SAFI Studying African Farmer-led Irrigation

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Workshop on
Policy and investment options for irrigation development in Tanzania

Tuesday, 26 June 2018

Protea Hotel Courtyard, Barack Obama Drive, Dar es Salaam 1000, Tanzania

Organisers:

International Food Policy Research Institute, and University of Manchester, with support from the DFID-ESRC Growth Research Programme

Further information

http://www.safi-research.org/

https://www.ifpri.org/project/assessing-models-public-private-partnerships-irrigation-development-africa-ampppida

Growth Research Programme

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Workshop Objectives

To present and discuss the results of the Studying African Farmer-led Irrigation (SAFI) and Assessing Models of Public Private Partnerships for Irrigation Development in Africa (AMPPIDA) projects' research on irrigated agriculture in Tanzania and to explore what this research tells us about the potential for irrigation investment by government and private sector, including smallholder producers, and public-private partnerships (PPPs).

The SAFI and AMPPIDA projects are funded by the UK government's DFID-ESRC Growth Research Programme (DEGRP). They have undertaken research over the past three years to investigate two distinct pathways of private sector investment in irrigation development and their engagement with markets, development organisations and government planning and regulatory agencies.

The workshop discussed different strategies for irrigation development, focusing on the following themes:

1. Mapping and Measuring :
    a. What does the data tell us, quality of the data and visibility of water use.
    b. Official statistics and methodological advances.

2. Impacts
    a. Understanding irrigation in the context of livelihood change
    b. Issues around land rights, gender, water demand

3. Strategies and alternative models
    a. Consideration of 'alternative' models, in the light of findings from the SAFI and AMPPPIDA projects, and the development of recent national strategies elsewhere (Ghana).
    b. Sources of investment: Government, ODA, Large-scale private sector; Smallholder farmers
    c. What are the challenges for policy and regulatory bodies?

Workshop Agenda

09:00 - 09:15	Welcome and Introductions
09:15-09:30	Opening remarks Eng. Dr. Eliakim Chitutu Matekere, National Irrigation Commission
09:30 - 10:45	Public-Private Partnerships for Irrigation Development: Results of the AMPPIDA project
10:45 – 11:15	Break
11:15 – 12:30	Farmer-led Irrigation Development: Results of the SAFI project
12:30 – 13:30	Lunch
13:30 – 15:00	Identification and discussion of irrigation policy issues: what is working well; what needs to change?
15:00 – 15:30	Break
15:30 – 16:00	Group discussion of policy and investment options and recommendations
16:00 – 17:00	Feedback and general discussion – Closing remarks

Opening Remarks by Dr. Eliakim Chitutu (Ag. DG - NIRC)

Dr Eliakim Chitutu expressed his appreciation for organization of the workshop, and financial support to the SAFI and AMPPPIDA projects. He thanked the project teams who worked on the ground, and indeed for those who have attended this information sharing platform and willing to take the results of the work further.

Opportunities for improved agricultural productivity through irrigation development continue to unfold in Tanzania (i.e. through Plans and Programmes). Irrigation potential is 29.4 million ha and the development target is to reach 1.0 million ha with improved irrigation infrastructure by 2025. This is an opportunity to re-evaluate both the potential and past development performance of investments and agricultural water management through various technologies. In circumstances where legal and regulatory frameworks are still evolving, this evaluation is even more important. SAFI and AMPPPIDA projects have contributed to that endeavour.

The Revised National Irrigation Master Plan (RNIMP, 2018) identifies priority projects or schemes based on land and water resources availability, market access and scheme accessibility, etc. The Agricultural Sector Development Programme (ASDP II) emphasizes irrigation infrastructure development, water management, and operation of schemes.

Dr Chitutu said the government would continue setting ambitious development targets (e.g. reaching 1.0 million ha by 2025), but the level of investment will decide whether they can be achieved. Looking at irrigation financing models by various stakeholders is, then, very critical. The Government, Development Partners, Private Sector are some of the stakeholders and Public-Private Partnership (PPP) arrangement is one of the models. PPP arrangements require careful stakeholder task alignment. This is where the tool developed by AMPPPIDA comes in handy.

Although the focus is on medium to large scale schemes, sustainability still requires farmers to take the lead. Therefore, assessing the growth potential of farmer-led irrigation is still crucial. That is why SAFI project focused on that.

This workshop is an opportunity to share the results of the two projects and see how these can be taken further in plans, operations and policy reviews. This gives all present an opportunity to be part of the work done.

Public-Private Partnerships for Irrigation Development: Results of the AMPPIDA project

Faustin Maganga and Ruth Meinzen-Dick

(see presentation here)

The presentation highlighted that Public-Private-Partnerships (PPPs) were seen as a solution to the high cost of irrigation and government budget constraints. The project set out to examine a number of PPPs operating in Tanzania:

> KPL, in Kilombero, was built on a former state farm that had been re-occupied by local villages. Now operating as a 'core estate' with unirrigated outgrowers, producing rice and maize, but struggling with cheap maize imports and expensive machinery imports.
>
> Madibira Cooperative producing rice. African Development Bank investment provided infrastructure but access roads are poor and the rice mill shut down due to electricity shortages. The cooperative suffers from unreliable markets, insufficient equipment, and water limitations due to quotas allocated by the Water Basin Authority.
>
> Kilombero Sugar. Irrigated core estate produces sugar-cane, but company also purchases cane from unirrigated outgrower production. Outgrowers manifest distrust of company assessments of weight and quality (sucrose content) of cane deliveries.

