

Traditional wisdom in harvesting water

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Abstract

Traditional Knowledge is being used in various parts of India for harvest of rain water as well as its conservation. This article examines two such traditional water harvest systems in Kerala state of South India. One is the 'Panam Keni' well used by Mullu Kuruma tribes of Wayanad, the hilly district of Kerala and the other one is the vertical 'Suranga' well dug in the laterite hills of Kasargod district. Unique knowledge and skill are involved in the development of these wells. This has been passed from generation to generation and perfected. But it is sad that the skill and knowledge associated with these wells are fast disappearing from these communities.

Keywords: *Traditional knowledge, Wells, Wayanad, Mullu Kuruma, Panam Keni, Kasargod, Laterite hills, Suranga.*

Introduction

Water has been harvested in India since antiquity, with our ancestors perfecting the art of water management. Many water harvesting structures and water conveyance systems specific to the ecoregions and culture has been developed in India like Zing of Trans-Himalayan Region, Kul, Naula and Khatri of Western Himalayas, Bamboo drip irrigation of North-eastern Hill Ranges, Korambu in Eastern Ghats, Talab in Central highlands, Virdas in Western coastal plains, Katas in Eastern highlands, Kunds of Thar desert and Cheruvu of Deccan plateau. In Kerala State, South India, two such distinct systems are there; Panam Keni in Wayanad and Suranga in Kasaragod district.

Methodology

Field study, reference of available literature and interviews.

The sacred wells of Kurumas

The native tribes of Wayanad, Kerala mainly consist of various sects like *Paniyas, Kurumas, Adiyars, Kurichyas, Ooralis and Kattunaikkans*. Kuruma

tribe is a very prominent tribal group of Kerala state with unique culture and ethno botanical practices. A group of the kurumas, referred to, as Mullu kurumas is concentrated in the Wayanad district of Kerala. As early inhabitants of Wynad, Mullukurumans are mainly found in the panchayaths of Noolpuzha, Kidanganad, Muppainad, Muttill, Parakkadi, Tirunelli and Mananthavadi of the district and also in the adjoining areas of Gudalur taluk in the Nilgiri district of Tamil Nadu.

There is a view that the prefix may have originated from mula (bamboo), which provides them with an important occupation. Mullukurumas are presently cultivators and hunters. Being closely associated with landlords, they claim racial superiority over the Jenu kuruman and Uralikurumans, as the three groups are known by the same generic name.

'Panam Keni' is the special type of well used by Mullu Kurauma hamlets. This type of well is being used by kurumas for hundreds of years. Kenis are located on the edge or middle of paddy fields and near forests.

cylindrical in shape, they have a diameter and depth of around four feet only. The wall is of Toddy palm (*Caryota urens*). Usually, the bottom stem portion of large palms are used to make wooden cylinders after retting them in water for a long time so that the inner core gets rotten and degraded and the hard outer layer remains. The wooden cylinders are immersed in the spots where there is good ground water spring and that is the secret of abundant water even in hottest summer months.

“We don’t know when these Kenis were made. May be about 500 hundred years back. It was there till my childhood. We consider these wells as sacred. During monthly periods and for 3 months after childbirth women don’t collect water from kenis. Otherwise, every family in the hamlet collect water from these

wells daily and it is exclusively used for cooking and drinking purpose. We never use keni water for bath or washing cloth, so that the keni water won’t get polluted. Wearing footwear near kenis is even considered a sinful practise.”- Says Devaki, a kuruma tribal woman in her seventies, at the Pakam tribal colony near Manathavady, Wayanad district, Kerala. During festivals and marriages it is a custom to wash and cook rice in Keni water. Keni is the property of the hamlet, not any one’s property. Being a shallow water body, a mud pot is enough to dip and collect water from it. Keni water remains transparent and pure. More than thousand litres of water can be collected every day throughout the year.

“During olden days we, Kurumas only used to collect water from Panam Kenis. Now other communities



and settlers also collect water. They won't insist on keeping it clean and sacred as we do. The present Panam Kenis are very old and the wood has started to decay. Now nobody has the expertise to make such kenis. In some places cement rings are being placed around the palm kenis"-says Vellan, another tribe at Pakam.

