

National Workshop cum Brain Storming
on
Rainwater Harvesting and Reuse through Farm Ponds
Experiences, Issues and Strategies

April 21-22, 2009
CRIDA, Hyderabad

Background

Rainfed farming will remain the main stay for the livelihood support of millions of small and marginal farmers across the country even after realizing the complete irrigation potential. The Government of India has been laying continued emphasis on development of rainfed areas through all the five year plans. Many programmes, such as the National Watershed Development Program for Rainfed Areas (NWDPA) have been launched for comprehensive development of rainfed areas based on successful pilot projects.

Rainwater management is the most critical component of rainfed farming. The successful production of rainfed crops largely depends on how efficiently soil moisture is conserved *in situ* or the surplus runoff is harvested, stored and recycled for supplemental irrigation. India has a long history of rainwater harvesting through a variety of structures and systems (tanks, ponds, khadins etc.), which are built by the Government and local bodies and managed by the community and village level Institutions. However, after independence, with the availability of electricity and pumping technology, private investment on tube wells has enormously increased and the tank systems were gradually ignored. The emphasis shifted from community based structures which use surface water to individual investments which exploited ground water.

Research by ICAR and State Agricultural Universities has resulted in designing of efficient water harvesting structures for different rainfall regions and soil types, effective storage of harvested water and methods of its efficient use. Outside the main stream research system also, several non-governmental organizations (NGOs) have come up with models of simple and low cost water harvesting structures, evolved water sharing methods, community regulation of water use, which helped in up-scaling the models to certain extent. On-farm water harvesting through farm ponds on individual holdings was emphasized; cost benefit data generated on use of harvested water. Different state governments (Maharashtra, Madhya Pradesh, Gujarat etc) have initiated special programmes on farm ponds/small storage structures in order to ensure the sustainability and to improve the livelihoods of people.

Despite these experiences, the adoption of farm ponds at the individual farm level has been very low, particularly for drought proofing through life saving irrigation of kharif crops. A number of technological and socio-economic constraints are cited for this poor adoption and up-scaling. With climate change posing a major challenge for rainfed agriculture and the constraints in further expansion of irrigated area in the country, rainwater harvesting and efficient water use are inevitable options to sustain rainfed agriculture in future. The rainfall extremes and high intensity rain events witnessed in recent years are likely to cause large spatial and temporal variations in the amount of surplus runoff available for harvesting. In some areas, there could be increased runoff and more potential for harvesting, while in other areas it might decrease.

There are divergent views on the actual potential and scope of farm ponds for water harvesting in the country and its likely impact on enhancing food production. This is because of the uncertainty

on availability of surface water for harvesting due to varied geographical features, soil types, slopes, rainfall and the high capital cost on ponds. The economic returns from small-scale water harvesting structures depend on end use of the water and the reliability of water availability through runoff. There are concerns on the impact of such structures on the down-stream water availability. The proponents on the other hand highlight the equity and ecological value of small-scale watershed harvesting systems. Therefore, the following issues emerge

- What is the optimum size of farm pond given the catchment area available under different farming situations
- What are the best designs for different rainfall zones and soil types
- How can the capital cost of farm ponds be reduced through convergence of other developmental programmes
- What are the innovations in checking evaporative losses, cost effective sealants, water lifting devices for conveyance.
- What are the best options in terms of crop choices to realize the best returns from stored water
- How to resolve the issue of sharing water in case of small holders where catchment and command area belong to different farmers
- What are the on-site and off-site benefits including environmental pay-offs due to rain water harvesting
- What are the indigenous techniques of rain water harvesting which can help farm pond technology become more cost effective.
- Potential of water harvesting through farm ponds in adaptation and mitigation of climate change

Considering these issues, it is proposed to hold a two-day National Workshop-cum-Brain storming session on farm pond technology with the following objectives.

Objectives

- Sharing of experiences on water harvesting and reuse through farm ponds and related issues, among scientific institutions, Govt. departments, NGOs, civil society organizations and progressive farmers.
- Understand the biophysical, technological and social constraints in adoption and up-scaling.
- Identify critical research gaps and policy initiatives for wider adoption of farm pond technology in the country.

Format

The Workshop is not planned as a typical academic event involving presentation of research papers. It is mainly to share experiences in the form of successful case studies, and the causes for successes or otherwise and collectively identify critical issues, research gaps/policy initiatives required for future action. All the participants who attend the workshop are required to present their experiences.

Who can participate

Any scientist or teacher from ICAR research institutes or State Agricultural Universities involved in water harvesting research and extension, NGOs and civil society representatives who have experience in promoting water harvesting involving communities, officials from State Line Departments involved in implementing development schemes with water harvesting as a major component and progressive farmers who innovated in cost effective water harvesting systems that

became known in the country. It is planned to limit the total participation to about 50-60 to facilitate adequate interaction.

Presentations/Contributions

The interested participants are requested to respond to this first circular by 'expression of intent' to participate by filling up the Intent Form. A format and guidelines for submission of an Extended Abstract will be circulated to only those participants who express their interest to participate. The submission of extended abstract will be in the form of a case study covering background information on the target area, details of the innovations made in farm pond technology including technological and institutional innovations, impact at the ground level, constraints faced in up-scaling and suggestions for future work. The Extended abstract will be printed before the Brain Storming and will serve as the basis for discussion at the Workshop.

Expected Outputs

Improved understanding of the potential of on-farm water harvesting through farm ponds and critical research gaps which require future attention.

Dates and Schedules

The last date for submission of intent forms is 10th February, 2009. The Second Circular will be sent by 28th February, 2009 confirming their participation. The deadline for submission of Extended abstract by selected participants is 31st March 2009.

Finance

We are organizing this thematic workshop under the NAIP Project on Livelihood Security.

The organizers will meet the local cost of the workshop including lodging, boarding, conference materials and local transport. The TA/DA has to be borne by the participants themselves or their organizations. In case some sponsoring support is available, travel assistance will be considered in few cases.

Contact and Submission of the Intent Forms

The intent forms available in this circular may be duly filled and submitted electronically through email to rwh@crida.ernet.in. Alternatively the forms can also be downloaded from CRIDA website (www.crida.ernet.in).

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Intent form for Participation

Name :

Designation :

Organization :

Address :

Phone :

Mobile:

Fax:

E.mail :

Would you like to present a case study: Yes/No

If Yes, Brief description of the case study not exceeding one paragraph (To include Title, Target area, innovation, impact etc) :

Date

Signature

Note: Last date for submission is 10th February, 2009 through E.mail (rw@crida.ernet.in) or Fax (040-24531802)