Madhya Pradesh - India

Country Dialogue Brief 2009 - 2012

Introduction

This brief presents the outcomes of the stakeholder engagement activities, known as "The Dialogue," in the AgWater Solutions Project. A schematic diagram of all the meetings and events is given on page 2 and the key findings are presented

Project overview

The **AgWater Solutions Project** aims to improve the livelihoods of poor and marginalized smallholder farmers in sub-Saharan Africa and South Asia through **agricultural water management (AWM) solutions**. The project is assessing where and how agricultural water management (AWM) can improve rural livelihoods and reduce poverty. Work focuses on five African countries (Ghana, Burkina Faso, Zambia, Tanzania and Ethiopia) and two states in India (West Bengal and Madhya Pradesh).

In each country the AgWater Solutions Project has followed a consistent methodology: initial research to understand the status of AWM (**situation analysis**) followed by a **national consultation** to discuss findings and distil priorities for field-level research and piloting. In parallel, FAO and IFPRI have been **mapping** the potential for AWM to contribute to poverty alleviation at national and subcontinental levels. A series of workshops (the **AWM Dialogue** led by FAO with National Dialogue Facilitators) have been held at national and subnational levels, to ground truth research findings and identify gaps and priorities for influencing AWM through policy, and links with private sector and farmer groups. The project is now finalized (September 2012) and project findings are packaged into investment recommendations for target stakeholder groups.

AWM Dialogue process

This dialogue aims to consult, discuss and validate possible AWM solution options and to suggest priorities for investment at the national level on the basis of scientific references and a good understanding of local knowledge, actors' needs and preferences. Discussions in the events aimed to understand the causes of adoption or abandonment of some of the AWM interventions, and enlarge the range of the "possible". They should help us find practical means to forge links between water, poverty and livelihoods in rural areas, in particular, by showing how access to agricultural water determines livelihoods and survival in rural areas.

In Madhya Pradesh, the main constraints identified by the AgWater Solutions Situation Analysis in 2009 were overuse of groundwater and electricity power cuts, which affect farmers using electric pumps. Any AWM solution would have to reduce dependence on groundwater and not rely on electricity. As such, to increase water availability the project is looking into means of supporting the proliferation of decentralized rainwater harvesting (on-farm ponds, also called ex-situ water harvesting) and field bunding to increase water retention in the soil (in-situ rainwater harvesting). To increase water access the project is analyzing how to facilitate low-cost water lifting options (e.g., pump rental) and drip irrigation to improve water utilization. Financial support measures to implement these AWM improvements are also being explored to facilitate private investment and improve targeting of existing government subsidies.

AWM options identified during the State Consultation

The State AWM Consultation discussed the situational analysis and identified a number of areas in which research would be beneficial. The AgWater Solutions project selected some of these for further analysis. IWMI and partners are also exploring options for: (i) accelerating adoption of low-cost drip systems (ii) low-cost water pumping services, and (iii) financing for all of the above AWM solutions.

The project is implemented by IWMI, FAO, IFPRI, SEI and IDE, with a number of partners in each country - see http://awm-solutions.iwmi.org/partnerts.aspx for more

FAO coordinates a multi-stakeholder dialogue process on AWM in close collaboration with national partners. Each country has a National Dialogue Facilitator who supports the appointed National Focal Point within the relevant government agency. Together, they ensure the events are prepared in line with country needs and preferences, receive the relevant inputs from country partners, and are effectively followed up.

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Dialogue update prepared by Bernardete Neves and Domitille Vallée (FAO) on the basis of the Dialogue event reports.

