RESEARCH PROGRAM ON Water, Land and Ecosystems

CGIAR

Evidences

Study #2075

Contributing Projects:

- P477 - Integrated Watershed Management for enhanced productivity with sustained environmental services

Part I: Public communications

Type: OICR: Outcome Impact Case Report

Status: Completed

Year: 2021

Title: Development of approches for targated fertilizer application in complex and variable terrains of Ethiopia

Short outcome/impact statement:
Optimized and targeted fertilizer management along landscape positions results in an increased return to fertilizer investment via reducing the cost of inputs and increasing profitability of farmers; improving production efficiency with targeted fertilizer applications. The landscape targeted fertilizer application enables development agents and development partners to provide evidence-based recommendations to farmers; revitalize evidence-based decisions on targeted import of fertilizers or fertilizer blends and recommendations and thereby increasing system productivity through judicious use of fertilizers and other agronomic inputs.

Outcome story for communications use:
<Not Defined>

Links to any communications materials relating to this outcome:

- https://hdl.handle.net/10568/107008
- https://doi.org/10.1017/S1742170519000504
- https://core.ac.uk/download/pdf/132687258.pdf

Part II: CGIAR system level reporting

Link to Common Results Reporting Indicator of Policies : No

Stage of maturity of change reported: Stage 1

Links to the Strategic Results Framework:
Sub-IDOs:

- Improved water quality
- More efficient use of inputs

Is this OICR linked to some SRF 2022/2030 target?: Yes

SRF 2022/2030 targets:

- Increase in water and nutrient (inorganic, biological) use efficiency in agro-ecosystems, including through recycling and reuse

Description of activity / study: Complete later

Geographic scope:

- National

Country(ies):

- Ethiopia

Comments: NIL

Key Contributors:

Contributing CRPs/Platforms:

- WLE - Water, Land and Ecosystems

Contributing Flagships:

- F2: Land and Water Solutions for Sustainable Intensification (LWS)

Contributing Regional programs: <Not Defined>

Contributing external partners:

- GIZ - Deutsche Gesellschaft für Internationale Zusammenarbeit / German Society for International Cooperation

CGIAR innovation(s) or findings that have resulted in this outcome or impact:

Landscape specific fertilizer management decision making tools for local level extension agents

Innovations:

- 2337 - Landscape specific fertilizer management decision making targeting extension agents and experts (https://tinyurl.com/2f92zydk)

Elaboration of Outcome/Impact Statement:

In poorly managed landscapes, the landscape position could be a proxy indicator of soil fertility status. The key policy challenge is knowing whether the actual demand in these types of variable landscapes is hindered by low fertilizer use efficiency, market failures, or the fact that the profitability of fertilizer use is just too low to justify its use. The innovations verified that there is very limited incentive for farmers to invest in inputs in sloping and undulating fields given the very low crop response and associated low profitability. The outcome is that yield potential is lower in hillslope soils, and the foot slopes will keep producing relatively higher yields with the application of optimum fertilizer rates. Regardless of the season, nutrient recommendations should consider the landscape context. Alternative incentive strategies and investment options such as the application of manure, crop residues, green manures, and other alternative sources could help to improve soil quality and allow crops to grow better and respond more to applied nutrients. Pilot demonstrations in about seven districts have been implemented and adopted and corresponding scaling strategies design.

References cited:

•[1] 1. Amede T, Gashaw T, Legesse G, Tamene L, Mekonen K, Thorne P, and Schultz.S. (2020). Landscape positions dictating crop fertilizer responses in wheat-based farming systems of East African Highland. Cambridge University Press: Renewable Agriculture and Food Systems (https://tinyurl.com/27uxls8w)

Quantification: <Not Defined>

Gender, Youth, Capacity Development and Climate Change:
Gender relevance: 0 - Not Targeted
Youth relevance: 0 - Not Targeted
CapDev relevance: 0 - Not Targeted
Climate Change relevance: 0 - Not Targeted

Other cross-cutting dimensions: <Not Defined>

Other cross-cutting dimensions description: <Not Defined>

Outcome Impact Case Report link: Study #2075

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