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**Title: Traditional Water Management Practices in Coastal Karnataka**

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**Abstract**

Udupi and D.K. districts (Erstwhile Dakshina Kannada district) are essentially agriculture districts and majority of the people subsists on income derived from the same. As there are no major irrigation projects, the agriculture is essentially monsoon dependent. The districts are blessed by nature with abundant rain fall (c400cms), with a few failures. The rainfall is supplemented by water brought tanks, channels and river lets.

Traditionally, the water management was on cooperative basis. The water management fell under three categories. a. *Channels*: Maintenance of water channels before monsoon or at the onset of monsoon and the water is shared by all those who require it.

b. *Tanks*: There are more than 500 tanks in these districts, but most of them are man made. The *Anekere*, at Karkala, built in 1262 by then ruler, Pandyaadeva of Bhairavarasu dynasty, is the best example of water conservation. *Madaga*, is unique practice in these regions to manage water resource. Chantaru *Mandaga*, with Ayacut area of 270 acres is the largest of the *madagas*. In addition to these, every temple in the region has its own tanks. Temple tanks are used mainly for the purpose of *pujas* and bathing but also served as other purposes.

c. *Vented Dams*: As the monsoon weakens, there used to be *Kattu*, across the streams to slow down the flow and to store water for drier months.

These traditions are discussed in relation to rainfall data of the districts for over 131 years and agriculture practices.

## **Introduction**

South Kanara (SK) is situated on the West coast of Karnataka in the Southern part of Uttara Kannada District. It has a length of 177 kms. with a coastline of about 142 kms. The average width of the region is about 40kms. Currently, the SK is divided into Dakshina Kannada (DK) and Udupi districts, but the two regions are culturally, geographically and ecologically remain same. This is a populous and dense region with 319 persons/sq.km.

Egypt is the gift of Nile, they say, but the SK, according to a legend is the gift of *Parashurama*, a legendry figure. The life and culture of the people were intimately associated with water, forest and wild life and the concern for nature and wild life was an integral part of the life style of the people of the region. Nature worship has been in practice since time immemorial. The nature worship included the worshipping of wild plants, the wild animals and even the wild habitats such as water bodies and forests.

The SK is well favoured by nature. The region experiences heavy rainfall from South West monsoon from June to September with a few failures in the past (Fig 1.). The average rain fall is about 400cms (Fig 2). The rainfall increases towards the Western Ghats side. The district has a high humidity. Temperature hardly goes beyond 37°C.

There are 21 rivers, longest being hardly 80kms in length. All these rivers overflow during monsoon months inundating the surrounding areas but during summer months most of them dry up.

Agriculture is the main occupation of the people even today. “Canara (as this regions used to be called earlier) will never be a manufacturing country” wrote, Munro in 1800. Till recently people used to subsist on the income from agriculture or activities to related to agriculture. Hence water management has become an essential part of their occupation.

#### **Water Management Practices:**

Although annual rainfall is about 400cms, during summer most of the rivers get dried up and smaller streams get dried up even earlier. Out of 540 tanks and ponds, nearly 75% have more than 50% of silt. Many tanks are covered with weeds and are in the late stage secondary succession. The wells are dug deeper and deeper and the most of the bore wells have become either failure or useless. This problem of water scarcity in the coastal Karnataka is a post independent phenomenon.

“The rainfall during the south west monsoon being unfailing and abundant, there are no extensive irrigation works in SK. The rain fall alone is sufficient to ensure one crop even on lands where there are no facilities for storing water while the streams and springs, which continue to flow for some time after the rain ceased, enable the farmers to raise to two or even three rice crops on the low lying lands at the bottom of valleys” (Sturrock, 1894). But for the two the famines, one in 1305 and in 1727, the region had

never faced water scarcity. About fifty years ago, cultivators were in the habit of damming up the water in the streams and smaller rivers. Small anicuts of this kind were found in abundance all over the district though perhaps there were more in Uppinangadi taluk and fewer in Kasaragod than elsewhere. Nothing was spent directly by the Government in connection with irrigation and it was collective effort of the village community at large. Near the coast where water level is found near the surface, the private owners have dug large number of small private tanks. These traditions of the region have been of immense value in water conservation, which unfortunately, has given up by and large at the community level. We neither practice the modern scientific method of water management nor adhere to the traditional methods. And the situation is worsening year after year.

**Madagas:** Construction of *Madagas*, was a unique practice for water management in the coastal Karnataka. It is a large body of water collected on the slopy terrain where there is a huge catchment, but by constructing a bund on one side; the other three sides are being natural boundaries to hold water. During monsoon, whatever runoff was there from the catchments used to collect in madaga. In SK, there were hundreds of madagas decades ago when paddy cultivation was popular. A *madaga* is a multipurpose water body, and meets all the needs of the local village from the cultivation of paddy (*suggi*) to domestic purposes. They are mainly responsible for recharging the underground water source and hence are insurance against water shortage. But in these years the *madagas* are being neglected and many of them are dieing.

