

Introduction

This brief presents the outcomes of the stakeholder engagement activities, known as “The Dialogue,” in the AgWater Solutions Project. A schematic diagram of the process with main 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

The dialogue aims to consult, discuss and validate possible AWM solution options and 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 to enlarge the range of the “possible”. They help the project team explore 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 Burkina Faso, less than 0.6 % of cultivated land is formerly irrigated, but informal irrigation could bring up that figure to three times more. The main **constraints and options identified in the AWM Situation Analysis** were discussed in ten regional consultations (all of the 13 agricultural regions involved) and a National Consultation organized from April to June 2010. These consultations were organized in sequence with first brainstorming in four regional level consultations to inform the National Consultation in May, which allowed for consolidation. This was then followed by six regional consultations in the remaining regions of the country in June to complement and validate. In this process, a range of AWM options was discussed, specifically in terms of their opportunities.

The most promising AWM options found after consulting about stakeholders were:

Water access/ storage	Water lifting	Water use/application
<ul style="list-style-type: none"> ▪ Small dams and <i>boulis</i> (small ponds) ▪ Large- diameter wells for horticulture production and hand drilling ▪ Deep wells (low cost) 	<ul style="list-style-type: none"> ▪ Motor pumps ▪ Solar pumps 	<ul style="list-style-type: none"> ▪ Drip irrigation ▪ Furrow irrigation (gravity) ▪ Semi-concrete underground pipes irrigation (systems semi-Californian) ▪ Border irrigation (for vegetables); ▪ Basin irrigation (for rice)
AWM approaches <ul style="list-style-type: none"> ▪ Complete Low valley bottom (wetland) development ▪ Simple low valley bottom development ▪ Soil and water conservation techniques (in-situ water harvesting) 		
Support measures <ul style="list-style-type: none"> ▪ Organization and management of small dams and associated schemes ▪ Improve capacity to select or use AWM options and to innovate ▪ Financial support for access to quality AWM equipment and nutrients ▪ Improve value chains for AWM equipment 		

Burkina Faso AWM Solutions team

The State Focal Point is Mr. Oumar Traoré, Director, DADI, Ministry of Agriculture. He is supported by his team (Mahamadou Tiemtoré until early 2012; and Seimata Derra).

The National Water Management Directorate (DGRE) has taken also an active role in the process due to its broader mandate on water management, especially its work on small dams.

The State Dialogue Facilitators were Youssouf Dembélé, INERA, who prepared a dialogue plan and led the process until mid-2011, when he moved on to new activities at the Consortium bas fonds in Benin (he sadly passed away in 2012).

Moussa Laurent Compaore took over his role from mid-2011. Laurent is an hydraulic engineer working on integrated water resources management and dams.

The AgWater Solutions research Coordinator for Burkina Faso is Dr. Jean Philippe Venot (IWMI Burkina Faso) who implemented, in particular, the research on small dams.

AWM Solutions Project Ambassador for West Africa is Dr. M. Amadou Allahoury Diallo, Commissioner of the Niger’s agricultural programme, called “Nigeriens Nourish Nigeriens (3N)”.

