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Title: SURANGA - A SUSTAINABLE WATER RESOURCE

HARISH HALEMANE

Kumble 671321

Kasaragod,

Kerala.

Phone: 04998-245006(R), 09946319992(Cell)

Email: harish_halemane@rediffmail.com

Paper

Farmers, from centuries ago have developed some techniques for finding water. 'Suranga' is a man-made cave used for the purpose of water. These 'surangas' can be seen in many parts of Dakshina Kannada district of Karnataka and Kasaragod district of Kerala. In some parts of southern Kasaragod, these are called 'Surangams'. Surangas are the tunnels bored horizontally on the slopes of hills to get clean drinking quality water.

'Suranga' is a system mainly seen in coastal districts which are having the same soil structure (i.e., laterite). On the slopes of laterite soiled hills, surangas are dug horizontally using pickaxes or wedges by the workmen. There were people who were the masters in this craft. They knew the slope of the hill, the soil structure, geo system, rainwater catchments area above the hill and exactly where to dig the suranga.

There were also good workmen who had the skill to dig the suranga. Nowadays, digging of suranga has become an obsolete .

However, surangas are still being dug and used in some parts of Karnataka.

There is another method of digging hills by using galvanized pipes. It is called the 'horizontal bore' (Addaboru in Kannada). This has been successful in some parts where the vertical bore wells did not go well. It is only a bore well having small diameter and it acts as a small suranga. i.e., water is flown outside the horizontal bore well like water coming from suranga.

Workmen know about the yield of water that can be got from the Suranga from some indigenous methods. Termite mounds and some plants show them where water can be found. Some people make use of the knowledge of 'dowsing' also.

'Suranga' is the only source of water for many poor people who live by the sides of hills. Actually, these people are 'coolies' working for daily wages. They can not dig wells there because of the geo system of the hills. Therefore, they have to dig surangas for themselves because they can not afford other workmen. Usually, this work is done at night.

Suranga is best suited for the laterite soil because this type of soil does not collapse while digging. This should not be practiced in other types of soils for the same reason. Digging of suranga requires lots of courage as there is little light and air inside it. Workmen make use of candles, coconut oil lamps, lanterns etc to light inside the suranga. While digging a suranga, one can make use of available sunlight also, provided the work is done at daytime. For that, mirrors are used and sunlight is reflected into the suranga.

Suranga digging is a craft which require patience and some knowledge of water flow. The suranga is dug such a way that the seepage water is flown outside easily. Therefore, a slope can be

seen from inside to outside the suranga. Tanks can be made for collecting the water flown outside the suranga and it can be used for irrigation .

Kottanguli is a place near Mulleria in Kasaragod, where we can see such a suranga irrigating about five acres of areca nut gardens without the use of a pump. A narrow suranga having high yield of water is situated by the side of a hill. The water is made to flow to a man made tank and collected. The collected water is used to irrigate through the sprinklers by the 'siphon' method. Kottanguli Venkatakrishna Bhat is the man behind this success story.

We can see about 2000 surangas in a village called 'Bayar' around the hill 'Posadi Gumpe' in Kasaragod. The rainwater percolating through the hill is sufficient to seep through these surangas. There are places near Posadi Gumpe where water oozes through the laterite soiled walls. This is because 'Posadi Gumpe' catches rainwater and it is recharged down into the earth. It is then seeps through the laterite walls or surangas. The roots of the trees up the hill help to recharge the rainwater into the earth. 'Niduvaje', 'Uluvana' and 'Keremoole' are the places where this oozing of water is found. Some of the areca nut gardens in this area do not require irrigation till the month of May.

Water from these surangas is so clear and tasty that once you drink this water, you will never go for mineral water. Surangas are still being used as a water resource here in Bayar and neighboring village of 'Manila' which is in Karnataka. There are some skilled workmen making suranga after the rainy season, and all of them are booked for one year. It is interesting to know that most of the farmers in these villages knew the art of digging suranga. But unfortunately, the number of such people is decreasing every year.

Kajampady, Agalpady, Padre, Bayar and Manila are villages of Kasaragod where Karhad Brahmins or Chitpavan

Brahmins live, number. Interestingly, surangas are also found in large numbers in these areas. They like the water of suranga for its taste and for the reason that it is not the stagnant water. The technology of making suranga has been exported to other places like Goa, where Karhad Brahmin girls went after their marriage. 'Karhad' is a place in Maharashtra from where these Karhad Brahmins and Marathis immigrated to Kasaragod. Therefore there is a point to think that this technology is from Maharashtra. The same technology might have been transferred to Goa and other places. We can not get the exact history of Surangas in India.

However, 'Quanat' was a similar structure used in Iran, Iraq and some other parts of Middle East for the purpose of water. The history of 'Quanat' goes beyond 700 B.C. Technology of Suranga might have been imported to India by the Arab traders or it could have been developed here. There are people who also argue that this culture of digging the hills horizontally for the purpose of water was introduced here by King Tughlak.

Surangas are now being neglected in many parts as the bore wells started exploiting the ground water. But, if the trees are retained and some rainwater catching pits are dug up the hills, Surangas can still give sufficient water for drinking and irrigation. Water from the suranga should be collected in a tank nearby and that can be used for irrigation of farms that are located in a lower place only by 'siphon' method. Therefore, Suranga is a sustainable water resource and it should not be the part of history.
