



*This briefing note summarizes the case study findings for discussion and comment*

**Small reservoirs mean different things to different people. For investors, the challenge lies in coordinating and integrating multiple users and social groups around a common resource.**

### The opportunity

Small reservoirs<sup>1</sup> are an on-the-ground reality in sub-Saharan Africa. They provide significant opportunities for soil and water conservation, drought proofing and developing small-scale community-based irrigation schemes. A well-designed reservoir can support multiple water uses including livestock watering, fisheries, domestic and small business water use, and handicraft activities.

Small reservoirs are existing assets in which significant investments have been made by governments, donors, nongovernmental organizations (NGOs) and communities. They are high in demand among local communities; fit in with national strategies and policies; and continue to attract funding from international development partners. Small reservoirs provide multiple opportunities for intervention.

A critical look at their current performance shows that small reservoirs perform well below expectations when it comes to irrigation. By contrast, they provide multiple benefits that are often unaccounted for to multiple users, including women.

### Small reservoirs in selected sub-Saharan African countries

Burkina Faso > 1,500	Mauritania > 350
Ethiopia > 100	Mozambique > 600
Ghana > 1,000	Uganda > 500
Ivory Coast > 600	Zimbabwe > 9,000
Mali > 800	Zambia > 2,000

### The research

District-level working sessions with extension agents from the Ministry of Agriculture in each country were organized in Burkina Faso, Ghana, Tigray-Ethiopia and Zambia. These meetings provided information on dam characteristics; design purpose versus actual use; perceived level of performance; constraints faced by communities; the benefits derived; and the local institutional arrangements and modes of management. Nearly 850 dams were documented.

For a more qualitative understanding of the multiple uses and perceptions of small reservoirs, 41 detailed case studies employed participatory exercises, semi-structured interviews with individual small reservoir users and key informant interviews in the communities.

# SMALL RESERVOIRS IN SUB-SAHARAN AFRICA

*Based on a report by Jean-Philippe Venot*

Finally, key informant interviews were held with policymakers in the ministries of Water Resources, Agriculture and Environment at the national and local level, with donors and technical development partners, elected officials of local executive bodies, and other key stakeholders to explore the governance structure, and implementation and planning processes of small reservoirs.

### Main findings of the research

One of the main findings of the research is that the use-value and performance of small reservoirs are seen and evaluated from multiple vantage points.

Extension agents tend to look at reservoirs as engineering structures and give them a low performance rating based on design and infrastructure factors, such as (1) low quality of dam, spillway, irrigated area; and (2) low-quality feasibility study. Shortcomings in the governance of investment and planning (e.g., procurement, tendering) processes, leading to poor quality design and construction are widely regarded as a concern as well.

In most cases, local people gave a higher satisfaction rating than extension agents, suggesting that small reservoir performance as well as the institutional arrangements deemed appropriate for their governance depend on the vantage point of the actors considered. Local people indicated high levels of satisfaction in terms of equity and benefits derived.

Small reservoirs are invested with social meaning and local populations value them for multiple reasons. However, rural communities are not homogenous. Surveys highlighted that small-scale water users (e.g., the poor, youth, women and fishers) tend to give higher satisfaction scores when irrigation activities are less developed. Conversely, they reap fewer direct benefits when intensive cultivation is the main goal.

The current blueprint for developing and managing small-scale irrigation projects is one of community-driven participation, mainly through Water User Associations (WUAs). Among the detailed case studies, there was no clear correlation between the level of satisfaction of local users and the presence or absence of a WUA.

Table 1. Governance of small reservoirs: Who does what (Percentage (%) of answers on decision-making role).

	Line ministries	Donors	Contractors	Local government	Traditional authorities	User committees/ WUAs	Community	Farmers	Others
Construction	37	5	30	7	2	2	3	2	2
Major maintenance	37	12	6	21	2	7	4	2	3
Minor maintenance	4	0	0	5	5	37	43	6	2
Setting of management rules	4	0	0	4	22	43	21	6	2
Implementing, monitoring rules	5	0	0	4	13	50	22	5	4
Relation with other actors	11	1	0	9	12	42	18	3	5
Conflict resolution	6	0	0	9	61	23	12	1	2
Environmental protection	7	0	0	4	10	36	34	9	2
Extension role	58	2	0	2	2	5	2	0	6
Agricultural practices and marketing	13	0	0	1	5	14	12	46	6

At least eight groups were identified as contributing to the governance of small reservoirs (Table 1) by assuming different and complementary roles.

Local concerns may be best addressed by facilitating multiple institutional relationships at multiple scales rather than promoting a single-scale/single-purpose entity – the WUA. The role of local authorities such as district assemblies might be enhanced to reinforce downward accountability.



Small reservoirs benefit millions of smallholders in rural areas

<sup>1</sup>In most of sub-Saharan Africa ‘small reservoirs’ are earthen or cement dams that are less than 7.5 meters high. They can store up to 1 million cubic meters of water and sometimes have a downstream adjacent irrigation area of less than 50 hectares. Capital investment is generally externally driven and community management remains the norm.

### Potential interventions

- Coordinate and integrate multiple users spatially (around the small reservoir/watershed) and temporally (along the project cycle).
- Facilitate multiple institutional arrangements.
- Strengthen existing policies, procedures and multi-level links within organizations.
- Take/introduce a step-wise approach to assess feasibility and needs when planning rehabilitation or new construction.
- Establish pre-qualification of contractors and increased attention to award of contracts.
- Develop guidelines for contractors on the design of multiple-use reservoirs.
- Build capacity for extension workers, especially regarding multiple-use systems and social science.

### Potential impacts

- Better information will facilitate more effective decision making.
- Improved planning processes will reduce investment costs with a positive impact on performance.
- Adopting a multiple-use perspective for monitoring will improve performance.
- Better return on investment.

These findings and recommendations are reproduced here for the purposes of discussion. The AgWater Solutions Project welcomes all comments and suggestions.

These should be directed to [AWMSolutions@cgiar.org](mailto:AWMSolutions@cgiar.org), please write “small reservoirs” in the subject line.