AWM project

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/partners.aspx> for more

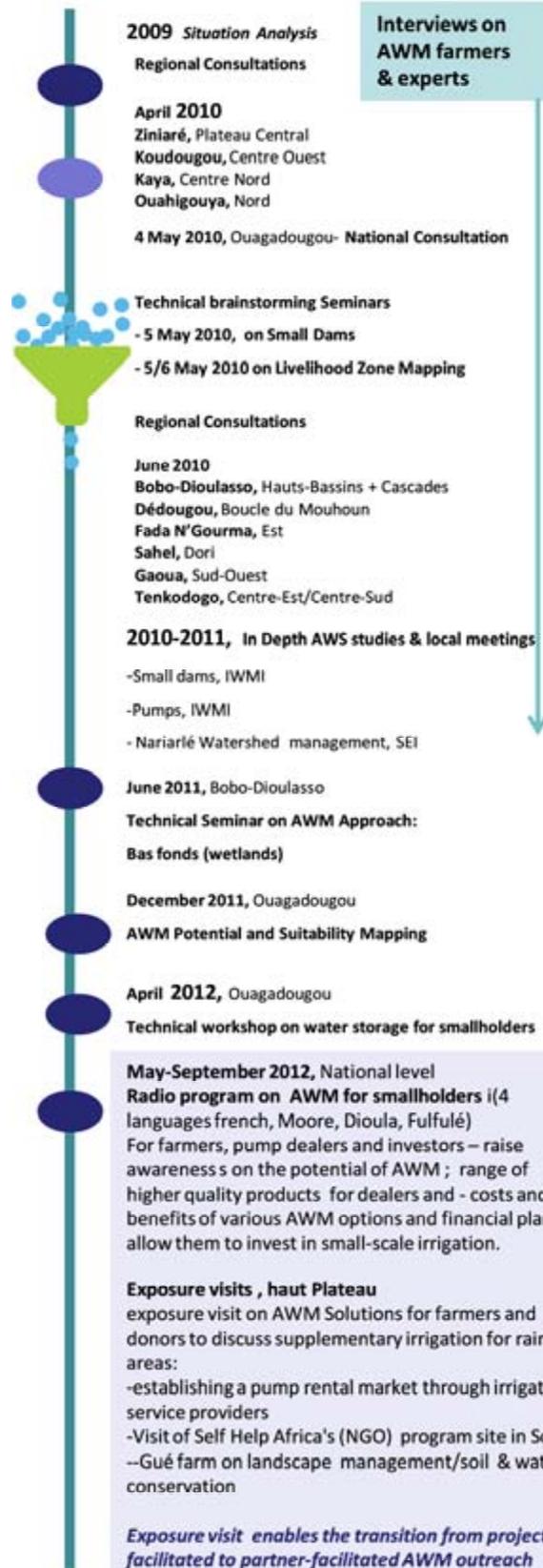
FAO coordinates a multi-stakeholder dialogue process on AWM in close collaboration with national partners. Each country has a National Dialogue Facilitator who supports the appointed National Focal Point within the relevant government agency. Together they ensure the events are prepared in line with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

Contacts:

Domitille Vallee, Dialogue coordinator (FAO NRL) (Domitille.Vallee@fao.org)
Mr. Moussa Laurent Compaore, National Dialogue Facilitator (ml27compaore@yahoo.com)

The Dialogue Update was prepared by Bernardete Neves & Domitille Vallée (FAO).

2009-2012



16 Meetings

500 Stakeholders + Many more
Interviewed or reached out

OUTREACH ACTIVITIES

LOCAL, NATIONAL, REGIONAL, INTERNATIONAL

2010

March- contribution in the first meeting of the national irrigation platform*November*- Farmer Day for the launching of the dry season (participation of facilitator and IDE)*December*- West Africa Irrigation workshop (presentation on motor pumps)

2011

January

Project Review meeting, field visit in Kafue plains, Zambia

February

iDE begins piloting demonstration of drip irrigation system

April

Training, Field visit and Local meetings of the seven national facilitators to Ghana

June

Field visit and Local meetings of the AWS project Steering Committee, Ambassadors and National Focal Points to Keita, Ghana

October

ECOWAS training (on small dams and motor pumps).

November

Farmer Day for the launching of the dry season (supplementary irrigation)

GWP West Africa ground water governance (Indian expert from project)

ICID regional conference in Bamako (presentation on small dams and motor pumps)

December

Burkina Water Forum in Ouagadougou (presentation on small dams).

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 small pumps ; and groundwater issues)

May

Land and water days @ FAO (presentation on small dams, presentation on individual water lifting devices, presentation on the BKF Dialogue process)

June

Exchange visit of Burkina Faso National Focal point rep/ to Ethiopia.

August

World Water Week, Stockholm, Sweden (small scale water management in agriculture ; small storages, capacity building)

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

Constraints and opportunities for AWM adoption

The farmers lack a good understanding of the range of AWM options because they are rarely provided sufficient technical and financial advice or given demonstrations. In addition, there are limited options available on the local market. This makes it difficult for the farmers to select the option most relevant to their needs and to maintain the technology. Adoption seems to be driven by the availability (project investments, government imports or products marketed in the country) than farmers' needs or the actual potential of the solution. In many cases the AWM option is soon abandoned.

There seems to be a disconnection between solutions, the local context and farmers' requirements. In most regions, there could be more dissemination, training and extension, particularly, after an option has been introduced. Spare parts also need to be available.

