

A Study On The Unconventional Solution Of Water Scarcity Problem In Tamil Nadu

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Abstract

India lives in villages and present days more than 60 percent of population lies in agricultural and allied sectors. Agriculture sector is the main occupation of the people. In other words it is the back bone of our country. In rural illiterates and middle education women primarily only their livelihood by working as more wage laborers on agriculture farms, rural industries and other allied activities. In this juncture present day agricultural sector has faced major problem in water scarcity and monsoon failure. In Cauvery belt it's of Tamil Nadu reflected in farmer's death (suicide). Normally, the rainfall in Tamil Nadu is averagely 640 MM of rain in the season in every year, but it failure. The government also failed to take necessary steps in this matter. Farmers made several agitations in this regards. At the same time the government or the farmers side were not forwarded to take the alternative decision in this regards to overcome the problems in Tamil Nadu. The present paper deals with the problems and alternative solution to overcome these problems and save the farmers in long run. The alternative ideas not a new one, it is very old method of Tamil Peoples form 18th century.

Key word: Livelihood, Agriculture Farms, Rural Industries, Scarcity, Suicide, Alternative

Introduction

Agriculture sector is the main occupation of the Indian Farmers and more than 65 percent of population engaged in agricultural and allied activities and India's agriculture contribution is 40 percent to our country's GDP. In India, majority of people are less educated and their main occupation or livelihood is agriculture and allied activities. In India's total landscape 45 percent of land has only the irrigation facility. In the 45 percent land only 25 percent are double crop irrigation lands, 45 percent of land are single crop irrigation and remaining part of land are dry land. Now the majority of Indian states are having water scarcity. The farmers in difference states are affected their livelihood and they are seeking to other jobs and migrated from one place to other places. At the same time the many state governments insists the integrated the river linking programme and it has till a proper bending to compliment it. Especially the water bodies in Tamilnadu are not maintained in proper way. At present agricultural sector has faced major problem for water scarcity and monsoon failure. Normally, the rainfall in Tamil Nadu is averagely 640 MM of rain in the season every year, but now received very less. The government also failed to take necessary steps for water scarcity and farmers problems. At the same time the farmers were not aware of the alternative solution for their problems and overcome it in Tamil Nadu.

Water is most crucial resource for sustainable agricultural production in the dry land / rain fed areas. More than 35 percent of our total geographical area is drought-prone because we are dependent upon the monsoons which can be unpredictable. Drought-prone areas have to be provided water not only for irrigation, human and cattle consumption. On the other hand, after receiving good monsoons water is not available only because of lack of proper management and storage facilities. Water Management is the cheapest and purest source of water is rain water. However, the major part of the rain water coming over the farmers field in these areas go away.

The runoff does not only cause loss of water but it also washes away precious top soil. Hence, to solve the problems of water scarcity and save the agriculturist and agricultural labours, the researcher explores alternative ideas.

The main idea of the water scarcity is **Farm Pond** in their own lands and village waste lands in the problematic areas. Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad has standardized location specific water harvesting technologies in the form of Farm Ponds to address this problem and the institute is actively up-scaling this technology country wide. The farm ponds are constructed at the lower side of the fields. The Farm Ponds are very old method and it is not a new one. Harvesting of the water in pond, lakes, wells, tanks and reservoirs helps to preserve this water so that it can be put to varied uses later on. One of the most effective ways of water management is through Farm Pond by linking Canals and from various rain water drainages. **Farm Pond**

A farm pond is a large hole dug out in the earth, usually square or rectangular or any in shape, which harvests rainwater and stores it for future use. It has an inlet to regulate inflow and an outlet to release excess water. The pond is surrounded by a small bund, which prevents erosion on the banks of the pond. The size and depth depend on the amount of land available, the type of soil, the farmer's water requirements, the cost of excavation, and the possible uses of the excavated earth. Water from the farm pond is conveyed to the fields manually, by pumping, or by both methods.

Farm Pond in Tamilnadu

In the Tamilnadu nearly 16000 farm ponds are proposed to be dug by various ways, particularly in Cauvery delta region. The government organized to dig the farm pond with help of District Watershed Development Agency (DWDA) and Agriculture Engineering Department (AED). The State Government, dovetailing the Centre's Mahatma Gandhi National Rural Employment Guarantee Scheme, (MGNREGS) has come in handy for the government to order the creation farm ponds in Cauvery delta regions.

Table – 1 the table shows the details of Farm pond in the year March, 2013-14

Sl. No	Name of District	Farm Ponds to be Created	Administration Sanction	Work Commenced
1	Nagapattinam	5,500	5,500	548
2	Tiruvarur	5,160	5,160	120
3	Thanjavur	2,375	2,373	280
4	Tiruchi	1,110	527	447
5	Pudhkottai	568	320	98
6	Karur	75	75	95
7	Ariyalur	55	55	45
8	Cuddalore	45	45	33
Total		14,888	14,055	1,666

Source: District Watershed Development Agency (DWDA)

The table 1 shows the farm pond details in Cauvery delta region and improves the agriculture sector food grains sustainability. But the same time farmers are not aware of the farm pond benefits and its importance.