Dialogue Progress

Eight Meetings at state and regional level and

Districts & Villages meetings in two regions

More than 1000 Stakeholders

Phase 1: AWS Assessment

2009 - Situatio Analysis

Bhopal (January)
State AWM Consultation

2010 Bhopal (April)
Expert Consultation- Livelihood Zone Mapping

2011 Bhopal (May)
Multi-stakeholder consultation AWS

Phase 2: Dialogue

Bhopal (September)
Validation- Livelihood Zone
AWS potential mapping

Regional multi-stakeholder consultations on AWM promising solutions and suitability domains

- **Jabalpur** (August)
- **Indore** (September)
- **Sagar** (October)

2012 Gwalior (June)

Phase 3: Information for Action

May 2011- June 2012
District and village level workshops in Malwa and Mahakaushal regions
On AWM promising solutions and suitability targeted at farmers and local support staff

Workshop on Developing Modules for Agriculture Water Management and Irrigation Practice (June)

Final state level policy workshop (September) to discuss results and next steps
Organized jointly with a **Sammelan , a large scale farmer gathering** (early September)

OUTREACH & AWARENESS ACTIVITIES

INTERNATIONAL and NATIONAL

2012

January
Learning route of the national facilitators & national focal points (Burkina, Ghana, Ethiopia, Zambia, Tanzania, India-MP, India-WB) to Madhya Pradesh to visit promising agriculture water management solutions.

March
World Water Forum, Marseille, France (presentation on individual tanks/rewar sagar movement)

May
Land and water days @ FAO (presentation on the Dialogue process in India MP)

Aug
World Water Week, Stockholm, Sweden
(Presentation on individual tanks/ rewar sagar movement)

LOCAL

May 2011- June 2012

Exposure visits and awareness raising in two regions

Discuss loan options for rainwater harvesting

Preparing:

- a documentary for activities (workshop, field trips, campaign)
- a documentary on 2 man solutions

AWM knowledge platform - Faculty of Makhanlal Chaturvedi University of Journalism and Barkatulla University, Bhopal (August).

To discuss these research findings and inform the AWM mapping work, a series of meetings have been taking place since mid-2010; this brief summarizes this process and its findings.

Main findings from the dialogue events

This section summarizes the feedback received from participants during the various dialogue events on the suitability and feasibility of the AWM options analyzed, as well as financing needs and options to explore, together with investments required on information and training needs

Five major dialogue events, at state level and in four regions (divisions), have discussed the suitability of the two technologies analyzed, confirmed obstacles and suggested pathways for scaling up.

The dialogue events were held in Indore, Sagar, Bhopal, Jabalpur and finally in Gwalior in the north Madhya Pradesh in June 2012. This will cover half the Divisions in the State.

The project research found that farm ponds are most suited to Indore, Bhopal, Ujjain and Sagar divisions, while field bunding (and other water harvesting options) are suitable in Jabalpur and the undulated regions of other divisions. However, not all district authorities or farmers share this opinion and the dialogue was therefore designed to discuss the criteria of suitability in their areas.

Through AWM Solutions materials, the Centre for Advanced Research & Development (CARD) has shared information with Panchayats. Awareness-raising activities to encourage farmers to construct field bunds or farm ponds at the local level started in May 2011 have been ongoing. Regular village-level meetings are organized in villages in Ujjain (50), Dhar (30), Mahu (10) and Mandla (50) to share the larger benefits, and field visits of selected farmers were also organized to Dewas' Rewasagars; 35 farmers from Mandla, 39 from Ujjain and 15 from Mahu locations. Next steps include dissemination of a documentary about field bunding and farm ponds as well as one documenting the debates during the dialogue and eventually also large- scale gathering of farmers (Sammelan); in Dewas, Ujjain, Dhar, Mandla and Dindori these meetings could reach up to 500,000 farmers.

Suitability of these AWM Solutions, by region

In the Jabalpur regional workshop the case study of field bunding in Mandla was discussed. Mandla is a tribal-dominated hilly district where poverty rates and land degradation are high. District authorities had the goal of extending field bunding to all farms in the district by the end of 2011, using (MGNREGA) to cover labor cost.

