International Journal of Theoretical & Applied Sciences, Special Issue-NCRTAST 8(1): 15-16(2016)

ISSN No. (Print): 0975-1718
ISSN No. (Online): 2249-3247

Methods for Management of Agricultural Water

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(Received 11 April, 2016 Accepted 20 May, 2016)
(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: India is predominantly an agricultural country, but proper water management systems. While considerable work has been done regarding the use of fertilizers and seed varieties, they persist with traditional methods s far as water is concerned especially in areas coming under government canals. Proper information on water availability and its use will be highly beneficial for higher productivity. In addition many conflicts arising cut of water use canal solve solved once the scientific information is available at different levels of management. Nearly 70% of agriculture is under rained conditions and only 30 percent has irrigation facilities. In both the system, optimum water management can make a great difference in productivity. Water management both under rained and irrigated system should there fore be included.

I. INTRODUCTION

Water management is the term used to mean the arrangement for properly organizing the hydro sphere in order to prevent a major water crisis in years to come on in future. As we all know that our country and the whole world is facing a major problem of water crisis. The main reason behind this problem is that due to heavy rains and floods, major of the water is wasted and is mixed to the oceans via rivers and is converted to salty water, which is of no use. Water which is supplied to the farmers by the canals from the big dams and rivers are not utilized by farmers in the way they should be. In result the villages which are far away from the stating of canals does not even get there minimum required amount of water. Based on irrigation and analysis of different thematic maps suitable ground water recharge sites were identified and artificial recharge structure were proposed for ground water development. Agriculture is main source of livelihood and employment in rural area. The cropping intensity and yield mainly depends upon the availability of irrigation sources. For the existence of all living beings(humans, animals or plants) water is very crucial. Almost all human activities domestic, agricultural and industrial demand use of water. The water balance awareness among the local governance aid for cautions use available water. The advance geo-informatic systems viz remote sensing geographic information system and global positioning system emerge as powerful tools to identify monitor and evaluate the vulnerable areas. It also support for multidisciplinary planning and management of water shed agriculture and related problems.

II. METHODS

Rainfed farming has a distinct place in Indian agricultural, occupying 67percent of the cultivated area contributing 44 percent of the food grains and supporting 40 percent of the population. Rainfed farming and dry land farming differ in that denoted growing crops solely bases on rainfall. Drought and crop failure are common features in these areas as the soil moisture availability often does not match with the evaporative demand. Usually a single short duration crop is grown in these areas. Farming in areas with more than 750 mm rainfall is more assured with surplus water available that can be harvested, stored, recycled. There is also a possibility of growing more than one crop in these areas. In the rainfed system, it is basically in situ water conservation in the field, water harvesting in farm level and water application is critical stages of the crops. The rainfed system should therefore emphasis water shed based management and hence the nature of information required will differ from that required by irrigation projects. Currently irrigated areas produce an average of two tones of food grains per hectare. The average productivity in rainfed areas is only 0.7-0.8 tones per hectare. The irrigation efficiency of this method is 30-50% only as compared to other advanced method of irrigation. The flood water distribution is al not uniform in this method and sometimes create the problem of salt accumulation on the soil. Workers on sustainable intensification of rain fed agricultural and aquatic systems taking into account produce capacity and ecosystem services across whole landscape. Small scale irrigation using surface water and ground water rain water harvesting [1-5].

Crops are grown under a range of water management regimes from simple soil till age aimed at increasing the in-filtration of rain fall to sophisticated irrigation technologies and management. Of the estimated 1 to 4 billion hectare of crop land world wise, around 80% is rain fed and accounts for about 60% of global agricultural output. Under rain fed condition water management attempts to control amount of water available to a crop through the opportunistic deviation of the rain water path way towards enhanced moisture storage in the root zone. However the timing of water application is still dicted by rainfall patterns not by the famer. Some 20% of the world's cropped area is irrigated and produces around 40% of total agricultural output. Higher cropping intensities and higher average yields account for this level of productivity. By controlling both the amount and timing of water.

Micro irrigation is the latest and most efficient methods of water utilization for crop growth. It has high water use efficiency and hence should be adopted on a large scale for various crops in a country. In India rapid increase in population along with greater industrialization will mean that less water will be available for use in agriculture. Hence it is necessary that methods like drip irrigation are adopted on a large scale for various crops in India. Sprinkler and drip (Trickle) are the advanced methods for irrigation. The drip or trackle method is also known as micro irrigation system. These methods are applicable for all types of crops depending on the soil, slope, water sources, farmers capacity and crop spacing. In sprinkler water is applied once in 4-7 days. This reduces the moisture stress of the crop area to some extent. However the water application being controlled, only the needed water can be regulated in this system. This method of irrigation has an efficiency of up to 70-75%. Though it has even distribution it consumes more energy and more labor. As water is applied on a cycle basis say once in 7-10 days, the amount of moisture will never be constant and decreases day by day. Yield will be less. The drip or trackle irrigation is the most efficient method of the crops water is applied to the crop area near the soil zone on a daily basis and because there is no water the crops growth is not affected at all and no soil erosion takes place [6-8].

III. SEA WATER FOR AGRICULTURE

Exploring sea water for agriculture is a recent phenomenon that has gained importance in the face of rising population and dwindling water resources. Screening of salt water plants from deserts and alkaline soils scattered around the globe have stumbled on to plant which is proving beneficial to humans.

Water management both under rain fed and irrigated system should be included. In the rain fed system it is basically in situ water conservation in the field and water harvesting at the farm level and water application at critical stages of the crops. The rain fed system should therefore emphasis water shed based management and hence the nature of information required will differ from that required by irrigation projects.

IV. CONCLUSION

Farming an areas with more than 750mm rainfall is more assured with surplus water available that can be harvested, stored and recycled. There is also a possibility of growing more than one crop in these areas. Off season till age , flowing across the slope, planting with the earliest opportunity. Adsorption of appropriate in situ moisture conservation practices. Selection of suitable crop and variety that matches the growing season. Maintaining optimum plant population using improved sowing implements. Timely weed control, use of chemical fertilizers at recommended level needs plant protection methods. In India have shown that timely planting is one of the principle factors for the success of dry land farming.

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