Farmers need support strategies to allow them to make informed decisions. The project could aid this by giving information to NGOs, government agencies and farmers on the pros and cons of the AWM options being reviewed. It was suggested to document, as much as possible, the pros and cons of those technologies being analyzed by the project in order to contribute to support decentralized offices, projects and NGOs in their intermediary roles in promoting technologies, and providing after-project support.

Understanding farmers' constraints and needs regarding AWM

In Burkina, most of the agricultural production is rain-fed and farmers are typically traditional subsistence farmers. There is a trend, in areas well connected to markets and with a water source, for smallholders to develop irrigated vegetable plots. If the project is to develop approaches that benefit a large number of smallholder farmers, options should be considered that apply to rain-fed staple crops and enable diversification. Such options include drip irrigation, supplementary irrigation with water-lifting devices (motor pumps and possibly solar pumps) and development of water sources (small dams, ponds/*boulis* where no groundwater is accessible). "Valley bottom" (*bas fonds*) development is also important as many of the poorest use this open access resource and would benefit from a longer growing period if water is available.

A specific recommendation referred to the need to rethink small dams to take into account the reality of multiple uses of the stored water as well as equity issues from the design stage. Among the options not considered so far and deserve particular attention in some areas are kitchen gardens, rainwater harvesting and development of crop insurance schemes. Improving land tenure and land access is also a critical condition for successful AWM – in particular, around small dams and for low valley bottom developments.

In terms of smallholder agriculture, preference is systematically given to individual systems over community/collective systems, and to groundwater systems over surface irrigation systems (the second being a corollary of the first), even when collective systems are justified economically. This is justified by the much higher level of reliability and lower transaction costs of individual systems. It is therefore important to take this attitude into account in investment strategies and respect users' choices.

Visit AWM Solutions website:

<http://awm-solutions.iwmi.org/publications-and-outputs.aspx>

Multi-stakeholders brainstorming events

(NC) AWM National Consultation, 4 May, Ouagadougou

AWM regional consultation (RC)

(RC 1) Dédougou, Boucle du Mouhoun, June 2010

(RC 2 & 9) Bobo-Dioulasso, Hauts-Bassins + Cascades, June 2010

(RC 4 & 7) Tenkodogo, Centre-Est/Centre-Sud, June 2010

(RC 5) Kaya, Centre Nord April 2010,

(RC 6) Koudougou, Centre Ouest April 2010,

(RC 8) Fada N'Gourma, Est, June 2010

(RC 10) Ouahigouya, Nord April 2010

(RC 11) Ziniaré, Plateau Central, April 2010,

(RC 12) Dori, Sahel, June 2010

(RC 13) Gaoua, Sud-Ouest, June 2010

Technical brainstorming Workshops on

- (TBWA) Small Dams (preliminary results), 5 /05/10

- (TBWB) Livelihood Zone Mapping 5 and 6 /05/10

- (TBWC) AWM Approach: Bas Fonds (wetlands), 06/11

- (TBWD) AWM potential and suitability mapping, 12/11

- (TBWE) AWM Approach: water storages –range of options, 04/12

Data from- IWMI research & FAO/AQUASTAT Country Brief

http://www.fao.org/nr/water/aquastat/countries_regions/BFA/indexfra.stm



Small reservoirs / Small dams

One water storage option being studied in depth is small reservoirs (1) (also called small dams). Their function is to increase and guarantee water availability in areas with limited and erratic rainfall. Small dams were often designed for a single purpose -initially to provide water to livestock then later mainly to support gravity based irrigation systems- but they increasingly tend to be used as multi-purpose infrastructure. A review of the situation in Burkina was prepared by IWMI, on the basis of surveys of over 250 dams and the analysis of the DGRE national databases. It was presented and debated in various platforms.(2)Participants not only insisted on the importance of these small reservoirs for Burkina Faso but also listed a number of problems and concerns over the conditions for their success. The disconnect between the conception that they would be used only for irrigation and the realities of multiple uses were highlighted as well as key management issues at local, watershed and national levels. Rethinking the design, management and coordination around small dams is at the core of making them a viable solution. Participative process in design and monitoring is important to ensure that multiple use needs are integrated effectively.

