

## Section 9 – Policy implications

In this final section you'll learn:

The benefits and challenges associated with farmer-led irrigation development

Policy recommendations moving forward

### Benefits of farmer-led irrigation development

The SAFI project showed that households using irrigation suffer fewer months of food insecurity and have better housing and higher indices of asset ownership than non-irrigators. Additionally, an overwhelming majority (84%) of irrigators consider that irrigated crops deliver at least half of their income. Farmer-led irrigation development thus offers benefits in terms of increased income and economic growth.

Where governments and donors have supported farmer-led irrigation development, the benefits are typically achieved at much lower public investment costs (USD2-4000/ha) than those associated with large-scale irrigation (USD10-20,000/ha). In part, this is because irrigation development that is farmer-led is associated with partial water control and smaller-scale infrastructure development than state and donor-supported investments.

Where farmers themselves are investing labour, capital and land in irrigation, the cost to African government budgets is further reduced. In this way, farmer-led irrigation development may offer a strategy through which governments can invest less to achieve their agricultural productivity and food security goals.

Farmer-led irrigation development builds on farmers' own knowledge of the local variability of land and water resources, potentially making it more responsive and adaptable to environmental change.

### Risks of farmer-led irrigation development

Increasing irrigation may raise competition for water, not just among irrigators but between irrigation and other sectors, such as hydropower and municipal water supplies. Farmer-led irrigation development thus poses challenges of both monitoring and regulation to government agencies responsible for planning land and water resource management.

Rural economies in sub-Saharan Africa need to create employment and diversify agriculture. Irrigators tend to have more land and are more likely to hire labour than non-irrigators. Thus, while the agricultural intensification that farmer-led irrigation development promotes will raise irrigators' incomes and generate new employment, it may also accelerate social inequality, across generations and gender. In terms of gender, only 16% of irrigating households examined in the SAFI project were female-headed compared to 26% of non-irrigating households. Further questions arise over gender differences in household labour in irrigated fields and ownership of irrigated crops.

Increased fertiliser and pesticide use among irrigators raises downstream pollution risks, particularly where technical advice on input use may be lacking. Additional health risks may arise from the use of non-treated wastewater to irrigate vegetables in urban and peri-urban areas.

Finally there is a risk that centralised irrigation planning authorities may respond to farmer-led irrigation development in ways that over-regulate farmers' irrigation activities and reduce their dynamic and entrepreneurial character. In this regard, farmer-led irrigation development poses

particular challenges to legislative and regulatory bodies which need to create regulatory frameworks that are enabling of small-scale irrigation initiatives while mitigating the risks.

Attention must also be paid to the politics of water resource allocation. Once small-scale farmers are no longer recognised as “non-commercial subsistence cultivators of rain fed crops” but rather as “entrepreneurial users of (in aggregate) major quantities of water”, they would move into a highly politicised policy arena in which the politics of water allocation is dominated by highly organised and influential lobby groups such as:

- hydropower;
- urban water supply;
- wildlife tourism;
- international investors.

All these groups have experience of gaining preferential access to water at the expense of agriculture.

We know from talking to policy makers that farmers are seen as wasteful users of water. This may be further accentuated by a policy environment shaped by international development agencies’ pre-occupations with water conservation.

A key policy question for small-scale farmers is whether they have water rights when they develop irrigation. If farmers pay water charges they acquire water rights; conversely, if they do not pay charges, their rights to water may be ignored by authorities responsible for water resource management. In African contexts the question of how to facilitate and [regulate water-use](#) by small-scale farmers remains a policy challenge.

A particular problem is that many trained engineers expect irrigation to look like this:



Yet in reality, African landscapes in which farmers have developed irrigation more closely resemble this:



## The challenges of adapting policy to engage with farmer-led irrigation development

Below, an irrigation engineer discusses the challenges of adapting policy to engage with the phenomenon of widespread farmer-led irrigation development.

Mohamed Naouri, Assistant Professor at the [Department of Agronomy](#) at [Université Mohamed El Bachir El Ibrahimi de Bordj Bou Arréridj](#), Algeria, advises on what he thinks is key for policy makers to consider when working with farmer-led irrigation development.

