

# Water Traditions

*The Malnad story*

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*The Malnad region is home to hundreds of stories on water harvesting. While each is different, one is more interesting than the other. However, it is unfortunate that this knowledge is quickly being forgotten. This article contains information about some unusual, but fascinating water conservation practices of this area.*

About 35 years ago, the Shiliga tribe of Uttara Kannada District built an embankment on the Dabbehalla tank at Sirsi. About 125 feet in length and eight feet in height, this structure stands erect even today and ensures availability of water all through the year. Constructed using local material, it is strong enough to withstand the onslaught of rainwater during the torrential monsoons.

And yet, there have been instances in recent years where dams built using concrete and iron have been reduced to rubble during heavy rainfall. Such dysfunctional concrete constructions erected by the Government costing lakhs of rupees can still be found in almost every village.

So, how did an ordinary embankment, built by the unlettered Shiligas, score over the modern dam?

This is a practice born out of traditional experience called *Jarukattu* in Kannada. The name suggests its dual role – allowing free flow of floodwater during the rainy season and allowing water to collect in pits in summer. This embankment, which closely resembles the check dams of the plains, is a system where irrespective of monsoon or summer, a certain volume of water always stands in a pit and the excess water flows down from the higher slopes.

The outer portion of the embankment is structured in a manner to ensure that the force of the gushing water jumps over the obstruction and runs down the slope. In order to ensure that the stones do not break away from each other, each stone is joined to the other very securely without the use of cement or iron. Mud and leaves are applied to the insides of the embankment to prevent the seepage of water.

For this, local resources that are available have been used. The base of the embankment is 15 feet wide and as the construction tapers towards the top, the

mouth is only four feet wide. Some portion of the sediment that flows along with the water during heavy rains sticks to the insides of the embankment. The gushing water carries the excess sediment over the embankment. Thus, over the years, the possibility of sediment accumulation is almost negligible. The greater the difference in height between the water collected in the embankment and the place where it falls down into the stream, the faster will be the flow of the flood water. Thus, even in the rainy season, the water does not cross the bank to enter the agricultural fields.



After finding the exact spot in the stream that facilitates the flow of water to the fields, the embankment is erected at a specific elevation. A natural rock bed is the ideal location for the construction of such a dam. In the Malnad region where areca nut and paddy are grown, it is beneficial if the streams flow at a depth of about 8-10 feet lower than the fields. However, due to the force of the water cascading down the hills, soil erosion increases and this could create a situation where the stream flows in a moat that is 40 - 50 feet below ground level.

Since the bank of the stream mainly has agricultural land, it would not be possible to restrict the flow of the stream flowing at such a depth as any bund or bank will be redundant. Only the *jarukattes* are beneficial as they deposit the sediment on the floor of the stream and store volumes of water. Technically speaking, check dams are not suitable for Malnad and engineers say that these get washed away due to the force of water. Such dams are of value only in the plains.

There are several examples of villages here that still derive benefit from the *jarukattes*. But unfortunately, the tradition and skill of erecting *jarukattes*, which are models of water and soil conservation has declined.

### Land partition and effective water systems

In Malnad, at a time when people depended only on tank or stream water for irrigation, agricultural families follow a unique system of water utilisation called as *Niru Bari* while getting their land shares. In this, when a family split and 4-5 brothers were given their shares of land, the village committee would not agree to allotting land to one person at only one place. The hidden agenda behind this was good water management and mutual co-operation in sharing nature's gift of water. If one person is given land in only one place, he becomes possessive about water and may withhold flow of water to the lower fields owned by one of his brothers, thus

causing distress to the family. Instead, if he were allotted one portion of the land at a higher level and another portion at a lower level, any disruption created by him in the flow of water, would affect his own field in the lower level.

This methodical system of allowing water to flow from one field to another is called *Niru Bari*, meaning availing water turn by turn. Everybody is committed to the unwritten rules of *Niru Bari* based on a principle where a defaulter is denied water. As a result of this, everyone in the village has to cooperate, because unwillingness to do so would only invite trouble for them.

The tradition to develop agriculture wherever water was available, continues till date and in turn fosters co-operation by intelligently sharing river or stream waters for agricultural purposes.

### Water drenching

Traditionally, with the onset of winter, the farmers of the village erect a mud embankment to the canal of the plantation by using banana stems and areca strips. During summer, in order to maintain the greenery in the fields, flowing water is embanked. This is the fruit of traditional wisdom.

In the Karavali region, a special method of water drenching is undertaken by containing water in canals. In order to do this, a rope is tied between two areca trees and part of the rope is allowed to hang. The broad spate that grows at the bottom of the bastard sago tree (*Caryota Urens Lin*) is attached to a rope. At the end of this is a container used to scoop the water out and drench the field.

Even before the crack of dawn, the bare-bodied human machines are at work. As the water gushes in, the sound created by its gurgles is a delight to the ears. Each time the spate is lifted, about 10-15 liters of water flow out effortlessly. This practice entails constant labour for seven months in a year and helps maintain the green of the plantation. The embankments built for water drenching are helpful in groundwater conservation as well.

The bastard sago trees that help in water drenching have an amazing relationship with irrigation. These trees are normally found in evergreen and semi-evergreen forests. The dense vegetation and water sources of the valley are the main support for agriculture in the region. Forests are a boon to Karavali. However, due to the destruction of forests, there is a grave danger of water scarcity.

