

# Land restoration initiatives and their performances in Ethiopia: a systematic assessment based on meta-data analysis

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## Introduction

Natural resources and ecosystem degradation are costing Ethiopia over \$4.3 billion a year. The country is investing over 1.2 billion a year to restore degraded areas in its four major regions. However, there are no adequate database about the spatial distributions of those interventions and quantitative evidences about their performances are lacking.

## Method/Approaches

- Collate literature and consult partners to map the major land restoration projects across the country.
- Review published literature related to the performances of land restoration efforts and create database.
- Conduct meta-data analysis to assess the performances of land restoration efforts in the country.
- Assess tradeoffs and synergies associated with the role of land management practices.

## Results/Achievements

- Over 1.6 million ha of Ethiopia is covered with SLM practices.
- All interventions reduced runoff and soil erosion significantly.
- Combination of bunds with biological options and CA increased mean crop yield by 170% and 18%, respectively.
- Bunds combined with biological options and exclosures enhanced SOC by about 140% and 90%, respectively.
- Exclosures have the highest impact in reducing runoff.
- The impacts of single options such as Fanya juu, bunds, and biological options on productivity are not significant.
- CA had win-win impact on SOC and yield in sub-moist AEZ while it showed tradeoff in the sub-humid zone.
- Quantitative evidence would enhance government's negotiation for a carbon market and PES.

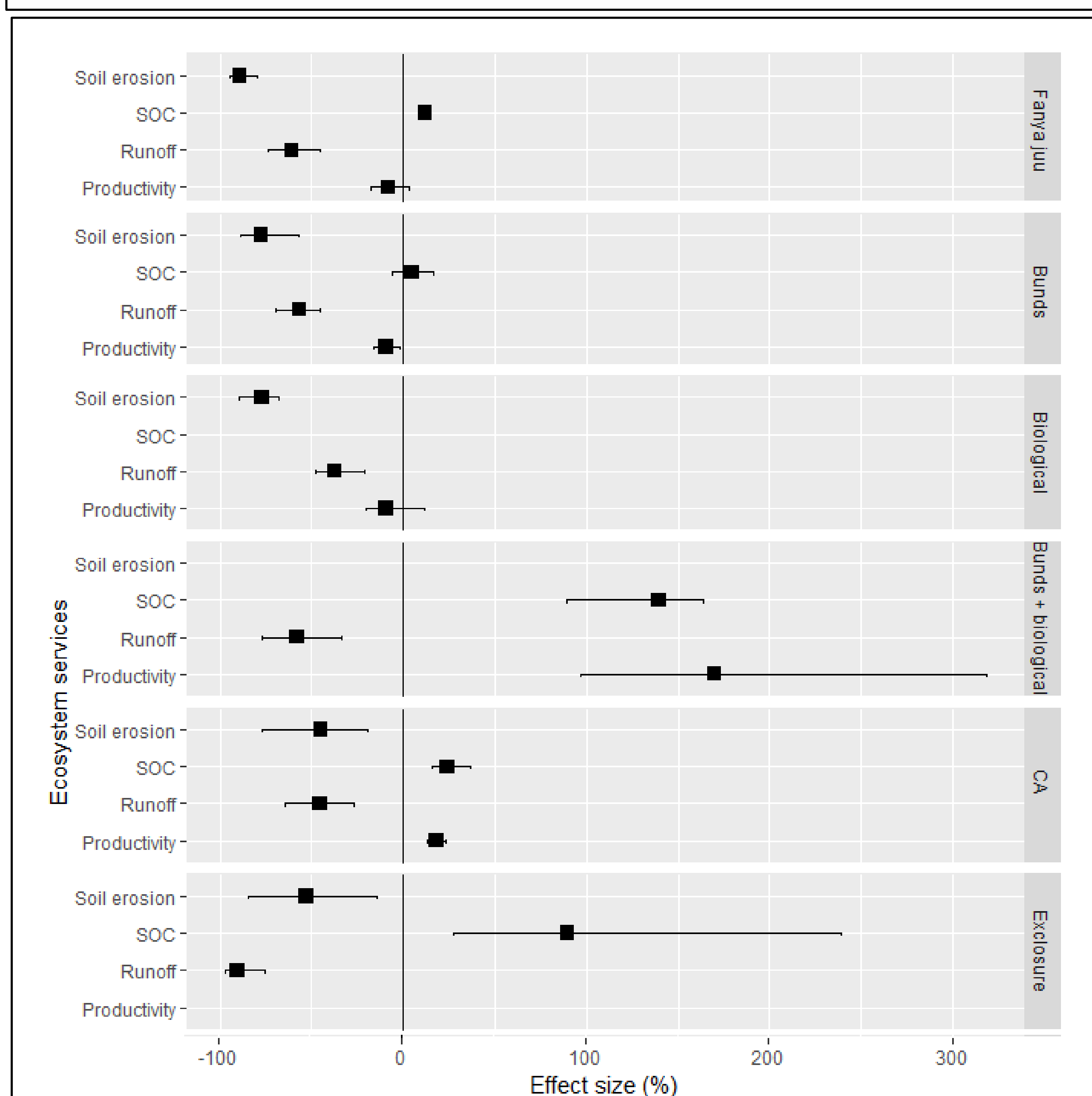


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## Key challenges and lessons

- Lack of quantitative evidences about the impacts of interventions on multiple ecosystem services.
- Absence of baseline data undermines adequate evidences generation of interventions.
- Reducing runoff and soil erosion are the most achieved goals by SLM interventions.
- Integrated SLM interventions have overall positive impact.



Impacts of different SLM options on ecosystem services based on 110-peer reviewed papers across 180 sites.

## Plan for 2019

- Continue piloting, scaling, monitoring and evidence generation through adaptive learning.
- Implement SIAF across different AEZs and farming systems.
- Conduct detailed tradeoff analysis between different SLM options.
- Quantity multiple ecosystem benefits of SLM options at national scale.