Low Valley Bottom ("bas Fonds")

Low valley bottom (3) agriculture was not studied specifically by the project but is considered critical in most of the regions (RC1 to 11) and has been taken up in the dialogue process. The performance and conditions for improving the productivity of low valley bottom for smallholders were discussed in a technical meeting on 23 June 2011. The workshop organized in Bobo Dioulasso – a main area for *bas fonds* – gathered experts from all over the country and from related projects. The findings of the meeting enabled to prepare a potential map for the development of the *bas fonds* and recognized that development strategies should target multiple crops, not just rice – as was done in the past. The Direction des Aménagements et du Développement de l'Irrigation (DADI) plans to revise his criteria for developing low valley bottoms as a follow-up of that meeting as well as related guidelines.

Dry season vegetable cultivation

Low valley bottoms and Reservoirs in Burkina Faso are increasingly used for dry season vegetable production and generate considerable value. Irrigated vegetable cultivation is three times more profitable per unit of area than downstream rice irrigation. The IWMI study of the Korsimoro Reservoir revealed over 1,000 'informal' upstream vegetable producers using small pumps to draw water directly from the reservoir. The informal irrigated areas around such dam is three times more than the official figures. This is happening in all the regions (RC1 to 12; TBW, particularly when there is a market for the fresh products and access to equipment. This situation leads to increasing conflicts between producers, herders, and formal irrigators. The discussions

Supplementary irrigation (4)

Supplementary Irrigation is increasingly considered necessary in a context of increasingly scarce and unreliable rainfall. It implies to increase the capacity of farmer to access water during dryspells and therefore offer them a water sources to tap from, an ability to lift or transport and use in the field. Stakeholders (TBW; RCs) recommended to offer a range of options for capture/storage, lifting, transport and use techniques to smallholders. However it implies a change of practices and attitudes. A starting point is to raise awareness of farmers, particularly those into rainfed farming, on the opportunity represented by small-scale water management, and in particular how supplementary irrigation can help them to adapt to changing climates. The radio program organised by DADI in June 2012 on AWM for smallholders is a first step.

Drip Irrigation (5)

For many regions, drip Irrigation is considered promising but there are many examples of farmers abandoning the technology. Further research is needed: IWMI initiated a new case study to understand the causes; IDE is piloting various technical options to demonstrate and inform farmer investments; and the government is producing a documentary for farmers to raise awareness of the potential of drip irrigation. IDE organized a one-day **demonstration** of its pilot on various drip irrigation technologies in November 2011. It attracted more than 150 persons and raised a lot of interest. In the follow-up IDE **established a resource center** around small-scale technologies, including drip and water harvesting in Ouagadougou. In addition, they will install **200 demonstration sites** around the country and the AWM potential maps and project findings are used to choose the location.

Key Outcomes

The AgWater Solutions Project has provided inputs to the new irrigation strategy through the continuous engagement of the National Dialogue Facilitator with the Ministry of Agriculture, DADI and DGRE, as well as its regional and provincial offices. In particular, all the project partners in Burkina were involved in the first national irrigation platform meeting in March 2011 and contributed further. An irrigation platform was set up and met in march 2012. The following themes are proposed for its next meeting: harmonization of the interventions in the sectors of the AWM targeted at smallholders; exploring options for wastewater reuse in agriculture; raising awareness and capacities of smallholders on AWM.

(1) *Small reservoirs* include water storage (mostly above but occasionally underground) of less than 1 million cubic meters (MCM), the uses of which include agricultural production (for crops, livestock and fish).

(2) A dedicated brainstorming workshop on the 5 May 2010 with 56 participants during the National consultation; a West Africa irrigation workshop in December 2010; the ECOWAS training workshop in October 2011; the ICID Bamako conference in November 2011; the Burkina water forum in December 2011; the AWM mapping validation workshop in December 2011; the World Water Forum in Marseille, France in March 2012; a dedicated 2-day technical workshop in April 2012; at a dedicated session during the FAO Land and Water days in May 2012 and another one in the Stockholm Water Week 2012.

(3) *Inland valleys (bas Fonds)* are low-lying areas, including valley bottoms and floodplains, receiving runoff from hills and mountains.

(4) *Supplementary irrigation* is the process of providing additional water to stabilise or increase yields under site conditions where a crop can normally be grown under direct rainfall, the additional water being insufficient to produce a crop. The concept consists in making up rainfall deficits during critical stages of the crops in order to increase yields.

(5) *Drip irrigation* is an irrigation method where water is applied as a small discharge to each plant or adjacent to it using drip emitters.



