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Prospects of Transforming Farm Ponds into Water Bank: Approach to Enhance Resilience against Drought

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SUMMARY

Farm ponds are man-made water storage reservoirs aimed at providing irrigation to crops as and when needed. In the climate change scenario monsoon cycle is getting destabilized and farmers are often experiencing draught like situations. Due to this trend many farmers foresee the less water available for farming and then prefer to go for non-farming jobs rather than cultivating crops. Against this backdrop authors are trying to foresee the formation of water banks using the infrastructure of farm ponds. The water bank approach for structuring, maintaining the farm ponds and availing water as and when needed would provide income opportunity to agriculturist in current and future climate change.

INTRODUCTION

Globally climate change poses a big challenge for rain-fed agriculture, and Maharashtra is not exception for it. About 82 per cent agriculture in Maharashtra is rainfed and highly vulnerable to unpredicted monsoon. An erratic and unreliable monsoon introduced an element of high risk, uncertainty and instability in crop production in Maharashtra during last few decades. Also, it is widely known that during last many years Maharashtra is frequently facing drought and drought-like conditions. To deal with the challenge of water scarcity for agriculture, a number of policies and interventions have been implemented by State and Union government as well as various organizations working at local level. Post the 1990s, farm pond technology became a new ray of hope for the farmers. Farm ponds were originally conceived to collect and store rainwater to provide protected irrigation to crops during periods of water scarcity. However, they had limited impact on alleviating water scarcity for farmers in Maharashtra.

Plastic Lined Farm Pond

To meet the water requirement of horticultural orchards, an innovation i.e. 'farm pond with plastic lining' began in 2010. It gained tremendous popularity in the past decade in Maharashtra. Farm ponds with plastic lining are privately owned ponds that are dug out in the fields and are filled using surface run off or ground water through water pump. Such structures are lined using a plastic sheet that prevents percolation into the ground.

Figure 1. farmer showing a man-made farm pond with water stored in it.

Governments Role in Plastic Lined Farm Ponds

State and Central governments implemented several schemes to encourage construction of farm ponds with lining as a solution to the recurrent water scarcity faced by orchard farmers. The Maharashtra government introduced scheme 'Magel tyala Shet-tale' (Farm Ponds on Demand) while the Union government also supported farm ponds by allocating funds under schemes of National Horticulture Mission (NHM), Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Rashtriya Krishi Vikas Yojana (RKVY), Pradhan Mantri Krishi Sinchai Yojana (PMKSY), etc. The various schemes of government provide subsidy for dugout of farm pond as well as subsidy for plastic sheets. As a result, lakhs of farm ponds have been built under the Magel Tyala Shet-Tale scheme in Maharashtra. Thousands more have been built under other schemes over the years and many more have been set up privately, for which no credible data is available.

Uses of Farm Pond in Maharashtra

The large number of constructed farm ponds in Maharashtra are primarily used for irrigating horticultural crops. Also, the water from ponds serve domestic and livestock water requirement of farmers. Interestingly, these farm ponds offer the opportunity to rear fish and other aquatic organisms providing for diversification of farm enterprises and reduction of risk. In fact, diversified farming minimizes the risk of climate change and way forward for the sustainable income which leads towards attaining goals of doubling farmers' income (DFI) and achieve the goal of 'more crop per drop' in the country.

CONCLUSION

Lifesaving irrigation is of huge importance in this climate change scenario (Zou, *et al.*, 2012). And water bank can provide these types of life saving irrigations to needy farmers. In the last ten years concepts like fodder bank and seed bank became very much popular among farmers who were associated with NICRA project *(*Chary, *et al*., 2017; Rani, *et al.*, 2020; Tajpara, *et al.*, 2018). On the same principles, water bank can be formed in drought prone areas to enhance the climate resilience. A systematic study of this idea with pilot project would provide a clearer picture on most appropriate ways to form water bank in rural India.

REFERENCES

Chary, G. R., Gopinath, K., & Narsimlu, B. (2017) Coping with weather aberrations for sustaining the productivity of rainfed farming. *Agricultural Sciences*, 153.

Rani, S., Sohane, R., Mahto, D., & Sharma, B. K. (2020). Fodder seed bank–an initiative for green fodder production during lean period by KVK, Jehanabad Under Nicra Project.

Tajpara, M., Vakaliya, M., & Kalsariya, B. (2018). Impact of climate resilient technology in NICRA village of rajkot district of Gujarat. Guj. J. Ext. Edu. Special Issue on National Seminar : April 2018

Zou, X., Li, Y.E., Gao, Q., & Wan, Y. (2012). How water saving irrigation contributes to climate change resilience—a case study of practices in china. *Mitigation And Adaptation Strategies For Global Change*, *17*(2), 111-132.