

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 technologies and approaches, such as soil moisture management, drip irrigation and water harvesting solutions at the farm, community and watershed levels, as well as 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 National Consultation Workshop was an opportunity for such engagement and for participants to share their opinions on AWM solutions that would be appropriate for Ghana and could be out-scaled. This briefing note provides a short summary of the discussion held during the Workshop and the AWM solutions that were prioritized. For more information on all the AWM solutions currently being used in Ghana the reader is referred to the Situation Analysis Briefing Note, which is also available on the website.



AWM in Ghana

Irrigation development is low in Ghana, with only 0.05% of all the arable land under formal and informal irrigation. The government recognizes this problem and is working to address it through several policies and plans:

- Under the Food and Agricultural Sector Development Plan (FASDEP II), irrigation schemes will increase by 25% (50,000 ha) by the end of 2015 with a commensurate output increase of about 30-50%.
- The implementation of the Accra Plains Project - feasibility studies and detailed designs for the first phase

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of 5,000 ha - was completed in 2009 and is under review by the World Bank and the Japan International Cooperation Agency (JICA) for possible funding.

- Construction of an estimated 10,500 ha of irrigation under the Millennium Challenge Account (MCA) to improve and increase the production of the horticultural industry.
- Development of 22,500 ha of small-/micro-scale irrigation and drainage schemes to benefit 120 communities in five regions of Ghana.
- Review and update of the feasibility studies of large-scale projects to support agro-industrial developments, including Bui, Kamba, Tamne, Mpaha and Avu-Keta, which are expected to irrigate an estimated 200,000 ha.
- Implementation of irrigation mapping studies.
- Design and development of 100,000 ha of sustainable water harvesting schemes in Fumbisi, Nasia, Tamalgu, Katanga and Afife.
- Provision of basic equipment and support for routine maintenance of irrigation facilities.
- Establishment of a database of all irrigation schemes developed by NGOs, groups or individuals.
- Launching of a National Irrigation Policy and writing of the National Irrigation Development Master Plan.

Despite these plans, special attention is required in a few other areas. First, there needs to be a proper balance between supply- and demand-driven approaches. Farmers may not always be aware of all available technology options but, at the same time, a host of local innovations exist that are not accounted for and that should be reviewed, supported and capitalized on. Second, involving the private sector in smallholder AWM is critical but this must be done in such a way that the needs of smallholders are protected.

AWM Solutions Suitable for Ghana

Participants were asked to identify the AWM solutions they felt would be most promising in Ghana. Then they rated the suitability of these solutions for each of Ghana's six agroecological zones based on a rating scale of 1 to 5, in which 5 indicates highly suitable and 1 indicates unsuitable. Based on the mean scores calculated for Ghana as a whole, the following five AWM solutions were identified in order of significance:

1. **Water lifting technologies**, which can be owned and operated by smallholders privately or communally, and by commercially oriented large- scale farmers.
2. **Small reservoirs and dugouts** that can be owned communally by smallholders or privately by commercial farmers.
3. **Innovative institutional arrangements** for accessing water for agriculture and output markets including outgrower schemes and Public-Private Partnerships.
4. **Groundwater use** for agriculture including shallow and deep groundwater using different drilling and pumping techniques.
5. **Lowland/Inland valleys** development.



Water lifting technologies to pump water from rivers

These are common in the Ashanti region and increasingly so in other regions with good surface water, mostly for off-season vegetable cultivation. The communal pumps are owned by a small group of farmers who use the pump by turn, buying their own fuel but sharing maintenance costs. There are good prospects for further expansion in regions with adequate surface water resources. However, concerns were raised about environmental impacts on rivers (erosion and pollutions from agrochemicals).

Small reservoirs and dugouts

These are very common in northern Ghana where rainfall is erratic. They are meant to be managed by the communities through Water User Associations. Small reservoirs and dugouts are in high demand because they support multiple livelihood strategies (livestock, irrigation, fisheries and domestic uses). There is scope for improving their current

use through well planned interventions but also challenges, for example, initial investment costs are high (communities depend on public funds or support from NGOs), performance of many reservoirs is below expectation, and their management remains imperfect due to technical and organizational failures.

Groundwater use for irrigation - shallow and deep tubewells

Groundwater has many advantages and it seems to be the preferred choice of farmers. However, it is uncertain how sustainable groundwater use is, as there is little information on the location, quantity and quality of suitable aquifers. Drilling costs are very high because a number of drilling attempts may be required to find an aquifer and there are only a few drilling companies.

“Outgrower” schemes for smallholders

These help smallholder farmers secure market access (one of their biggest challenges), and help to reduce risks, for example by sharing costs. But the success of these schemes, and the willingness of farmers to take part, depends on the transparency and trust between companies and farmers. Outgrower schemes have been successful for producers of mango, pineapple and some vegetables.

Lowland/inland valleys

These refer to numerous flat and relatively shallow valleys that occur in the extensive undulating plains and plateaus that are found across the African landscape. They cover approximately 190 million ha in sub-Saharan Africa and occupy 12.1% of the total land area of Ghana and are highly suitable for rice cultivation.

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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