In Sagar Division, field bunding is best tailored to areas where the slope gradient is low, e.g., Sagar, Khurai, Patera, Rahatgarh and Banda in Sagar District, and Hata and Patera in Damoh District. This technique is being practiced in the Sagar region and these are very effective (e.g., IIFDC experimented arhar (lintel), onion, and garlic on 48,000 running meters of field bunds). In Indore division, field bunding is practiced in the southern tribal region in Jhabua, Dhar and Alirajpur districts. In the remaining parts and in the neighboring districts of Ujjain division farm ponds are feasible.

Feasibility

Participants advised that Rewa Sagar may not be suitable in areas of rugged terrain and in areas with highly permeable soils. In the case of the latter, low-cost options used elsewhere in India include application of black soil as a base layer and gradual buildup of clay in the bottom of the ponds, resulting in an impermeable bottom over 2-3 years. In these areas, even if it will take longer to realize the benefits of rainwater harvesting ponds, this option is still competitive since all other alternatives of water harvesting are much more costly.

Participants also recommended that a range of water harvesting options are considered, based on the physical and socioeconomic characteristics so that tailored options could be offered when the conditions for Rewa Sagar system are not met (e.g., when soil type is not adequate). In the case of field bunding, participants consider that benefits may vary according to the crop and that there are some myths around soybean and its water sensitivity for which information is needed -- RC Sagar vs RC Indore.

In all regional consultations, a common suggestion for improving AWM was the combination of these two measures: participants suggested that building rainwater

Regional multi-stakeholder consultations (2011 and 2012)

State consultation

RCB1 - Bhopal (May 2010)

RCB2 - Bhopal (September 2012) ; combined with two large farmers gathering.

Regional consultation (RC)

RC J - Jabalpur (August)
RC I - Indore (September)
RC S - Sagar (October)
RC G - Gwalior (June 2012)

District Level Consultations (DLC)

DLC1- Mandla, (February, 12)
DLC2- Dindori, (December, 11)
DLC3- Dhar, (March, 12)
DLC4- Ujjain, (February, 12)
DLC5- Mandsaur (April, 12)

Livelihood Mapping Consultations

LMC1 - Bhopal (April, 10)
LMC 2- Bhopal (May, 11)

AWM project Documents:

Visit AWM Solutions website:

http://awm-solutions.iwmi.org/publications-and-outputs.aspx (Madhya Pradesh / Documents)

- AWM Situation Analysis Brief
- AWM National Consultation Brief

More about the case studies researched

- Mahatma Gandhi National Rural Employment Guarantee Scheme
- Rainwater harvesting in Madhya Pradesh
- Private sector role in promoting drip irrigation

harvesting ponds should be compulsory on farms that depend exclusively on deep tube wells to decrease pressure on groundwater use and enable recharge. (Jabalpur RC; Indore RC). They consider this especially applicable on farms larger than 5 acres where setting aside land for the pond would be easier to accommodate (RC Sagar).

Similarly, participants also suggest that field bunding should be considered as a compulsory measure for small and marginal farmers benefiting from government schemes, especially those in drought-prone areas. As a result, CARD is now planning to pilot "field bunding +" combining these two measures (see more below in Planned Events).

When discussing opportunities to make better use of MGNREGA financial assistance, participants considered that it can be most applicable in areas where farmers are also laborers in the tribal areas like Jhabua, Dhar, Mandla, Dindori (RC Indore). They therefore recommended not to limit MGNREGA investments to public and common lands but extend it to private land as it increases both the interest and the effectiveness.

Awareness investments needed

Technical assistance and accessible knowledge should be the first step in supporting farmers to design the AWM option for their conditions. This includes information on suitable soil type, steps for construction and size of pond required for a given area to be irrigated. NGOs and government are critical in this role, especially the State Agriculture University and district-level Krishi Vigyan Kendras (Indore RC). In addition, it is suggested to develop model water harvesting structures relevant to specific contexts and to arrange field visits for demonstration and training- of-trainers at the village level (Indore RC). This can be carried by NGOs like CARD which work with government/ international support.

