

Shree Padre

In 1985, the Tarun Bharath Sangh (TBS), a conservationist orientated NGO, started an initiative in Alwar district to combat rural poverty. In the years that followed, they mobilised the rich experiences of traditional water harvesting and created one of the largest nature regeneration movements India has seen. Revitalising the water harvesting tradition and reforestation recharged wells. This set in motion a whole chain of economic and ecological improvements that created new hope for the local villagers. One of the results of this initiative was the transformation of local rivers from ephemeral monsoon waterways into perennial rivers.



The Johad is a structure bound on three sides by the natural slopes of the hill. The fourth side, a mud wall – usually semi-circular in form – holds back the monsoon run-off.

Harvesting the monsoon: livelihoods reborn

Degradation and poverty

Alwar district lies in the Aravali mountains, 400km SW of New Delhi, in the Indian desert state of Rajasthan. The dense forests that covered this watershed were an integral part of the local rural economy until the 1930s when the colonial government abolished communal rights to forest land and allowed timber companies to exploit their resources. The hills were stripped of the timber that protected their thin soils from the fierce erosion of the annual monsoon. As water flowed away unchecked, rivers dried out, the ground water level fell, and the region's agricultural potential was seriously affected. When TBS first came into contact with the local

population, villagers were living in poverty. Their main form of subsistence was small-scale herding and cultivating. Most men of working age had migrated to the cities in search of work and the women spent long hours walking to collect water. Community life was severely impoverished.

Gram Sabhas taking control

The TBS identified the lack of water as the major cause of poverty (Box 1). In their discussions with the villagers ways of tackling drought and erosion were explored. Regular village meetings or *Gram Sabhas* were established and each household sent its representative. During these meetings

the elders described the water harvesting practices used in the past. Among these was the *Johad* (see Photo 1), a man-made tank built at strategic locations in the hills.

The TBS encouraged the re-establishment of such traditional techniques but it was also committed to waiting for the full participation and support of the local people before offering financial or material help. It was the villagers who had to decide whether or not they wanted to build and maintain *Johads* and check dams and they would only do so if they were convinced of the benefits.

The TBS worked towards developing a high level of understanding, commitment and participation.

Building a water harvesting structure like a *Johad* required cooperation and planning. The best location for catching the maximum amount of run-off had to be selected, soil characteristics studied and the relationship between the amount of water expected and the size of the *Johad* accurately assessed.

Once a village decided it would build a water harvesting structure with TBS help, it had to pay 25% of construction costs itself either in cash or in *Shramadan* (voluntary labour). Members of the *Gram Sabha* then made a list of the families most likely to benefit from the *Johad*. They were expected to provide the *Shramadan* and, if necessary, the land on which the *Johad* would be built. The TBS would then accept responsibility for providing external inputs such as tractors to trans-

Box 1. Tarun Bharath Sangh

Dr Rajendra Singh is head of Tarun Bharath Sangh. As a doctor practising in the ancient tradition of *Ayurveda* he was familiar with treating imbalances in the human body. As a farmer and conservationist he saw that imbalances in the way man used Nature's resources often lead to chronic poverty. In the drought-ridden district of Arwali he asked himself the most basic question: "Where is the water". The only water available was rainwater.

His interest in watershed development came from the people's need for water. If there had been no traditional water harvesting knowledge in the area, TBS would not have been successful in harvesting rainwater or in regenerating forest cover. The local elders, however, remembered the *Johad* and with the help of TBS volunteers and funds they were able to made successful use of the traditional knowledge that been ignored by government and western science.

An important element in the success of TBS's water harvesting efforts was the attitude of the villagers. They felt that the *Johad* was their own asset and that their future was linked to it. They were ready to struggle to re-establish their traditional ways of resource management and to draw up the regulations necessary to protect their environment and forests. The TBS supported the villagers with the funds it received from foreign contributions, assistance and volunteer labour.

port soil, diesel, cement, and the money to pay the masons. All other inputs had to be raised locally.

Once the *Johad* has been built, the members of the *Gram Sabha* discuss management and maintainance. *Johads* have a number of water outlets that enable villagers to regulate the flow of water to the fields and initially the fields closest to the village will receive the most moisture.

