

FANRPAN

Food, Agriculture & Natural Resources Policy Analysis Network

2021

POLICY BRIEF

# BENEFITS OF TRANSFORMING SMALLHOLDER IRRIGATION SCHEMES TOWARDS ACHIEVING THE CAADP/MALABO TARGETS

## KEY MESSAGES

- Transformation of smallholder irrigation schemes requires investment in building the capacities of farmers and institutions, as well as in technologies (such as soil moisture and nutrient monitoring tools).
- Besides ensuring sustainable management of natural resources (e.g. water and soil), innovative transformation of irrigation schemes facilitates improved food and nutrition security and the climate resilience of smallholder farmers.
- Scaling out TISA interventions will contribute significantly to the achievement of the national, regional and continental goals.

# INTRODUCTION

The Comprehensive Africa Agricultural Development Programme (CAADP) Framework is a Flagship Programme of the African Union (AU) for agriculture and food and nutrition security that was adopted by the AU Assembly of Heads of State and Government in 2003 in Maputo, Mozambique. The Maputo Declaration on CAADP sets broad targets of six percent annual growth in agricultural GDP, and allocation of at least ten percent of public expenditures to the agricultural sector. In 2013, after a decade of implementation, demand for more clarity was expressed by AU Member States and stakeholders in terms of further elaboration and refinement of the CAADP targets, and assessment of technical efficacies and political feasibilities for success in agricultural transformation. Thus, in 2014 the Malabo Declaration on Accelerated Agricultural Growth and Transformation was adopted by AU Heads of State and Government. The Malabo Declaration sets the Africa 2025 Vision for Agriculture which is implemented within the Framework of CAADP as a vehicle to implement and achieve the First Ten Year Implementation Plan of Africa's Agenda 2063. The goals of CAADP/Malabo Declaration are as follows:

i. Recommitment to the Principles and Values of the CAADP Process;
ii. Commitment to Enhancing Investment Finance in Agriculture;
iii. Commitment to Ending Hunger in Africa by 2025;
iv. Commitment to Halving Poverty by the year 2025, through Inclusive Agricultural Growth and Transformation;
v. Commitment to Boosting Intra-African Trade in Agricultural Commodities and Services;
vi. Commitment to Enhancing Resilience of Livelihoods and Production Systems to Climate; Variability and other related risks; and
vii. Commitment to Mutual Accountability to Actions and Results

In Africa, agriculture is mostly rainfed and undertaken by smallholder farmers who face frequent dry spells and droughts. Irrigation presents an opportunity for sustainable intensification, increasing crop yields and improving resilience to climate shocks: especially in Southern Africa, which is experiencing increased rainfall variability. However, the efficiency, sustainability and productivity of irrigation schemes in the region, particularly those owned by the government, need to be improved (Moyo et al., 2020). Institutional and system rigidity inhibits crop diversity and flexible water delivery, which contributes significantly to a deterioration in crop water productivity.

To meet the African Union (AU) CAADP/Malabo Declaration targets, especially of *Ending Hunger by 2025 (Commitment 3) and Halving Poverty through Agriculture 2025 (Commitment 4)*, smallholder irrigation schemes need to transition productivity from lower to higher-yielding systems, which are profitable, sustainable and provide food security for growing populations.[1] In fact, expanding irrigation potential can improve agricultural productivity on existing land and extend growing seasons throughout the year, which would reduce poverty, food insecurity, and import dependency across the continent (Malabo Montpellier Panel, 2018). The transition from inefficient subsistence systems towards market-oriented production systems requires a paradigm shift amongst irrigators, irrigation management committees and policymakers (Van Rooyen, Ramshaw, Moyo, Stirzaker, & Bjornlund, 2017).

Currently, the Southern Africa region is not on-track in any of the seven Malabo commitments, with an overall average score of 4.27 out of 10 against the 6.66 benchmark for 2019, and performance on *Commitments 3* and *4* are far from desirable (African Union Commission 2020). To bring about meaningful change in the irrigation schemes, there is an urgent need for both state and non-state actors to increase the quantity and quality of investments that improve and sustain the performance of the agriculture sector for ending hunger and poverty reduction, focusing on access to agriculture inputs and technologies.



[1]Performance evaluation of the progress made by individual member states is based on balanced scorecard methods, to come up with an African Agricultural Transformation Scorecard (AATS). Balanced scorecard methods are metric benchmarking methods that bring accuracy, rightness, transparency and fairness in evaluating progress on achieving a specific goal for which smart targets and corresponding indicators are set.