Farmers need better information about the co-benefits of venturing into these private investments. Information on how much water can be stored, potential income increase from irrigation, new crops made possible as well as multiple water uses: livestock, fisheries, nurseries, and using sediment accumulated in the bottom of the pond as fertilizer during the dry season. AWM, through ponds, should be linked with other livelihood programs (Jabalpur RC). Highlighting potential savings is also important. For example, in electricity/diesel savings as pumping from surface tanks requires less (or no) energy to lift water. This will help farmers switch investment priorities from bore wells to ponds (RC Indore and Sagar).

Raising awareness on efficient water use should be a parallel activity including: (i) informing about the need for appropriate vegetation cover to be maintained on the farms (Jabalpur RC; Indore RC); (ii) incentives for water use efficiency, optimizing water use in various farming activities (from crops to dairy) (Indore RC), and promoting methods like drip and sprinkler. This should be combined with (iii) parallel investment in renovation of wells, tanks and stop dams (Indore RC).

Issues arising from the Dialogue Events

Further research will be needed to understand the contribution of these ponds to the observed rise in groundwater table as well as the water balance at watershed level and, in particular, the impact of these ponds on surface water flowing out of the sub-catchment and groundwater recharge.

An innovative aspect of MGNREGA implementation in Mandla district, where it covered public, communal and private lands is, in this way, a more comprehensive coverage of the watershed. A better understanding of land eligibility for NREGA investment will help the project target its recommendations for improving the impact of this program on AWM.

Apart from MGNREGA, there are other government subsidies available to help overcome the high cost of digging rainwater harvesting farm ponds. Eligibility and procedures to access these subsidies also require follow-up.

The Final policy-level event in Bhopal (September 2012) brings together all the findings and conclusions from the research and dialogue process. It aims to inform revision of programs and plans to develop the rural areas of Madhya Pradesh.

Mapping for Dialogue and decision Making

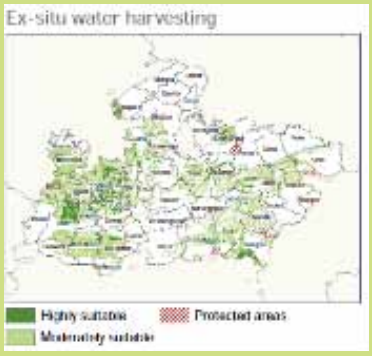
Maps can help stimulate discussion and visualize where to invest. The basis for the AWM potential mapping is the livelihood context (biophysical and socioeconomic determinants), captured in the Livelihood Zones (Map 1) through an iterative consultation, data gathering and desktop analysis process. The livelihoods context combined with hypothesis on conditions for success for AWM development allows to identify the "AWM Potential": areas where water constraints are a major factor affecting smallholder livelihoods and where AWM can be the entry point to boost the livelihoods of farmers (Map 2, potential beneficiaries/km2).

Map 3 showed that for on-farm rainwater harvesting ponds (Rewasagar model) two third of the state would be suitable. This is due to rainwater availability, limited groundwater, presence of impermeable (black cotton) soils. and proximity to markets, which provides an incentive for farmers to invest in building a pond.

This work has already yielded benefits for AWM improvements as the methodology is being used by CARD in their work in Madhya Pradesh and related work in Chhattisgarh State, covering the entire Central Indian Plateau region.

Map 1

Map 2



Map 3

For more information:

- Report Livelihood zones analysis, 2012. http://www.fao.org/nr/water/docs/MP_LZ_analysis.pdf
- Country Investment Brief. 2012. http://www.fao.org/nr/water/docs/MadhyaP.pdf

Madhya Pradesh Dialogue Team

The State Dialogue Facilitator is Vivek Sharma and the team comprises around 30 personnel at CARD, an Indian NGO based in Bhopal (Madhya Pradesh). CARD, which specializes in community-based natural resource management to reduce rural poverty, was established to promote action research and apply its findings for the protection and development of the society and its environment. It has been in operation since 1992 and has wide experience across the state.