Now there may be around 200 Kenis in Wayanad. These wells reveal the ancient knowledge and wisdom of tribes of Wayanad in locating, preserving and sustainable utilization of perennial water sources. The new generation, getting accustomed to modern lifestyles tend to neglect this valuable indigenous knowledge, which deserves to be protected and passed on to future generations. *

Water from the tunnel

Laterite hills acts as reservoirs of rainwater. This fact has been realised by the farmers of Kasaragod districts of Kerala long back, which resulted in the Suranga wells. *Surangas* are found mainly in Southern Karnataka and Northern Kerala in the foothills of the Western Ghats of South India. Experts estimate their number to be around 5,000.

Studies have revealed the origins of the system at around 1900–1940 CE. The system is influenced by ancient Persian technology, because of the long established trade links with Persia and the Arabian Peninsula in the Malabar region. They have resemblance to ancient water structures used in Mesopotamia several millennia ago. In appearance, they are quite similar to *qanats*, which are still used in rural parts of Iran.

The nomenclature of suranga is varied as a result of the linguistic diversity of the region. Suranga are referred by many other names including surangam, thurangam, thorapu and mal. Surangas are horizontal adit systems (a horizontal passage leading to a mine for the purpose of access or drainage) cut into slopes in order to extract ground water.

The landscape of this part of the Western Ghats is

characterized by undulating upland topography that produces relatively small but steep sloping hills. The main soil found in the region are laterite soil. The suranga are generally about 250 metres in length with an average length of 40-50 metres. The width is enough for a medium sized person to move inside. The practice of constructing multiple suranga on land holdings is common. Skilled persons are required to construct Surangas. This involves the identification of suitable soil conditions at the point of excavation and indicates geobotanical plant species that suggest a nearby phreatic water table which will provide the source of water. Key biological indicator species for phreatic water table include trees such as *Vateria indica*, *Ficus virens* and *Macaranga indica*. Termite hills on a row are also another indication of water near to the surface.

"I have two surangas". Surangas are usually dug in laterite slopes during summer months in order to



avoid collapse of soil. Water springs from all the three sides as well as bottom fill surangas with water. The flow of water is often pooled just before the entrance by building a small earthen dam. The water is then conveyed via a small diameter plastic pipe either into a farm pond or directly into an underground irrigation network. There can be multiple surangas supplying water into a single farm pond. Distribution of water from suranga and farm ponds onto crops is either by hand/bucket, flooding, hose, drip or sprinkler system. “No pump sets, everything by gravitational force only”- says Salva Disuse, a farmer in Enmakaje village in Kasaragod district, Kerala. Salva Disuse has 1.5 acres of land in which he cultivates betel wine, areca nut, cocoa and pepper. Since there is no shortage of water and good availability of cattle manure, he can make a good income from the good yield that these crops provide.

There is abundant water in these wells even in summer and is enough for all needs including cooking, bath and irrigation of crops. Laboratory tests supports farmers perceptions that suranga water is sweeter and purer than what is found in bore wells. As water flows out perennially by gravity, tunnel wells having a flow as high as 600 litres per minute has been documented. Abdul Sidhique has 15 acres of land in which he maintains three big ponds which are filled with water from surangas. Each Suranga is able to provide around 500 litres of water / hour, which is used for irrigation and domestic use.

“I grow coconut, areca nut, pepper and banana in this land. 50 HF cows are there in the Dairy farm. For all these, Suranga water is enough. Even though abundant water is there, I follow an economic irrigation pattern.

I irrigate once in a week only and assure that water reaches the root zone without any wastage. Here we have a co-operative irrigation system”. Suppose, if a farmer uses water from surangas for irrigating his crop, if water is there in excess after his requirement, he will allow other farmers in the region to channelise the excess water for irrigating their crop. “I get good crop yield and around 500 litres of milk per day.” - Abdul Sidhique explained.

Suranga as well as Keni wells are comparatively cheap, effective, eco-friendly and sustainable irrigation technologies used in these regions for a very long time. Such technologies evolved through practise and perfection is invaluable.

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