Most Promising AWM Technologies and Approaches In Burkina Faso (considered promising in National Consultation and in more than three regions; a more extensive list is available in the report)				
AWM options		Why promising?	Where is it promising?*	Comments
Water storage	Small dams + boulis	Irrigation can be used with pumps; link with GW recharge	N+R: all regions boulis: 3,5,11,12	SIDA fund to rehabilitate 15 small dams and build more
	Large-diameter wells for horticulture production + hand drilling	Horticultural production, particularly for women and youth groups	N + R: all regions+ hand drilling-R: 2,10	UE/Food security emergency PJ with low valley bottom development
	Deep wells (low cost)	Mainly asked in the center of the country for secure water access	N + R:3,4,5,7,10,11,13	Difficulty as limited shallow groundwater, and more flow more adapted to drinking water supply than to irrigation
Water lifting and use	Moto pumps	Private irrigation (i.e., aspersion, semi-Californian) from any type of water source: small dams; rivers, groundwater	N all country + R: all regions	Multiplication around small dams; private investments. But pumps available on the market are not of sufficient quality and lack of diversity for different needs. Associated to gravity, drip or aspersion irrigation.
	Solar pumps	Low-cost use (but high investment) ; innovation on solar pump exists in Region 1 (boucle du mouhoun)	N + R: 3,4,5,6,7,10,11	CILSS/PRS project but mainly for drinking water; techno not yet adapted to private user
use and distribution	Drip irrigation	Water saving for high-value crops, relevant for emerging farmers: need a support for first investment to make the technology accessible	N, R: 1,3,4,5,6,7,8	Suggested low pressure drip systems with 200 liters storage BUT needs a study on systems adapted to flat areas; flexible pipes preferred. BUT maintenance, spare parts and technical support a concern
	Furrow irrigation (gravity systems)	From reservoirs with cement transport structure	N, R: 3,4,5,6,7,9, 10,11,13	
	Semi-concrete underground pipe irrigation (systeme semi-Californian)	Water saving for larger fields	N+R: 1,2,3,4,6,7, 8,9,11,12	With installation of pumping systems or motor pumps or to associate with brick canals or tertiary aspersion
	Border irrigation; basin irrigation	Mainly for vegetable mainly for rice	R:2,4,5,6,8	
Watershed management	Low valley bottom development (type PAFR)	With construction of protected bunds and wells; more relevant for emerging farmers and farmers used to farming in PRP type systems.	N + R: all except 12	Less maintenance work but more complex to manage ; more adapted to emerging farmers; or with a long-term technical support
	Simple low valley bottom development	With contour earth bunds; accessible to the vulnerable and traditional farmers; issues of landownership when development occurs.	N+ R: 2,3,5,8,9,10,13	Easy to maintain but more work as earth bunds will need to be redone; could be a transition stage for farmers new to that concept and then replaced at a later stage by the PAFR system.
	Other low valley bottom development (mixed system)	A mix between the simple development and the complete development	R: 2,6,9	May be more adapted in some regions.
	Soil and water conservation techniques	Zai, stone bunds, earth bunds, vegetative cover, (SWC options election vary for different regions)	N+ R: 1, 3,4,5,7,8,10, 11,12,13	Long and exhaustive experience in Burkina on SWC interventions to be reviewed and lessons on conditions for success in different settings documented.
Support measures to AWM development	Organisational management of small dams and associated schemes	Organize users around small dams and their multiple uses; build on existing user groups if relevant and ensure adequate representation	N+ R: all regions	
	Financial support for access to quality AWM equipment and nutrients	Micro-credit? Subsidies? Tax exemption? To facilitate private investments in some AWM equipment (motor pumps, nutrients)	R: 1, 4,5,7,8,10,12,13	Innovative financial and insurance schemes are required; need to secure returns or limit risk for risk adverse communities (traditional farmers, the larger group)
	Improve value- chain-	Production+ transformation+ quality control+ market	N+ R: 1,2,3,5,6,7, 8,9,11,12	Investments in small- scale AWM Technology needs to be connected to market access – disadoption linked to lack of market + also consider dissemination of technology
	Improve capacity to select, use or innovate on AWM	Concerns multiple stakeholders: farmers, researchers, technical support, youth...	N + R:2,3,4,8,9,11,13	Farmers, youth, women groups, AWM equipment use + maintenance ; becoming entrepreneur; agricultural practices, nutrient application Research-public/private – equipment

*Notes: 1 Boucle du Mouhoun 2 Cascades 3 Centre 4 Centre Est 5 Centre Nord 6 Centre Ouest 7 Centre Sud 8 Est 9 Hauts bassins 10 Nord 11 Plateau central 12 Sahel 13 Sud Ouest



Map 1



Map 2

Small reservoirs



Map 3

Small pumps



Map 4

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).