Research to support the Dialogue in Madhya Pradesh has been carried out and shared by Dr. Ravinder P.S. Malik (IWMI-Delhi). He works in close collaboration with the CARD team.

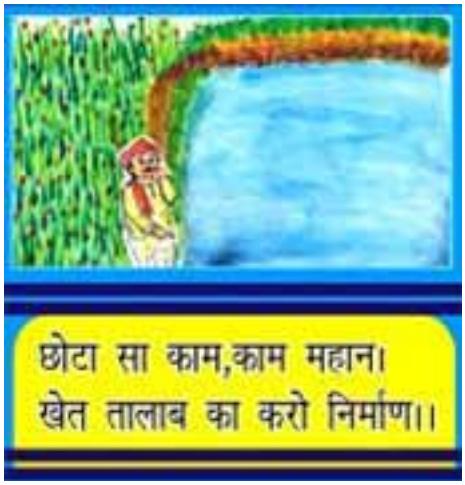
The AG Water Solutions Ambassador is P.S. Vijay Shankar, founding member and director of research at Samaj Pragati Sahayog (SPS), one of India's largest grass-roots initiatives for water and livelihood security. SPS is based in Dewas district of Madhya Pradesh. SPS recognizes "that watershed development is not just about harvesting rainwater; it is also about sharing it equitably and managing it collectively." Mr. Shankar is currently involved in the India 12th Five Year Plan and is working closely with the Indian Planning Commission.

Good collaboration at State Level has been established with **The State Government, Panchayat and Rural Development Department**. This department is represented by Mr. R. Prasuram, the Additional Chief Secretary (ACS) and the Agriculture Production Commissioner and Former Development Commissioner; and by Mr. O.P. Rawat, Vice Chairman, Narmada Valley Development Authority (NVDA). Mr P. Prasuram was the chief guest at the AgWater Solutions inaugural function in January 2010 and Mr. O.P. Rawat was the Chief Guest at the second workshop on May, 2011. The regional-level dialogue events are also attended by the district-level officials of these departments.

The Advisor of State Planning Board, Mr. Mangesh Tyagi made a presentation in the May AgWater Solutions event. **The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)**, state-level unit, is closely associated with CARD's efforts. The former CEO, Ms. Rashmi Shami Arun participated in the first AgWater Solution workshop and the current CEO, Mr. Shiv Shankar Shukla is also closely associated with the study. We have regular participation of senior NREGA officials in our events, including Ms. Ruhi Khan, Mr. R.K. Gupta, and Mr. Yogender Giri. **Watershed Mission, Department of Panchayat and Rural Development**: Director Mr. Umakant Umrao is the ex-Collector of Dewas and the initiator of Rewasagar movement, and has been a regular participant of all events of CARD. Senior officials of the Mission Mr. Vivek Dave, Mr. Rao, and Mr. Manish Pawar are also regular participants in all events.

Outreach activities

Through AWM Solutions materials, CARD has shared information with Panchayats. Awareness-raising activities to encourage farmers to construct field bunds or farm ponds at the local level started in May 2011 and are still going on. Regular village-level meetings are organized in villages in Ujjain (50), Dhar (30), Mahu (10) and Mandla (50) and field visits of selected farmers were also organized to Dewas' Rewa Sagars; 35 farmers from Mandla, 39 from Ujjain and 15 from Mahu locations. Two detailed manuals on agriculture water management have been prepared for Malwa and Mahakaushal regions, which also include farmer field school manuals on irrigation. A documentary (a film in Hindi language) has also been prepared locally on AWM for dissemination in the state. Next steps include dissemination of a documentary about field bunding and farm ponds and to conclude also a large gathering of farmers (Sammelan) in Dewas, Ujjain, Dhar, Mandla and Dindori; these meetings could reach up to 500,000 farmers in each district.



"A small work is great work Make farm pond"

"This pond looks small in size
- but it does wonders
Low investment more water
- land fertile and prosperity
Why running for bore wells
- neither water nor force
Why not make farm ponds- we can own it
Say with pride 'Yes this is mine"