.

As a result of last our last year's work, these people now have some hope. The Organization has taken up watershed and small water harvesting structures construction and renovation programmes. The programme impact is explained below through several case studies.

Watershed concept

Over the past year, our the watershed approach has been applied for the purpose of arresting rainwater runoff, rainwater harvesting, and in situ soil and moisture conservation. Community based watershed development has become the guiding principal for rejuvenation of natural resources, especially land and water. A micro watershed is a hydro-geological unit encompassing all the land and life within a drainage basin. The basin drains by a network of rain-fed streams from the ridgeline of the area to common point, which is known as the outlet.

Goals & Objectives

The watershed development programme was started with the objectives of harvesting every drop of rainwater for the purposes of irrigation and plantation, including horticulture, floriculture, and pasture development. Our broad objectives extend over all development of rural areas, through Gram Panchaayats, mitigating the adverse effects of extreme climate conditions, restoring ecological balance by harnessing, conserving and developing natural resources, encouraging villages towards sustained community action for maintenance of assets, and promoting the use of simple, easy, and affordable technological solutions.

Inputs

In Srikakulam district, the watershed has supported sustainable development in eighteen villages. The local people's participation in these projects has provided employment in the villages, helping to reduce migration to a great extent.

Results

Because of the construction of check dams, gabion dams, farm ponds, and percolation tanks, more than 200 hectares of additional area have been brought under irrigation, providing resources that are lifesaving. The treatment area has been brought under farm forestry and casuarinas plantations. These are low cost plantations with returns after a rotation of five years of almost Rs. 75,000 from one hectare (by a conservative estimate.) Under the watershed development program, the Organization introduced the concept of productivity enhancement and enterprise promotion in the villages. The gains are much more rapid and profitable through these programmes than from conventional natural resource management approaches.

The watershed development program has played a significant role in developing human resources in the area through exposure visits to observe the best practices throughout the country and through classroom training sessions.

Impact of the project

- Because of the availability of 15,870 man-days for 350 people, migration, in the Vonigedda watershed area, has been checked to some extent. An amount of Rs 1,054,733 was spent in the project towards this goal.
- Renovation increased the capacity of the existing fourteen tanks and also resulted in an increase in the groundwater level. The tube wells have also shown a remarkable difference in water levels. These conditions are favorable for jute processing and aqua culture, and could provide irrigation for 720 acres.
- Crop diversity has been practiced on about 50 hectares of land, helping to improve the soil health.
- 267 families have established plantations on 230 acres of land, producing 18,500 mango, cashew, drumstick, amala, jackfruit, soapnut, etc.
- Soil and moisture conservation have been taken up in 380 hectares of land, allowing 380 acres to be brought into cultivation with these works.
- Because of 7 gabians constructed to check the water velocity in the streams, good yields were obtained in 25 acres of land.
- About 2,963 cubic meters of water absorption trenches were formed in the foothills to check soil erosion. This has improved conditions to grow cashew, turmeric and pineapple crops.
- In sloped lands, continuous contour trenches of 1,703 cubic meters in volume were formed. These helped check soil erosion and recharge the ground water, keeping the moisture available to the plants.
- Stone bunds have been constructed across hill slopes to check soil erosion. They helped in good crop returns from cashew, pine apple, turmeric, papaya, ginger, tamarind, and banana that were cultivated on the hill slopes
- The floods that occurred last year have resulted in a large depression in the soil in the down slope of the Pamuguda check dam. This impeded the water flow to the lands of Kusumiguda, Kusumi, Patruniguda, Santhamalli, Darimalli, Naidumalli, and Masalaguda villages. These farmers experienced losses in crop yields. An overflow weir had provided solutions to the problem of siltation of two acres of land. Now the water gets stagnated in the tank.