The following steps help identifying AWM practices which are most suitable in each Livelihood Zone. First, considering their biophysical suitability, like rainfall, hydrological network, and soil type (Map 3 & 4) and then linking that with the demand for a given practice by livelihood zone (based on farmers' typology and their ability to invest in improved AWM practices).

The mapping process has gathered stakeholders' inputs and feedback through a series of workshops:

- April to June 2010: 10 consultations at regional level for inputs from multi stakeholders on local farming typology and investments preferences;
- May 2010: Livelihoods Mapping Workshop (TBWA) to prepare Map 1.
- May 2010 (TBWB) on small dams ; June 2011 (TBWC) on low valley bottom to discuss AWM options suitability domains;
- December 2011: (TBWD) Technical Brainstorming Workshop on AWM Potential and Suitability Mapping;

Maps, being a very effective communication tool in soliciting feedback, have, on the other hand, supported the dialogue process in various events.

AWM Potential and Suitability Mapping

- Livelihoods Zones in Burkina Faso (Map 1)
- Potential for Poverty Alleviation through AgWater Management (Map 2)
- Suitability of AWM Technologies:
 - Small dams (Map 3)
 - Low-cost pumps (Map 4)

Physical suitability for Map 4 small pumps has been assessed on the basis of: travel time to market (defined as centers of 20,000 inhabitants or more), with areas at 4 hours or less considered highly suitable (areas at more than 8 hours excluded), proximity to surface water, and occurrence of soils with shallow groundwater potential.

Livelihoods context is assumed to be more favorable in zones with relatively higher prevalence of market-oriented smallholder farmers and high population density.

A suitable area for small dams has been assessed using Aridity Index (where yearly precipitation divided by yearly reference evapotranspiration is between 0.2 and 0.65, semiarid to dry-subhumid); in addition, a higher livestock density is assumed to favour the multiple uses of small dams.

For more information:

Report Livelihood zones analysis, 2012.

http://www.fao.org/nr/water/docs/BFA_LZ_analysis.pdf

Country Investment Brief. 2012.

http://www.fao.org/nr/water/docs/Country_Investment_Brief_Burkina.pdf

Information for action

Each of the Ag Water Solutions Partners is refining specific AWM information for action.

- The Ministry of Agriculture (DADI) works on **eligibility criteria for the development of low valley bottom** (follow-up of the June 2011 workshop).
- iDE is piloting and documenting the different costs and benefits of various types of **drip technologies targeted at smallholders**.
- FAO works on the synthesis of a range of **soil and water technologies** (in relation to another project in the North, Dori area) and informing the revision of **small dams design for multiple water uses**.
- DADI organized with DGRE and FAO a technical seminar to share the small dams business model with experts and public bodies and jointly develop practical implementation guidance (April).
- FAO, INERA, and DADI mapped the locations where specific small-scale **AWM solutions** can be seen, or would be suitable for smallholders (AWM potential mapping) and characterised the different livelihood zones of the country.

Knowledge and capacity of the majority of smallholders, mainly rainfed farmers or herders, is to be built on the opportunity offered by improved water management to secure their livelihoods at field and watershed level.

- DADI piloted in May 2012 specific **learning visits for small groups of farmers, extension agents and policymakers** in a region where promising solutions can be seen and explained at the sites (e.g., Wegoubri farm, Kosimoro small-scale irrigation systems, and IDE technology center). A manual could be developed with different routes and tested through a series of visits.
- A **radio program** was organized in June 2012 with four sessions of 28 minutes each in four languages (French, Mooré, Dioula, Fulfuldé). It aims to inform farmers as well as interested stakeholders of the potential of AWM for coping with climate vagaries and improving their food security and production. It shows the range of options at hand and gives information on costs and benefits of various AWM options and financial plans to allow them to invest in small-scale irrigation. Such a program should be replicated prior to the next
- In addition, **TV or internet broadcasting on AWM** is planned for agriculture targeted at farmers (small-scale equipment available, their advantage and disadvantages).

