

# Success Stories in Water Harvesting from Bajeeena and Naila Villages, Almora District, Uttarakhand

**Bikash Sharma**, bsharma@icimod.org

**Asim Mirza**, amirza@teri.res.in, and **Rakesh Prasad** rakeshp@teri.res.in

**Water scarcity is a growing problem for countless mountain communities and causes great hardship to women and girls, who must spend many hours each day collecting water from distant sources. This article focuses on two successful water harvesting projects in Bajeeena and Naila villages of Almora District, Uttarakhand, India.**

The Energy and Resources Institute (TERI), with support from UNEP and ICIMOD, implemented a two-year pilot project from April 2002 to September 2004 in the hilly districts of Bajeeena and Naila in Almora, Uttarakhand, and in Kotla and Nager villages in Solan district, Himachal Pradesh, India. The pilot project was based around participatory action research and sought to build the capacity of women's groups and empower them in water and energy management practices. Various water and energy related technologies were implemented based on the prioritised needs of women and community members. The project was implemented in coordination with the local partner organisations, HOPE in Uttarakhand, and DEEP in Himachal. This paper focuses on two successful water harvesting experiments piloted in Bajeeena and Naila villages of Almora district, which have had a positive impact on the livelihoods of the women in these villages.

## **Recharging traditional water springs is possible: the case of Bajeeena**

With a population of 70 households, Bajeeena is a typical hill village situated on both sides of the main road 14 km away from Ranikhet, the nearest town. A 'naula' (traditional water spring) is located in the vicinity of the village. Due to deforestation and the consequent drying up of the water spring, villagers in Bajeeena had been facing an acute shortage in water, especially during the dry season. During summer, the water discharge from the naula decreases considerably and women have to wait long hours to fill their pots from the trickle that comes out of the spring. The discharge was measured in July and was found to be insufficient to meet the villagers' needs. Although many households were connected to

pipled water supplied by the government, the supply came irregularly and was insufficient to meet their needs. The water crisis was reported to have started in the last few years, primarily due to deforestation. Women point out that the plantation of pine trees surrounding the vicinity of the water spring was also to blame for the decreasing water table in the area.

To overcome the problem women's groups in Bajeeena came up with the idea of replanting the barren hill slope above the water source with indigenous trees and other plants. After carrying out a detailed investigation of the area, TERI, in consultation with the women's groups and local NGOs, supported the idea. The women constructed 14 micro reservoirs spread over the barren hill slopes to trap and store rainwater, which would percolate through the slope and recharge the traditional water source. The women also planted 2500 saplings of medicinal and horticultural and fodder and fuel species on 5 ha of the hill slope to ensure slope stability and generate income, and to ensure the availability of firewood and fodder. The women of



*A micro reservoir for recharging the traditional spring in Bajeeena, Uttarakhand*

Rakesh Prasad

Bajeena also controlled grazing through social fencing. The money that they were able to raise for operation and maintenance was also managed by the women themselves.

After the first monsoon the village spring was discharging more water and the small water tank constructed to store the surplus water was overflowing. The women then decided to construct a larger water storage tank to collect the overflow, even before the pilot project was completed. They took a loan of IRs 40,000 from the bank and contributed labour to construct the storage tank.

### **The construction of micro reservoirs in Bajeena and an infiltration well in Naila has overcome water scarcity in both these villages.**

"We have succeeded in recharging the water spring and God has listened to our collective voice and efforts," says the women's leader in Bajeena. Influenced by this success, the local Panchayat government replicated the practice in the neighbouring villages of Khagyar and Kothiyan.

While the full impact of this innovation is likely to be felt only after several years, available water in Bajeena has already doubled. The Bajeena women indicate that even during the dry season the water discharge is more than in the past. This innovative water harvesting method can go a long way towards addressing water scarcity problems, broadening livelihood options, and can also help improve the environment in many parts of the Himalaya in a sustainable way.

### **Infiltration well technology: Naila**

Naila is a small village located at an altitude of 1500 m and is approximately 10 kms from Ranikhet.



*Infiltration well constructed in Naila, Uttarakhand*

It is about one km away from the main road. Water shortages in this village were acute and women found it hard to meet their immediate household water needs. Naulas are the only source of water in this village. Many reasons are cited by the villagers for the water shortage. Some indicate that water sources have either disappeared or water discharge has declined after an earthquake. Others indicate that the heavy plantation of 'chir' pine trees caused a drop in the level of the water table. Women were forced to spend four to five hours a day collecting water from a water source that yielded only a trickle. Available water

of 475 litres per day was much lower than the village's requirement of 3660 litres per day, assuming a per capita daily need of 30 litres. Women sometimes spent the whole night collecting water from the underground spring. This situation was becoming worse over time, and especially during the summer when the women had to spend entire nights waiting in line to fill their vessels. Often there were quarrels among the women over water.

Infiltration well technology was identified as the only feasible option to meet the water requirements of the village. A large underground collection chamber was constructed to collect water. After sealing the chamber, a hand pump was inserted in the tank to pump out water.

A woman contributed land for the construction of this innovative scheme since the water source happened to be located on her property. Naila women collected IRs 200 from each household for the construction of the well, which took a whole month. Now each woman contributes a token amount every month for the well's operation and maintenance. The women have also introduced an innovative way of managing the system. The responsibility for opening and locking the hand pump is rotated every day among members. The pump is opened for two hours in the morning and evening, then locked up with an iron chain to allow the well to recharge. Although water is still relatively scarce in Naila, the infiltration well technology has saved women hours collecting water.

The formation of separate women's groups and their organisational capacity building, gender sensitisation sessions, and community mobilisation have clearly helped the project succeed. Empowering women at the community level has made it possible for them to address and prioritise their water and energy needs.