Cost-Benefit analysis of the farm pond- A model

If a farmer has a one hectare land in his owned, then the farmer prepared a plan for his integrated farming system of cultivation. The land holdings are divided into some parts as per importance of cultivation; for example, paddy or sugar cane is as main crop and then prepared the land as per importance of crops. The major portion allotted to paddy, and a small portion to farm pond, ten cattle breeding and other uses of cultivation. A minimum level of land i.e 0.25 hectare of land should be allotted to farm pond dug out in square or rectangle shape in earth to

storing the rain water and drainage water from monsoon or rainy seasons for the purpose of future use. A model of farm pond cost-benefits analysed here for the purpose of understanding.

Table – 1 shows the Production, Expenditure and income level of farm pond in 1hectare of land

Sl. No	Crops	Production Area (in acres)	Production (Value in Rs)	Expenditure (in Rs)	Income (in Rs)
1	Paddy	1.0	168000.0	115500.0	52500.0
2	Farm Pond & Fish rearing	0.25	300000.0	150000.0	150000.0
3	Vegetables	0.5	4500.0	2000.0	2500.0
4	Livestock	0.4	112500.0	85000.0	27500.0
5	Grass	0.25	15000.0	6000.0	9000.0
6	Bi products	-	100000.0	35000.0	65000.0
Sub Total			700000.0	393500.0	306500.0
7	Hut & free land maintenance cost	0.1	-	2500.0	0.0
8	Labour & maintenance cost	-	-	130000.0	0.0
Grand Total			700000.0	526000.0	171500.0

Source: Computed

Inference

The above Table highlights the benefits of farm pond income in small land holding. A farmer has one hectare of land whether own land or borrowed land and it has been converted to integrated method cultivation then the income and expenditure are as follows. The total expenditure farm activities undergone in the farm is Rs. 5, 26,000/-, the production (revenue) of farm is Rs.7,00, 000/- and net income of the farm is Rs. 1,71,500/- per annum. From this table it is clear, other than the wage or salary of the farmers he got Rs. 14500/- per month averagely. The farm pond method gives not only direct income; it gives lot of indirect benefits to the farmers and the societies. The major benefits are listed below.

Benefits of Farm Ponds:

Direct benefits

1. They provide water to start growing any crops, without waiting for dam irrigation or rain fall in whole year.
2. They provide irrigation water during the dry season and increase the yield, the number of crops in a year.
3. Farm pond bunds can be used to grow vegetables, fruits and ornamental plants, thus gives the farmers additional source of income and nutritious food.
4. Farmers are able to apply adequate farm inputs and perform farming operations at the appropriate time, thus increasing their productivity and their confidence in farming.
5. The farm ponds supplies water for domestic uses and also livestock.
6. The farm pond gives alternative livelihood for aquaculture like fish rearing.
7. The farm ponds to enrich the ground water levels and so on.

Indirect benefits

Added values of the farm ponds

A well-managed integrated farm system is equal to profitable enterprises. The integrated farm system comprising several enterprises including fish culture in ponds produces more products. The pond serves as a water storage structure and, as such, becomes a key asset of smallholder farms, supplying water to crops, valuable trees, vegetables and animals. Crops can be integrated with the ponds in a multiple use system. Wastes accumulated in pond mud's can be spread over gardens. Fish ponds in irrigation schemes add value to the scheme and serve as a back-up source of water when water shortage occurs or supply is temporarily cut off. There are mutual

benefits to integrated and associated farming systems, such as wastes from gardens being fed to fish and water from ponds for irrigating the crops.

Nutrition

Water from ponds not only can provide irrigation for crops and water for livestock it also produce fish and other species. This can have a positive effect on family nutrition, making crop and livestock production less risky and allowing families to have more farm products to consume. Fish can provide yet another important 'nutrient' in the family diet, as well as other aquatic organisms. Fish, fresh vegetables and paddy is an important source of protein for the family.

Value added to societies

1. Farm pond generates employment through the year.
2. Farm pond can lead to farmer empowerment economically, socially and politically.
3. Farm pond can draw more support from public agencies for rural infrastructure and services.

Types of farm pond

1. Runoff ponds,
2. Ground-water ponds,
3. Borrow pit ponds,
4. Derivation ponds,
5. Ponds using siphoned or pumped water,
6. Rice paddies.

Conclusion

After the pilot scheme of farm pond by farmer Mahesh Patel, Nipania (2005-06) in a small village from 30 KM of Dewas town in north-East of Madhya Pradesh, the importance of farm ponds are explored. The government should take action in various forms to improve the farm ponds in all over India. In Tamilnadu the government should take multi-level steps to increasing the number of farm pond. The MGNREGA programme is implementing in this scheme to create asserts as the form of farm ponds. After the thorough investigation the cost-benefit analysis of the farm pond is better option to the farmers to increase the products and their livelihood. In the livelihood, apart from agriculture activities the other non-agricultural activities creates the employment opportunities in villages and other rural agencies in urban areas. It is concluded that, in the present day situation failure of monsoon and water scarcity the farm ponds is the alternative solution to improve in the agriculture sector.

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