**Tanks:** Almost every town and village has a tank of one kind or the other and all the major temples of the region have temple tanks. There are more than 540 small and medium sized ponds in the region, and most of them were man made, for multiple purposes. One such vast pond is *Anekere*, having an area of about 25 acres, at Karkala (Udupi district). A ruler of Karkala, called Pandyadeva, built it in 1262. It is a wetland which served the people of Karkala for over eight and half centuries! Unfortunately, it is in a very bad state due invasion of weeds and siltation (Fig 5). Although some attempts are being made to rejuvenate the Anekere tank but without much success. Decades of negligence cannot set right over night.

**Channels:** Channels were dug connecting the streams and small rivers to supplement water for paddy cultivation. This used to be cooperative effort of the community and generally done either before monsoon or after monsoon and was maintained by the stake holders.

**Present Status:** It is a paradox that a region which experiences very heavy rainfall goes dry during summer months. It is mainly because of unscientific management of water resource and traditional methods being ignored. Ponds are becoming duping yards, rivers silted and the well have be deepened year after year. Hardly any water flows in many of the rivers. It is said that most of ponds have more than 50% silt and others are invaded by aquatic weeds.

Future scenario seems to be worse as the region is all set for industrialization. Ecosystem people of the district would likely become ecological refuges to cater the needs of omnivorous people.

## **References**

1. Rao, Sundar B. 2000. Gazetteers in Colonial Subjectification – Sturrock’s Manual of South Canara, in Poli. Ed. Mukundaprabhu, Pub: Deputy Commissioner, Mangalore.
2. Sturrock, Manual of South Canara, 1891.

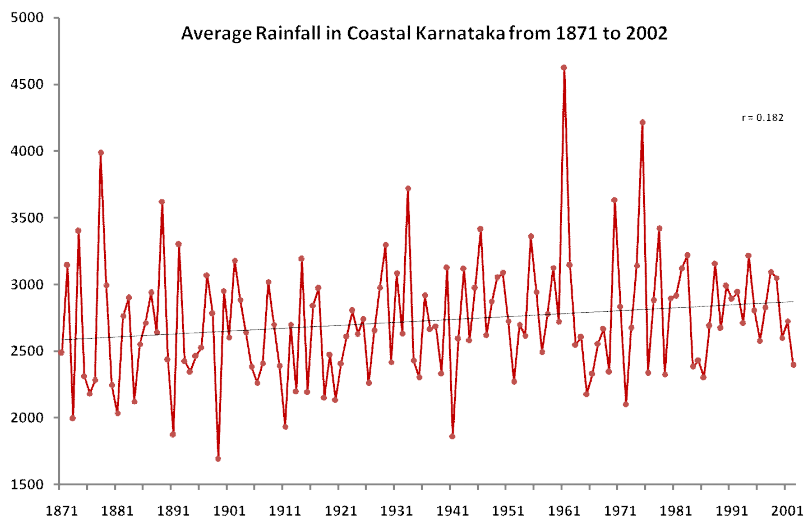


Fig. 1 Average rainfall for over 131 years.

### No of years with excess and deficient rainfall (above and below 100%)

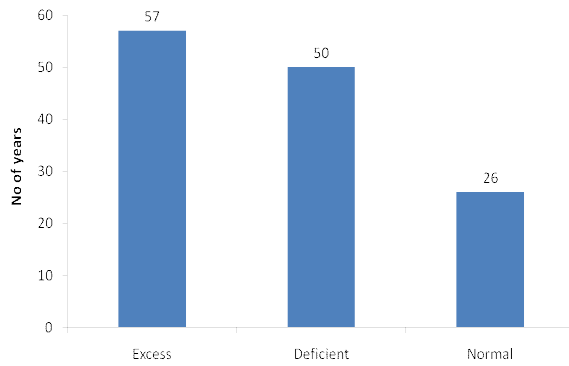


Fig. 2. Distribution pattern of rainfall.

### Frequency distribution of rainfall patterns for 133 years (1871 to 2002)

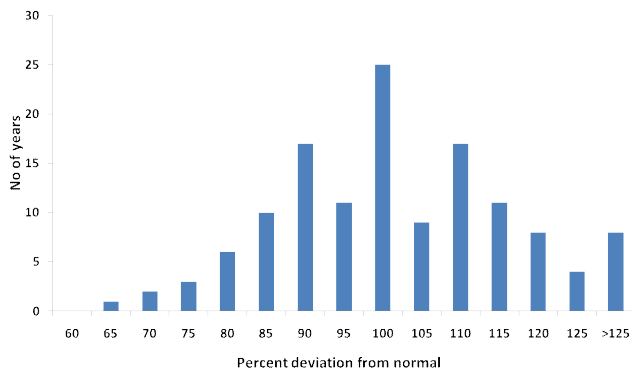


Fig3. Frequency of distribution of rain fall,



Fig 4. Chantaru Madaga



Fig 5. Anekere, Karkala.