- The tank renovation work done for Mallamma cheruvu, Sunnam cheruvu, Pamugadda cheruvu, Malli cheruvu areas has resulted in increases in the capacities of tanks. This helped in bringing 98 acres of land into cultivation.
- On twelve acres of wasted lands in Santhamalli, Darimalli and Chilagam villages, the wastelands were cleared, farm bunds were strengthened, and land leveling was performed. This project enabled farmers to start cultivating pigeon pea, maize, horse gram, finger millet and vegetables in these lands.
- In the Kusumi area, there was around 70 acres of titled land, but the records were lying with the ITDA and people lacked information about their lands. ARTS has facilitated the subdivision of the land and assigned it to the tribal people for cultivation. People started planting cashew and other crops in these lands. The project has facilitated titles for 35 acres of land for 20 families in the same area.
- High migrations in the project area caused many children to drop out of school. Due to employment creation in the watershed area, people started returning to their villages. Around 22 such children were identified and joined in the Child Labour School run by ARTS

In this presentation, we give an example of our work in Dorajamma village of GL Puram, one of the places where ARTS is working. There are 54 tribal families living in this village. The last three years the rains failed and the people faced drought, with the villages suffering the worst hit during the past year. Eighteen families migrated to Vishakhapatnam and Rajamandry in the neighbouring East Vokavari District to find agricultural labor work. Of the remaining families, some worked as labourers in the lands of rich landlords who have irrigation facilities and some went to the forest and cut fuel wood to sell in Kurupam. Women and children have become involved in the collection and sale of forest products like Mahuva (the flowers are used for brewing liquor and its oil is used for cooking), tamarind (a sour fruit used in curries), and soapnut (fruit used for washing hair) to the local traders. This situation not only forces children to leave school, but also forces them to work in the fields. Due to low returns from agriculture, people are forced to borrow money from local traders at a very high rate of interest. The repayment of this loan is usually done in kind. Children are stopped from going to school and are made to raise livestock that belong to the upper caste. Due to non-attendance of children in school, the only school in the area, called “Girijan Vikas Kendra,” was closed.

Hill Stream – A Ray of Hope

On village visits, ARTS discusses with villagers, the common problems they face. We then guide them in finding solutions to such problems. For example, the people in Dorajamma village wanted water for irrigation. Together thought of building a water tank around a small hill stream called Mogadala Ghati.

The people collected stones, sand and worked voluntarily to construct the check dam. ARTS and Action Aid India paid for cement and masonry wages. The check dam was completed by June 2000. This check dam has helped in irrigating 90.70 acres of land. The major crop grown is paddy and the output has increased from 8 quintals (1 quintal = 110 kgs) to 20 quintals per acre. The tribal people in this village are extremely happy with these results.

The improvement in the living condition in this village has encouraged villagers to think of the significance of sending their children to school. Some representatives from the village approached the department for tribal development in the local government to request an education center in the village. The department agreed to start a Residential School in the village with the condition that the villagers would provide land for the construction of the school building and meet the expenditures of its daily activities. The villagers happily contributed five acres of common land (a piece of land under the control of the village Panchayat, the village-level self-governing body) for this purpose. ARTS and Action Aid India have agreed to construct sheds to support the education program. The residential school is functioning with two sheds constructed by ARTS, which accommodates fourteen children.

Check dam fulfilled my dream-says Palakonda, Seethampeta of Dorajamma village:

> “My wife, daughter two sons, and I were just about managing with the limited yield we were getting from the three acres of land I owned. I was cultivating Ragi, Jowar, [local types of millets] and horse gram. Due to drought, four years ago, I shifted my family to the East Godavari District. We did not come back to our village for three years because of the continued drought situation. In March 2000 I heard about the check dam proposal of Magala Ghati. I returned to my village with my family and we participated in check dam construction works. The check dam was completed in June 2000. Since then we stayed back in our village and I also participated in the training conducted by ARTS on how to grow more on the limited piece of land.

> It was unbelievable for my family and me that now time the yield from my land is 21 bags per acre, while earlier it was only 8 bags per acre. The earlier production from my land was insufficient to feed my family. Now my wife and me are happy that we are able to feed our children as well. We can sell a part of the paddy for profit, and also store a part of it for meeting difficult situations.
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> Today I am proud to say that my three children are studying in the residential school."

The small contribution of our work plays a vital role in our efforts to eradicate poverty in this remote area of India that is so much in need.