In 1980, three villages, Mururu, Kallabbe and Hosada of Kumta Taluk collectively spread over 400 acres of areca cultivation. The area had only about 50-60 irrigation pumps as farmers undertook construction of hundreds of embankments in their plantations. In 1996, records show that the same 400 acres had as many as 450 pumps! Even marginal farmers had to install pumps for their water needs for if not, then they would have to witness the death of their crops. In earlier times, as soon as the monsoons ceased, preparations for irrigation would commence and

embankments were constructed to irrigate the lands. But today, the situation is such that only electric pumps are used to draw water from open wells. Since traditional methods are on the decline, only wires have spread their tentacles all over the plantation.

### **Water tradition as documented by Buchanan**

In the town of Bhatkal, on the northern bank of Sankadahole, the villagers built eight mud embankments between November 17 and December 16 every year, by themselves. Buchanan, who travelled through the forests and valleys of the Western Ranges and visited Bhatkal on February 18, 1801 observed this. This rare document informs us that the farmers of Bhatkal knew how to stop the running water about 200 years ago! Buchanan was in Sonda in Sirsi on March 13, where he recorded the method of irrigation through the building of bunds for the main canals of the plantation and providing water to the areca crop in summer. A reconnaissance journey undertaken in 2001 along the same route as that of Buchanan found that even today Bhatkal and Sonda follow similar methods of water conservation.

*Jaarukatte, Adike dabbe kattu, Balekunte kattu*, which were constructed using local materials and resources continue to be used in some places.

The Kadambas, who ruled over Malnad, built a 165-acre tank near Banavasi in the fourth century. This is the second tank in the history of Karnataka's water harvesting systems, signifying that kings and rulers conquered water sources before conquering a town. Sonda in Sirsi was called Sudhapura and by 1763 A.D. about one lakh people lived in an area of about 3-4 kilometers. The kings of Sudhapura who built this town on the banks of the Shalmala River did not depend on the river for all the basic requirements of water; instead they implemented several schemes for harnessing rainwater.

An inscription of 1558 by Svarnavalli states that Arasappa Nayak of Sonda, while praying for progeny, constructed many temples and also tanks and ponds as part of his endowment. In another instance, there is the story of a beautiful stone tank called *Muttina kere*, built near the Jain monastery. Legend has it that Bairadevi, wife of an ailing Jain king prayed to God for her husband's recovery and vowed to build a tank at a cost equivalent to her pearl nose ring. As her prayers were heard, the tank was her votive offering. The tank is nearly 1000 years old but is still in a pristine condition. It is rightly called "Pearl of a Tank", as even in the summer it is full of water.

It is a common practice to construct temples and monasteries and build a tank next to them. There are many such instances of tank constructions that vary in size and the volumes of water that they hold. For instance, next to the Jain monastery was the *Muttina kere*, next to Mantrika monastery was the *Akka-Thangi kere* along with *Mundage kere*, near the Gadige monastery there was the *Neerulle kere*, near the Vadeeraja monastery there was *Davalgange, Hayagriva kere (Kote Kere)*,

Svarnavalli kere etc. Starting from the Hayagriva *samudra*, which spread over five acres, many tanks have been built spreading over 2-3 *guntas* in the valley.

Jainism was prevalent in Sonda in 8-9th century A.D. Apart from the tanks built by Jain Kings, between the 14 – 17 century, the Veerasaiva rulers also continued the tradition of tank construction. Arasappa Nayaka, at the instance of Srivadiraja, the pontiff of the monastery, dedicated a temple to Lord Venkataramana and built a unique tank in front of it. Situated in an area of 1.5 acres, the tank has stone steps all around. On one side is a suction tank to absorb rain so as to augment the ground water level. Traces of moats that carried the rainwater can still be found in the forest. The Mahanta monastery that came into prominence during the rule of the Virasaivas has two springs called *Akka-Tangi* tank. To the south of the monastery is a 5—6 acre tank built four centuries ago. This has a special system called *Onake Tubu* to supply water consistently to the gardens and houses and it could also irrigate lands up to a distance of about two to three kilometers through mud canals. Now, the tanks are filled with silt and a waterweed called “*Mundage*” has spread all over the tank.

In 1763, when Haider’s army seized Sudhapura, the royal family fled to Goa in disguise. History states that Haider looted pearls, gems, diamonds and other precious gems and jewellery. But what he could not rob was the water wealth provided by the kings, ministers and soldiers of Sudhapura for the welfare of the town and the nearby villages! After the downfall of the kings, the population of the town decreased and the water sources, due to lack of maintenance, were ruined. Sudhapura that had a population of one lakh 250 years ago now has only 2,000 people. Until 1858, it was the *Taluk* headquarters of Sirsi, but today it is an obscure village.

What about its water wealth? The tanks are filled with silt and when summer comes, the water problem comes back. Ratnakara Heggade of the Sodha Awareness Forum says that the water wealth can be restored, if traditional systems are revived. Today’s administration is indifferent to these water sources that once gave life to an entire city. The local Hulekal village Panchayat has drilled 14 borewells and 14 open wells and yet, is struggling to provide water through pumps. The ancient water sources, which always ensured adequate water fell to decay.

History has recorded that water conservation is not new to Malnad. In fact, it has been in existence for over 1,600 years. In the inscriptions and records of the travellers, there are many success stories of water welfare. But all these water conservation traditions undertaken with people’s participation fall on deaf ears in the cacophony created by speeches, governmental circulars, popular programs and subsidy schemes. All traditional water conservation methods are slipping away like the *Jarukattes!*

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