Outreach Activities Strengthening Partnerships

Many opportunities to present and discuss project outcomes were used in 2010 and 2011 in Ouagadougou, in West Africa and internationally. Some of the findings echoed with situations in other countries in the region and project findings are relevant beyond Burkina. This is particularly the case not only for the small dams and the informal irrigation development around them, but also for the boom in motor pumps use and the low valley bottom development. There may be some lessons to be learned for Burkina from Mali, Senegal and Niger on other water capture and storage options as well as on the development of socially accepted drip systems and the use of solar energy for pumping and drip.

Interactions occurred in the field by meeting groups of farmers in the sites of the Kosimoro dams and Lumbila dams as well as in the Wegoubri farm in Gué. iDE developed a technology center over 4,500 m² with a permanent demonstration site for small storage & drip technologies for smallholders. The plan is to set demonstration sites all around the country managed by smallholders. Some of those could be set in informal vegetable plots that are developing around dams and wells, as these would offer good outreach to smallholders.

Cooperation has been initiated with the CGIAR Challenge Program on Water and Food (CPWF), Volta project, to develop a dialogue process on the same issues in Burkina and, in particular, on small dams.

Representatives of the **investors and donor agencies** in the country (like the World Bank, SIDA and the African Development Bank) were briefed on the project's findings both in Ouaga and in Bamako during the ICID regional conference, as a basis for discussion of their priorities for investment in support of smallholder farmers. Follow-up products will be developed accordingly to proposed avenues for their engagement in AWM.

AWM information dissemination in the next Agriculture Fair is proposed on a range of pumps and irrigation equipment for small-scale farmers, as well as presenting the potential of using mobile phone technology to inform farmers. DADI has prepared a file of the pumps available on the market and IDE is documenting the range of options for drip technologies and mobile phone use.

Visit AWM Solutions website:

<http://awm-solutions.iwmi.org/publications-and-outputs.aspx>

For a summary of all the regional consultations and other AWM Solution research briefs:

- AWM situation analysis by Youssouf Dembélé
- AWM Regional Consultations Summary Report by Youssouf Dembélé, in French (forthcoming online).
- AWM at Watershed Scale: Scenarios for Nariarle Basin (Online).
- Small dams--mapping of formal and informal irrigation by J.P. Venot (on-line).
- IWMI research report 144- Revisiting Dominant Notions: A Review of Costs, Performance and Institutions of Small Reservoirs in Sub-Saharan Africa by J.P. Venot, 2012 (on-line)
- Management of AWM and users around the Kosimoro reservoir by Gael Ndanga K. October 2011 (French)

Other ongoing research

- Opportunities and Constraints of Drip Irrigation for Smallholders
- Opportunities and Constraints of Adoption of Motorized and Treadle Pumps.



Mapping reports

- Report Livelihood zones analysis, 2012.
- Country Investment Brief. 2012.



Looking Beyond 2012

A number of events are proposed as a follow-up of dialogue process, including the following:

- Project findings shared in private audiences with high-level decision makers and investors, and with the national irrigation platform at its next gathering.
- Involve dealers, manufacturers and other irrigation service providers in technology fairs so that they can see the range of small-scale AWM options and quality of available products on the local and international markets. This will also be an opportunity to connect suppliers and dealers.
- Inform about findings of case studies in public seminars, as part of an “AWM platform” in Burkina Faso University.
- Encourage local financing organizations to support farmers’ investments by providing them with facts and figures that show which AWM options are good investments, e.g., costs, returns, payback period.
- The Irrigation platform to link across projects in the country and provide an avenue for sharing project findings and building on the work done, for example, the CPWF Volta project may pilot the small dams’ business model.
- Develop outreach using local radio prior to next dry season, as well as local TV (documentary on the landscape management of the Gué farm ; on dri irrigation).
- Inform the SP/CPSA (Secretariat Permanent de Politiques Agricoles) to obtain support from parliament for supplementary irrigation options.
- Connect to discussions on groundwater use in Ghana, India and Ethiopia, and arrange field visits between the three countries. (Future)
- Seek support for donors to improve agriculture in low valley bottoms through groundwater development. (Future)

Disseminate all material of project to all stakeholders involved in project .