Acquiring land for large new irrigation systems is problematic. To date, most of the PPPs are not developing new areas, but are taking up abandoned former state farms. Smallholders are not full partners in many of the systems, where irrigation is provided to the core estate but not the outgrowers. A key finding from these studies is that coordination is a primary problem, with many actors involved, including many government agencies, multiple private sector partners, and others such as research institutes, financing agnecies, and NGOs. A lack of understanding of these different actors has contributed to tensions among smallholders, companies, and government agencies. The AMPPPIDA project has developed a tool-- STAMP4 Irrigation (Stakeholder-Task Alignment Matrix for Public-Private-Producer Partnerships in Irrigation) to help improve communication about roles and responsibilities of all actors in PPPs.

Discussion of the AMPIDDA presentation raised a number of issues:

- The presentation showed that there are complicated arrangements. Does that complexity need to be reduced? Not necessarily, but it is important to understand and engage with that complexity, to avoid things falling through the cracks or generating a 'blame game'.
- There seems divergence between different agencies in their approaches to water scarcity and conservation. Rufiju Basin Water Office is concerned about limited water availability, but Irrigation Master Plan says there is huge potential to expand. They need to get together. WWF project funded by DfID tried to bring together different actors in Rufiji Basin to see each other's conditions. More could be done to adopt water saving technologies, e.g. SRI (system of rice intensification).

- The future of irrigation depends on water resources, which are becoming scarce. Modernizing irrigation infrastructure can make it more water efficient: reduce unlined structures, provide gates to keep water where it is not required. We have not yet invested much in water-saving technologies, but that is the direction. National Irrigation Master Plan requires harvesting water in rainy season, so we need dams and reservoirs. There is possible use of water from Lake Victoria, (but that crosses international boundaries, so there would be many issues involved).
- Is transforming Associations to Co-ops a good idea in a context where people are not happy with Co-ops due to Tanzania's mixed record? There are governance challenges with Associations, but they have been able to link farmers with investors and FIs. But why so many Associations? This was seen as a result of associations tending to form around specific individuals, with management favouring those close to themselves. The National Irrigation Act requires that farmers be organized into registered Irrigators' Organizations. Unlike coops with voluntary membership, these associations have compulsory membership because the farmers have shared facilities, hence management and maintenance must be done jointly.
- The case studies highlighted the challenges of marketing: importing of rice makes price volatile, so need to work to make common interest between company and government allowing importation.
- Within actors there is a mismatch. How do we involve farmers as partners in planning development? E.g. in agreeing to bank loans, farmers were not informed about payback period. There is a need to hear from farmers, not just implement "for" them. The challenge is farmers have to have sense of ownership, they are supposed to take responsibility and pay irrigation fees to make structures sustainable. National Irrigation Act says that farmers have to be members of associations so that they pay irrigation fees for Operation and Maintenance. There are not yet clear lines of responsibility.
- PPPs offer a model for getting much more irrigation. But in the case studies, it was not always clear what is the role of the government. The government's provision of land, water, and extension advice often goes unrecognized.

Studying Farmer-led Irrigation in Africa.- Results of the SAFI project

Phil Woodhouse (see presentation here)

The presentation highlighted the recent revival of interest in irrigation following earlier disillusion due to inappropriate technical design, high costs, and low performance

2003 NEPAD, CAADP pillar 1 calls for "extension of reliable water control systems"

Sugarcane is widely regarded as a successful model of irrigation development but has a strong lobby for protected markets, standard production processes and technology and is dominated by 3 South African companies with capacity to invest in infrastructure and processing.

The Mozambique study found extensive areas irrigated by hill furrows, using technology that had been known since pre-colonial times. Tanzania has longer history of recognizing traditional systems, particularly in the Kilimanjaro area.

Farmer-led irrigation means farmers influence the purpose, location, and design of irrigation. They are not divorced from other agencies and may lobby government or NGOs for investment, or use credit from commercial traders who advance money to farmers to finance inputs, including irrigation.

An important question here is - how do development agencies and governments engage with farmers' irrigation initiatives?

SAFI data from a survey of more than 2500 irrigating and non-irrigating households shows:

- Irrigating households have higher food security
- Fewer female-headed households (FHH) among those irrigating than non-irrigating. FHH smaller and poorer, but children may benefit more from irrigation in FHH.
- Irrigation promotes land market (rental or purchase)
- Irrigators invest in inputs, production is market-oriented, and irrigated crops contributed >50% of income for the great majority (80%) of irrigators.

