



FRUITS OF PARTICIPATORY IRRIGATION MANAGEMENT

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ABSTRACT

Water is a scarce commodity. It can not be created, but it get replenish. Rainfall is the major source of water for the human being. It is highly erratic in nature. Major parts of the earth do not receive the rains throughout the year. The average rainy days may vary from 10 to 45 from the arid to semiarid region. Therefore management of the water resources became an essential function of the society. Community management of the water resources had proven over time to be very successful and sustainable. This approach ensures its optimum utilization, conservation, and maximizes the benefits. Large numbers of such example are scattered throughout India. Involvements of the people's participation in construction of water harvesting structures and irrigation water management of harvested water shows that the community can bring revolution in the water management sector. The successes story sets very good examples of participatory approach and could inspire the people facing the problems of water crises. This paper illustrates few successful cases of the participatory Irrigation management practiced in India.

INTRODUCTION

Out of the total use of available water 70 to 80% water is used for irrigation. Thus irrigation sector is the largest user of the available water resources. Irrigation makes the food security. Though productivity enhanced by several other factors like soil nutrients, hybrid seeds and crop husbandry, water acts as catalyst and it is most important input for higher productivity. But the availability of water is highly variable with space and time. India often reels of flood and drought. The ancestors had taken lessons form the erratic behavior of the monsoon rain and evolve various skillful traditions of participatory approach in creation and irrigation management of the water resources. Few cases of successful participatory irrigation management are given below.

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SPRING CHANNELS

Polar River is flowing in Tamil Nadu state, India. It has a wide bed of thick sand. During the period of north east monsoon, the river has subsurface flow of water i.e. water springs below the sand bed. The flow period is sufficient to raise one seasonal crop. The inhabitant on the bank of river had developed an art to tap the underground aquifer to irrigate their fields. They identified few spots inside the river beds in the lower reaches. Each village on its banks developed a right to a spot. On such spot the villagers use to dig a pit. The depth of the pit may be 3 to 4 meters i.e. up to the underground water spring. The spring is the water source. The spot is called as *Kasam*. The villagers dug an open cut channel from the *Kasam* leading to wards their field on the downstream side and along the bank of the river. The channels are slightly inclined and away from the bank of the river and have certain gradient to ensure easy flow of water from the *Kasam* to the tail portion. The land in between the river bank and the channel is the command of the *Kasam*. It has a command of few hectares. The *Kasam* can sustain for the crop period. The spring water carries sand along the flow. The sand gets deposited on the bed of the channel and obstructs the water flow. Therefore day to day sand removal from the channel is necessary. The Villagers evolved a very good Participatory approach for day to day maintenance of the channel. One member from each family of the beneficiaries has to contribute the cleaning activities. All of such member gather early in the morning on the channel banks and starts cleaning the channel from the head to wards the tail to rejuvenate the spring. One village do not encroach the *Kasam* of the another village. This tradition is still in practice from long back. This is the simple but very effective illustration of Participatory Irrigation management.

MINOR IRRIGATION TANKS

Large numbers of Minor irrigation tanks are exist in Tamil Nadu state, India. Management of these tanks is in the hands of the beneficiaries. They nominate a respective person in the village as the in charge of the irrigation under the tank. He has irrigation assistant called as *Neerkattis*. Under the directives of the leader *Neerkatties* distribute the water to the different fields. They strictly follow a specific turn of water distribution. This turn system might be evolved centuries back but still adopted. The statement in the turn sketch gives the extent of the irrigation from Monday through Sunday. It also specifies the time of irrigation to a certain areas of the field. For how long the turn schedule is in vogue, nobody knows, but still honored. This is one of the best examples of the Participatory irrigation management.

PHAD SYSTEM OF IRRIGATION

The community managed Phad irrigation system is prevalent in northwest Maharashtra, India, i.e. part of Dhule and Nasik districts. The system is in operation in the Tapi river basin. Weirs were constructed to divert the river water for agriculture use. The command area of a diversion weir is divided in to four equal parts, called as Phad. Each Phad has to grow only one type of crop in a season. Cropping pattern is decided so wisely that the first Phad may have a perennial crop, second may have a two seasonal crop, third may have a one seasonal crop and forth may be kept fallow. Each Phad has a

provision to raise perennial crop in every four years. The crops in the Phad are kept rotating one after the other. The rotation of the crops is given in the table below.

