

This briefing note synthesizes the presentations made by the AgWater Solutions Project team and discussions that followed with the workshop participants.

Introduction

The AgWater Solutions project is helping to unlock the potential of smallholder farming through agricultural water management (AWM) solutions. This includes formal and informal technologies and approaches, such as soil moisture management, drip irrigation and water harvesting solutions at the farm, community and watershed level, as well as the supporting policies, institutions and business models. Partnerships are key to the success of the project. As such, the project promotes collaboration at international, national and regional levels with and between a range of stakeholder groups including researchers, policymakers, investors, farmers and implementers.

The State Consultation Workshop was an opportunity for such engagement and for participants to share their opinions on AWM solutions that would be appropriate for Madhya Pradesh and could be out-scaled. This briefing note provides a short summary of the discussions held during the Workshop and the AWM solutions that were prioritized. For more information on all the AWM solutions currently being used in Madhya Pradesh the reader is referred to the Situation Analysis Briefing Note, which is also available on the website.

AgWater Solutions in Madhya Pradesh

The State of Madhya Pradesh was selected for the AgWater Solutions project after a scoping study based on a number of criteria including potential for AWM, the proportion of poor people and presence of non-governmental organizations (NGOs). The project will operate across the State but will select a number of case study areas. The study will cover technologies, business models, and legal and policy aspects of AWM.

AWM and Rural Development in the State

Madhya Pradesh is principally an agriculture-driven State but there are challenges that are quite different from some of the agriculturally advanced regions of the country such as Punjab and Haryana. AWM solutions have already shown positive results, for example in Malwa Region where two crops are now possible per year, but most farmers are still dependent on rainwater and have small landholdings. To address this challenge we need to consider how we can help farmers maximize the use of rainwater and what technological solutions can be provided to harness this water and use it productively. The challenge also lies in ensuring social and gender equity in the whole process. Some of the options for improving AWM are given in the box.

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Suggested Options for Improving AWM

- Reduce water conveyances loss by 40-50%.
- Recharge groundwater through diversion of surplus water to system tanks and canals.
- Invest in and spread the use of micro-irrigation.
- Improve and enforce groundwater regulations.
- Implement volumetric pricing.
- Separate water rights from land rights.
- Price canal water and electricity appropriately to encourage the adoption of micro-irrigation.
- Create an autonomous single nodal agency for implementation of micro-irrigation.
- Introduce information and communication technology (ICT) for irrigation scheduling.
- Switch to optimum cropping patterns and crop mix to maximize efficiency of available water.
- Accelerate investment in rainwater harvesting.
- Increase efficiency of available irrigation water through water use literacy programs in agriculture.
- Adjust sowing dates.
- Introduce thermo-insensitive varieties of wheat.
- Introduce soil-conditioning practices, e.g., bio-fertilizers, vermi-compost, and organic manure.

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The Department of Rural Development and Panchayati Raj promotes programs that directly benefit smallholder farmers and agricultural laborers. Programs like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) are being used to improve irrigation facilities in villages. The Department is keen on collaboration and works with NGOs and other government departments.

Existing AWM Solutions in Madhya Pradesh

A situation analysis was conducted by the AgWater Solutions project in 11 different agroclimatic zones and was reported on at the meeting. The guiding criteria for the analysis were:

Table 1: AWM Solutions Reviewed

Category	AWM solutions
Community Initiatives	Recycling of urban wastewater for irrigation and wells recharge
	Diesel pump irrigation in small and marginal fields
	Watercourse Canals (series of bunds and paats)
	“Up level tank” – gravity irrigation from storage tanks
NGO/ Institutional Initiatives	Participatory irrigation management (PIM) (NGOs and Water Resources Department [WRD])
	Field dubri (open wells) (NGOs)
	Irrigation through tanks and wells (government and private)
	Patan Bandh-stop dam irrigation system (WRD and Madhya Pradesh Rural Livelihoods Project, MPRLP)
	Pedal pump (NGO-MPRLP)
	Field bund system of water conservation (MGNREGA)
	Water user group (MPRLP)
	Lift irrigation through recharged well (Rural Government Watershed Mission and NGO)
Public Private Partnership	Lift irrigation through dams (NGO, government, community)
	Combination of tube well and tractor-driven pump (private and government)
Government	Canal tank irrigation (government Dairy and Breeding Farm)

availability, accessibility, adoptability and scalability. The categories and solutions identified in the study are provided in Table 1. They were all discussed in the workshop. The effectiveness of stop-dams and check-dams, and the experience of the Sadguru Foundation in implementing lift irrigation projects were discussed. The female community members shared their experiences of crop rotation and field bunding, and requested more information on alternative technologies, especially assessing the likely success or failure of wells before boring, and making the best use of wastewater.

In Harsi and Tawa areas of the State, participatory irrigation management (PIM) through water user associations (WUAs) has been very effective but there are limitations such as equitable distribution. A detailed performance of PIM has been requested.

Identification of Promising AWM Solutions

The following AWM solutions were suggested and discussed by the participants. They include technical and institutional solutions.

- Drip irrigation systems for cotton crops.
- Rainwater harvesting.
- Pedal pumps in some regions of Madhya Pradesh.
- Subsidies, e.g., on drip and sprinkler systems.
- Access to credit and market accessibility.
- Capacity-building and follow-up for farmers.
- Fish ponds as a potential AWM solution.
- Studying the efficiency of micro-irrigation systems.
- Mobile training units.
- Farmer involvement at the outset of AWM projects.
- Effective information dissemination on farmers’ rights and entitlements.
- Formal organization of farmers.
- Promotion of community organizations and WUAs.
- Promotion of farmer producer companies.
- Farmer business groups.
- Documentation provided in local language.
- Models for making information available to farmers.
- Considering the issue of electricity and diesel use.
- MGNREGA - many activities are being implemented and a systematic evaluation of the impacts on water resources is needed.

Next Steps

The suggestions raised in the workshop are being taken forward in the choice and design of the in-depth case studies and in the ongoing stakeholder dialogue process.

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Comments received from representatives of:

Sadguru Foundation; female community members; Water Resources Department of the Government of Madhya Pradesh, International Development Enterprise (IDE), ITC Limited.

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