Benefits:

- Raises productivity, incomes and employment
- Cheaper for governmentt than large-scale irrigation
- Greater use of farmers' local knowledge

Risks:

- Increased water use (and competition)
- Accentuates existing social and economic inequality
- Increases pollution risk
- Challenges to regulatory authorities

The key challenge is how to develop supportive and accessible regulatory framework: to recognize and register but avoid onerous procedure.

Discussion of the SAFI presentation:

- Sustainability issues and management (environmental and of the systems themselves): economic viability can be achieved, but if everyone grows vegetables, prices will fall.
- If you have a lot of farmers using irrigation, you have to have coordination. The question is what kind of regulation? Do farmers feel a part of that, or hide from it?
- To be supported, you have to be visible; to be visible, you have to be registered. Do farmers have confidence that if they are asked to cut their water use, then it is fair?
- 'Farmer-led' means that farmers should be making decisions, e.g. about what crop, negotiating about what is good technology and design
- How do satellite images differentiate between rainfed or irrigated?
  P Woodhouse answered: It is based on time-series of images, generating a pattern that is used to characterize irrigation - in radar terms - for known irrigated areas.
- Statistics on irrigated areas from different sources raise the question, what do you term as "irrigated"? Flooded rice fields or with a canal/pump?
  P Woodhouse: it involves moving water, managing the water to make sure it gets to fields or drain it off, organizing the fields so they will be flooded.
- Do you consider traditional irrigation schemes [with no infrastructure] or modern?
  P Woodhouse: there are some difficulties with the way these categories are defined. The definition of "improved" tends to be "designed by engineers" (i.e., how it is built, not what it does in terms of its performance); farmers could talk to engineers and vice versa.
- On the conceptual aspect, how to operationalize "engagement"?
  P Woodhouse: we adopted this term to cover any kind of interaction, including to restrain or to help. We find that a first question is 'do government agencies recognise farmer-led irrigation at all?' If they do, then how do they engage with it?: What kind of intervention do they make? Is there some government interaction, ideas from government?

- When considering farmer-led irrigation: do you look at level of farmer involvement? What kind of activities? For an irrigation system, one needs to start by formulating and planning, then implement and manage. The NIRC have comprehensive guideline for irrigation development in the country. The recommended practice has been to involve farmers right from the beginning. What is the level of engagement that makes it farmer-led?
  P Woodhouse: We need to look at specific cases. In principle the type of engagement outlined by the guidelines could be consistent with farmer-led irrigation development, but it depends on how much scope is given for farmers to influence decisions. Farmers' initiatives come from the idea they can gain economically. Irrigation is a means to that end.
- Connecting PPP presentation with SAFI: PPP case studies are of big projects, SAFI is about small. How do you see PPP fitting in to farmer-led systems.
- Overriding questions: how should we be working together to make this work better? There are lots of actors involved. Need to overcome coordination issues, and have greater involvement of different stakeholders.
  P Woodhouse: this is a fundamental question, I think: what is the common vision for what irrigation and agriculture should look like? Is irrigation an enclave from the rest of the farming that is going on, or integral to agriculture in Tanzania? If the latter, then we can expect irrigation to take many forms as it is integrated within a variety of farming systems and along a continuum of irrigation models.
- One of the complaints about irrigation planning is that it proceeds with insufficient account of local contexts. Sophisticated planning is to be adaptive to what you find in the field and to use scientific principles to achieve the most efficient outcome in each different situation.

RECOMMENDATIONS from writing groups:

Financing

1. Government should leverage farmers' efforts to maximize areas within existing budgets.
2. Invest in supporting and building irrigation infrastructure to strengthen PPP in irrigation
3. Government should provide loan guarantee for irrigation so that financial institutions will be willing to service irrigation development
4. Establish an Irrigation Development fund as per Irrigation Act 2013, including funding for irrigation research
5. Government should ensure timely budget allocation and disbursement.
6. Government should coordinate the investment within PPP and different actors to avoid duplication of effort

PPP

1. More studies on PPP models are needed to come up with indicative models to be adaptive in Tanzania
2. Put clear line for cooperation between actors in the PPP (each actor should implement their responsibilities)
3. Increase coordination between PPP actors (e.g. financial institutions with farmers) in order for the PPP to be achieved
4. Ensure transparency between PPP actors
5. Increase alignment of objectives among PPP actors (to avoid the current mismatch of interests, e.g profit maximization vs food security/poverty reduction)
6. Reduce taxes and regulations in importation of irrigation equipment

Water Governance

1. Need to harmonise water policy with the Irrigation Act
2. Develop a holistic plan of irrigation to ensure all dimensions are addressed: monitoring and evaluation, coordination of stakeholders, institutional framework
3. Need to involve farmers, particularly the youth 'left behind', at all steps of the cycle of planning, including:
    a. Assessment of water availability for irrigation and training in water management
    b. Assessment of whether crops are marketable and profitable and opportunities for added value via processing.
    c. Addressing problems of lack of security of land tenure
    d. Assessment of infrastructure, including maintenance requirements, before investments are made.
4. A clearer policy on Local Government Authorities and decentralisation: "decisions on decentralisation or any institutional changes should be well informed by scientific reasons, not influenced by political motivation".

Participants

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