Year (Rabi)	Phad no one	Phad no two	Phad no three	Phad no four
I	Wheat	cotton	Gram	Fallow
II	Fallow	Wheat	cotton	Gram
II	Gram	Fallow	Wheat	Cotton
III	cotton	Gram	Fallow	Wheat

From the above table it is observed that every Phad has an opportunity to grow all types of crops by rotation. Irrigation to the crops in the fields is performed by the appointed staffs. And farmers are not allowed to interfere in irrigation operation. The farmers need not to worry about the irrigation and guarding the crops in their field. The irrigation staff does their best as they have to get share from the individual field produce. Maintenance is a group function. All farmers contribute equally both in labor and leadership. Discipline is strictly enforced. The Phad system shows that if small farmers organize, they can form a sustainable irrigation system. The crops are rotated from one Phad to another and frequently one Phad is kept fallow in rotation. Because of frequent non irrigation and crop rotation the lands do neither get water logged nor get saline, though the irrigation is practiced here from centuries back. Thus fertility of the lands is maintained. The water distribution practice and the management rules are so framed that they sustains for a long period. The Participatory irrigation management of the available water in the weir is said as one of the best system of management.

MALGUZARI TANKS

The tank irrigation in Wainganga River Basin of Maharashtra, India are locally known as Malguzari tanks, they are very good example of Participatory irrigation management and water resources development. These tanks are still in use in the district Bhandara, Gondia, Chandrapur, Gadchiroli and Nagpur since centuries to gather. Dynastic in this tribal area was known as 'Gound King' inspired the people to undertake large number of tank. These tanks were constructed in earthen embankment for harvesting water and irrigation purpose. Solely the people through farmer's participation built the tanks. The farmer's committees also look after the water management of these tanks. More than 20,000 tanks were constructed in this area. Some of the tanks are small and known as Bodis. These were owned by the individual beneficiary/family. The tanks were constructed in series. They did not have well defined conventional surplus water arrangement. The location of the dam line was so fixed that the surplus water could find its own way either through flanks or saddle.

JOHADS

The Tarun Bharat Sangh stepped in to Guwara Dewari village of Rajasthan state, India, with its integrated development package. Under this package they constructed three earthen water harvesting structures called *Johads* using 10000 man days in the year

1986-87. In July 1987, 130 mm rain fell in a period of 48 hours. There after there were no rains. But the ample water was collected in the *Johads*. Due to which ground water aquifer is recharged and the water level in the 20 well rose up and fulfills the drinking water needs of the peoples. The bed in the larger *Johads* is used to cultivate the crops where as water in the smaller *Johads* was used for livestock. Some organic debris that flowed in to the *Johads* beds from the catchments enriched the soil fertility. About 30 tonnes grains were grown in these beds. For the construction of *Johads*, they have not taken any external engineering help. Initially the people were suspicious. But very soon they realized the importance of *Johads*. Due to construction of the check dams across the drain the precious top soil erosion prevented. By learning the lesson from this, the peoples from other villages also started to construct *Johads* in large numbers. They put an example of what a community can do for its prosperity if it unites together. The village environment has been revived. Luxurious tree now grow in the vicinity of the *Johads*. Previously soil erosion from the cultivated land was remarkable and soil moisture was very low. After initiation of the *Johads* the soil erosion is prevented and it remains moist for long period. In 1986, 60 youth from 57 families had migrated in search of the job. Today, negligible numbers of men are employed out side the village. In the past, village women had to fetch for water and spent time and effort to collect the water from the distant sources but now they are getting water in there wells. Construction of the *Johads* does not solve the problems. It requires regular maintenance. Need of skilful irrigation water management rose for their sustainability. Decisions regarding the use of the *Johads* are taken by the villagers themselves. The maintenance of the *Johads* is the collective responsibility of the villagers. The revival of the traditional water harvesting has been extremely successful. The flow of wealth fro the village Gopalra has prevented. Thus the standards of living of the villagers are improved. Since the year 1986, 200 *Johads* are constructed in 100 village of the Alwar district.

CONCLUSION

Participatory irrigation management is very much successful for maintaining the sustainability in agricultural production and efficient land and water use.

REFERENCES:

1. Few Glimpses of Indian water culture, Dr. R.S. Morwanchikar. Proceeding of National Workshop, Indian Council for water and Culture, 15-16 October, 2005.
2. Region in the historical Gond Kingdom, Dr. Harishchandra Borkar, Proceeding of National Workshop, Indian Council for water and Culture, 15-16 October, 2005.
3. Management of Irrigation tanks in Tamilnadu, Prof. A.Mohankrishnan, Proceeding of National Workshop, Indian Council for water and Culture, 15-16 October, 2005.
4. Dying Wisdom, A book published by the Centre for Science and Environment, New Delhi (India).