Watch the video (<https://youtu.be/Ge57xyRd7AM>)

### Video Transcription

*I think that developing irrigation technologies for a diversity of farmers and also for the diversity of situations can be a really hard question to solve for irrigation engineers. This is especially true when we are talking about or when it concerns farmers and smallholders from developing countries. The linear model of transferring technology shows its limits so I think that policy makers have to pay more attention to the translation processes. This means not only building on adaptation of technologies to local needs but also building a network of actors who can handle this and who can support such irrigation technologies or such innovations.*

Aloysius Mubangizi is a Water and Resources Consultant and advises governments and institutes like the World Bank. He explains some of the tensions between the different actors in farmer-led irrigation development.

Watch the video (<https://youtu.be/ycc-CVloOwQ>)

### Video Transcription

*Governments are trying to create a scheme that is very expensive and that becomes an issue with budgeting because governments don't have enough resources. Then they think maybe we could do more if we got farmers involved and developed what they are using and we create a big thing out of*

*it and spend a lot less money as there is less maintenance, less installation. Governments and development partners are now interested in this and want to support the farmer-led line of technology. Because the farmers are already adopters and adapters there is no hardship for them in trying the technology and maintaining it. They already know how to use it and can be helped to do it better.*

*We need the governments to recognise informal irrigation schemes and be identified. If you see a farmer struggling you can line a canal and then leave it to them and then go – they already know what they're doing. Translating the technology helps the farmer feel in control and he doesn't oppose it.*

## Policy recommendations

The SAFI project developed the following recommendations with policy makers to help them work with farmers implementing their own irrigation initiatives.

### Make farmer-led irrigation development part of economic and social security strategies

- Seek ways to reduce vulnerability and spread benefits of irrigation among different social groups;
- Facilitate access to reliable markets for inputs and produce;
- Identify and remove constraints such as transport infrastructure, taxation of key inputs and electricity supply.

### Learn from existing practice and the diversity of irrigation that farmers operate, design and influence

- Analyse the dynamics and constraints of farmer led irrigation development in specific contexts;
- Manage expectations for replicability of experience from one site to another;
- Encourage opportunities for farmer-to-farmer learning.

### Get more accurate data

- Evaluate alternative, and possibly complementary, methods of mapping and measuring irrigation beyond formal 'schemes';
- Revise irrigation statistics to enable recognition of location and extent of farmer led irrigation development;
- Identify the status and support the needs of farmer-led irrigation development.

### Develop a supportive and accessible regulatory framework

- Recognise small scale irrigators as productive water users;
- Avoid onerous or costly registration procedures that stifle initiatives and dynamism;
- Review legislative and regulatory frameworks for water and agriculture to ensure they take account of farmer-led initiatives;

- Explore investment and technical strategies for intensification instead of expansion of irrigation;
- Identify how state agencies' technical and organisational capacity needs to be improved to enable more effective engagement with farmer-led irrigation development.

### **Key messages:**

- Benefits of farmer-led irrigation development include: raised productivity, incomes and employment; cheaper for governments than large-scale irrigation schemes; makes greater use of farmers' local knowledge.
- Challenges that arise from widespread irrigation expansion (not only as the result of farmer-led irrigation development) include: increased water use; issues of competition with other water users; may accentuate existing social and economic inequality; increased pesticide use may be associated with pollution risk.
- Active lobbying by farmers for government support can be part of farmer-led irrigation development, but flexible funding, community-ownership of the intervention process and an eye for existing local institutional arrangements are key to maximise the benefits of any intervention
- By creating a policy and regulatory framework which values farmer-led irrigation development in all its diversity, and by removing constraints such as poor infrastructure, governments can support farmer-led irrigation development while mitigating possible risks.
- The rapid expansion of farmer-led irrigation initiatives offers great benefits to farmers and the rural economy, but its rapid spread and dynamic nature also comes with its own challenges for policy makers and irrigation practitioners.

### **Suggested further reading:**

Modernisation and African Farmer-led Irrigation Development: <http://www.water-alternatives.org/index.php/alldoc/articles/vol12/v12issue1/481-a12-1-7/file>

Re-introducing Politics in African Farmer-Led Irrigation Development: <http://www.water-alternatives.org/index.php/alldoc/articles/475-a12-1-1/file>

Water laws and farmer led irrigation development: <http://www.water-alternatives.org/index.php/alldoc/articles/vol12/v12issue1/483-a12-1-9/file>

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