Jal-Jameen-Jungal

While the *Johads* improved water availability, the problem of erosive run-off continued and sediment gradually clogged up the new water storage space. The problem was taken up by the *Gram Sabhas* and, working with the conservationists of the TBS, villagers became increasingly more conscious of the relationship between *Jal, Jameen and Jungal* (Water, Land and Forest). This consciousness was further reinforced by the street plays and *Padayatras* (foot marches) that the TBS organised each year for those unfamiliar with the nature conservation movement.

The *Gram Sabhas* decided to raise a green cover and allow the forests to regenerate. Together with the TBS they tried to create conditions which would allow dormant root-stock and existing tree cover to re-establish itself and grow. Rules were established. The first step was to prevent camels and goats from grazing new growth. No one was allowed to cut live twigs and only dried branches and leaves could be sold. No living branches could be cut without permission from the *Gram Sabha* and penalties were strictly imposed. Villagers also expressed their common commitment through ritual, celebrating *Rakshabandhan*, for example, by tying a knot around trees and plants as a token of their commitment to protecting greenery. As a result of their efforts the proportion of forest cover on the Aravali mountains has risen to 40%, an increase of 34% in 15 years. Their target is 66% cover.

Rivers reborn

One of the most spectacular and unexpected results of this revitalisation has been the gradual return of water to the rivers in Arvari. The TBS did not start out with the aim of bringing perennial flow to dry rivers like the Aravati. When *Johads* were built and water run-off arrested, percolation gradually recharged underground aquifers and as these slowly filled up, excess water started to flow into the rivers. Traditional water harvesting techniques have realised the full, natural benefit of percolation from the catchment. In the 503 sq. km catchment of the River Aravati, for example, villagers built some 200 water harvesting structures over a ten-years period. As a result the river began to flow for longer and longer period each year until, in 1995, it flowed the

whole year round, a phenomena that even took even the village elders by surprise.

But with the water came the bureaucracy. In 1996 the villagers of Hamirpura living along the Arvari were told that a contractor had been given a licence by the state government to start fishing in the river. Under law the river is the property of the government and now that there was water, the government was ready to take 'control' of its resource. But the villagers demanded a say in its management. Working with TBS they recently set up a River Parliament, locally known as the Arvari Sansad – an association of all the villages built along the river. They adopted a constitution to manage the river. If it succeeds this 'people's river parliament' will be an important example for the future (Mahapatra 1999).

Livelihood reborn

The ideas developed by villagers and the TBS have had considerable success. Now, more than 15 years later, 650 villages in the Alwar district have a *Gram Sabha* and 3000 water harvesting structures have been established. *Johads* have proved both durable and effective. In the floods of 1995/6, for example, villagers saw many government built dams being washed away while their carefully built *Johads* remained intact. Revitalising the *Johad* tradition and regenerating forest cover have brought many benefits. In 36 villages the water table has risen six metres. Wells have been recharged and moisture levels in the fields have been improved. Today, villagers no longer wait for financial support from the TBS: they take the initiative themselves and as their standard of living slowly improves, they are better able to meet the costs of building and maintainance themselves.

With water more readily available, buffalo breeding has received a new impetus. The supply of milk increased and regional milk products are again being offered for sale. Grain production is growing and the dis-

Box 2. Women at work

Women are often the ones most affected by a lack of water and TBS found that they were quick to respond to water harvesting ideas. Gyarsi and Phoola, for example, were the last two women in their village high in the Sariska hills. Together they set out to build a traditional water harvesting structure or *Johad*. They did all the physical work themselves and once every ten days they were visited by a TBS volunteer. Construction took them four months, but now water can be stored for longer and longer periods.

trict which once imported grain now sells it to its neighbours.

One villager told 'Down to earth' magazine: *"Forests were cleared for the urban people. I lost my agriculture and had to slave for the same people who destroyed it. The freedom of the country doesn't mean anything to us. I became free in 1995, when I cultivated my land again for the first time. For villagers, freedom means freedom from poverty. This comes from self-sufficiency"*

Men who were pursuing menial jobs in the cities have started to return to their homeland. Women, freed from the time consuming task of fetching water, have more time to invest in community life and in one of the poorest states in India where the average literacy rate is 20%, more and more children are attending school. Along with these improvements came a renewed sense of 'self-respect'.

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Women have taken outstanding initiative in water harvesting work.



Photo Shree Padre