Do AIP and soil moisture and nutrient monitoring tools improve the production and livelihood of smallholder irrigators in Mozambique?

30th November 2021, WWC-IWRA, South Korea

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Objective

• The paper reports on the results of tracking individual and combined effects of AIP and monitoring tools on the productivity and profitability of the irrigation scheme.
Where?

25 de Setembro irrigation Scheme (38 ha and 38 farmers)
Major problems before intervention:
- low use of inputs
- lack of implements and tools
- limited access to markets
- Others
  - breakdown of the irrigation pump;
  - members leaving the scheme;
  - non-payment of fees and distrust among members

Interventions at scheme:
- Monitoring tools + AIP
- Farming activities in field books;
- Data from chameleon and WFD
- Households end survey
Major outcomes of the AIP process

- Farmers with better understanding of market structures
- Functional relationship between buyers and sellers
- Problem solving through engagement of several stakeholders
Increase in average yield and income

**Irrigation events**

- Number of irrigation events:
  - Crop number: 1, 2, 3, 4, 5, 6
  - Number of irrigations: 0, 5, 10, 15

**Green maize yield**

- Crop number: 1, 2, 3, 4, 5, 6
- Green maize yield (ton ha\(^{-1}\))
  - Crop 1: 5
  - Crop 2: 10
  - Crop 3: 15
  - Crop 4: 20
  - Crop 5: 25
  - Crop 6: 30

**Income (1 USD = 60 Mt)**

- Crop number: 1, 2, 3, 4, 5, 6
- Income (Meticais ha\(^{-1}\))
  - Crop 1: 500,000
  - Crop 2: 1,000,000
  - Crop 3: 1,500,000
  - Crop 4: 2,000,000
  - Crop 5: 2,500,000
  - Crop 6: 3,000,000
Benefits to the scheme

• 89% of farmers reported to participate more in scheme maintenance;
• 64% are willing and able to pay for the water;
• 79% are able to pay for petrol for irrigation;
• 86% believe that the process of water allocation is fair in comparison to the period before the project;
• 60-80% of farmers reported to be in a better or much better position to pay for food, education and health than before the project.
Conclusions

- Tools+AIP combined were shown to improve farmer’s wellbeing. This was recognized by more than 83% of the farmers, while 67% reported increased food security.

- Field data supported the above, with green maize yields increasing from about 6 ton ha\(^{-1}\) to about 18 ton ha\(^{-1}\)

- Improvements in yield also led to an almost fivefold improvement in the green maize gross margin and opportunity cost of labour

- Improvements in financial status of farmers + commitments to embrace AIP and tools allowed them to allocate more time and resources for the scheme maintenance
Thank you