

The Chouka System



GVNML began with the chouka, or square system in 1979, and it continues to be integral to their work in natural resource management. Initiated by Laxman Singh, the founder of GVNML, together with the local community, the simple water harvesting system was created with dramatic effect. It is an effort to make the most of rural Rajasthan's average annual rainfall of 440mm and ease the problems of water scarcity.

A chouka system is made out of a series of shallow rectangular dug out areas that work together like sponges, collecting the erratic, unpredictable monsoon rains and helping them meander down the natural slope of the land, passing from chouka to adjacent chouka. By constructing the pits at intervals across the slope, the runoff water is intercepted and retained on the field until it is absorbed. This increases ground water recharge and allows more water to be held in the soil profile. A 2km by 1.5 km area of pastureland would have choukas dug around the edge of the area with two foot high bunds creating a barrier surrounding the field. The fertile central area is where the prime grazing happens. Each chouka must be no deeper than 9 inches to stop deep water causing damage to grasses, so channels divert excess water to low lying water tanks (nadis), or ponds for future use as surface or ground water. It is drained off safely, without erosion and without loss of precious top soil. Without the choukas the water would be lost as runoff, taking with it the finer, fertile sediment rich in organic matter.

Choukas have transformed the dry wasteland surrounding Laporiya into grassy village common lands perfect for grazing. The cows love the grassy patches that grow on the fertile pits after a good monsoon. If the rains are good enough villagers have no need to buy fodder for their cattle and can fertilise their crops naturally using the cattle dung. Choukas enable the growth of dozens of different types of fodder plants, medicinal herbs and encourage birds. However, proper implementation of a water management system like this requires detailed knowledge of the slope of the landscape, rain patterns, native grass species and soil content.

The chouka system was at first met with scepticism by the scientific and agricultural industry, but their huge success has established GVNML as an organisation intimately familiar with indigenous and sustainable techniques for watershed development. Around 1,600 hectares of new choukas have been built through GVNML. There is no doubt the system has helped Laporiya become more self-sufficient. There is less migration to the cities from villagers looking for work and farmers can now grow a variety of grains and vegetables. Choukas help improve water availability during scarcity periods and in drought years and go some way to stabilise income even under unfavourable weather conditions.