# BENEFITS OF TRANSITIONING SMALLHOLDER IRRIGATION SCHEMES

The 'Transforming Small-scale Irrigation in Southern Africa' project (TISA), funded by the Australian Government through the Australian Centre for International Agricultural Research (ACIAR), focuses on increasing irrigation water productivity in Mozambique, Tanzania and Zimbabwe. Over the past seven years, TISA (implemented by a consortium of Australian and African research partners) has used two complementary entry points – (i) soil moisture and nutrient monitoring tools and (ii) Agricultural Innovation Platforms (AIPs), which strengthen social networks – to achieve a transformational change in target smallholder irrigation schemes towards more profitable and sustainable irrigation communities. Below are details of how TISA interventions have contributed and/or are contributing to the AU CAADP/Malabo Declaration targets:



## Resources management

Due to the TISA interventions (tools + AIPs), most households (50 to 93%) in the target irrigation schemes changed their agronomic practices (Pittock et al. 2020), and this contributes to the CAADP/Malabo Commitment 6, *Performance Category*[2] (PC) 6.1 on *Resilience to climate related risks*, with the following target – '*Ensure that at least 30% of agricultural land is placed under sustainable land management practice*.' Access to the soil moisture and nutrient monitoring tools has also enhanced learning and decision-making by helping farmers learn to use water more efficiently; thereby reducing irrigation frequency by 40 to 85% (saving 3 to 19 hours labour per cycle). Consequently, irrigation schemes now have more water to irrigate other portions of land, which contributes to PC 3.1 on *Access to Agriculture inputs and technologies*, with one of its targets focusing on 'increasing the size of irrigated areas (as per its value observed in the year 2000), by 100% by the year 2025.'

## Crop production

TISA interventions have also resulted in increased crop productivity for the target farming households. With increased crop productivity – contributing to PC 3.2 on Agricultural Productivity, and improved access to markets facilitated through the AIPs process, farmers' incomes have increased, which contributes directly to PC 4.1 on *Agricultural GDP and Poverty Reduction and indirectly fosters climate resilience in line with* PC 6.1. This has had several positive impacts on the livelihoods of farmers. Firstly, increased incomes have led to improved access (between 50 and 68%) to quality production inputs (e.g. seeds and fertilizers) (Pittock et al. 2020), a transition that further contributes to the PC 3.1 target of doubling (100% increase) the current levels of quality agricultural inputs for crops (seed) by the year 2025 from the year 2015. Secondly, increased incomes have reduced the level of conflicts between husbands and wives over how to prioritise the spending of scarce financial resources, and conflicts over access of water within and between irrigation schemes. Consequently, this has improved cohesion and increased trust among irrigators.

## Social changes

The AIP processes have facilitated learning by assisting stakeholders to develop problem solving and visioning skills. For example, a significant number of farmers (74 to 89%) have shown greater interest in more farming information, the relevant knowledge and information has been provided by agricultural advisory services, which contributes directly to PC 3.1 targets (Pittock et al. 2020). The TISA interventions have further encouraged the empowerment of rural women in agriculture, thereby contributing to PC 4.4 on *Women participation in Agriculture* which promotes women's access to productive assets e.g. information on markets. Consequently, a number of market-oriented production systems have emerged in the target irrigation schemes and this, although on a small scale, is contributing to PC 5.1 on *Intra-African Trade in agriculture commodities and services*, particularly regarding functioning market systems at national levels.

Thus, multiple developmental benefits can be realised through transitioning dysfunctional irrigation schemes towards complex adaptive systems. Evidence shows that this transformation can be achieved by offering appropriate technologies combined with a social change approach that involves a thorough diagnostic approach and wide stakeholder involvement. It is noteworthy that soil moisture and nutrient monitoring tools increase water productivity, reduce nutrient leaching, and increase crop yields and profitability, only if embedded in a wider learning environment where other important feedback mechanisms, such as labour constraints and market opportunities, are addressed.

[2] Each commitment of the CAADP/Malabo Declaration is made up of various performance categories. Scores under each performance category are consolidated to determine the overall score of the commitment in question.

# CONCLUSIONS

Transformation of irrigation schemes have multiple direct and indirect benefits in the continent's developmental agenda; from sustainable management of natural resources, food and nutrition security to building resilience of smallholder farmers, especially women, against shocks such as climate change and variability. Governments and developmental partners need to invest in transforming dysfunctional irrigation schemes towards achieving the CAADP/Malabo targets.

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**About FANRPAN**

The Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) is an autonomous regional stakeholder driven policy research, analysis and implementation network that was formally established by Ministers of Agriculture from Eastern and Southern Africa in 1997. FANRPAN was borne out of the need for comprehensive policies and strategies required to resuscitate agriculture. FANRPAN is mandated to work in all African countries and currently has activities in 17 countries namely Angola, Benin, Botswana, Democratic Republic of Congo, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.



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**FANRPAN would like to express their gratitude for the contributions of numerous stakeholders, without whom this project would not have been possible.**