DOES CLIMATE-SMART AGRICULTURE MAKE ECONOMIC SENSE FOR FARMERS?

YES, AND THERE'S MORE EVIDENCE THAN YOU THINK

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Investors need proven business models

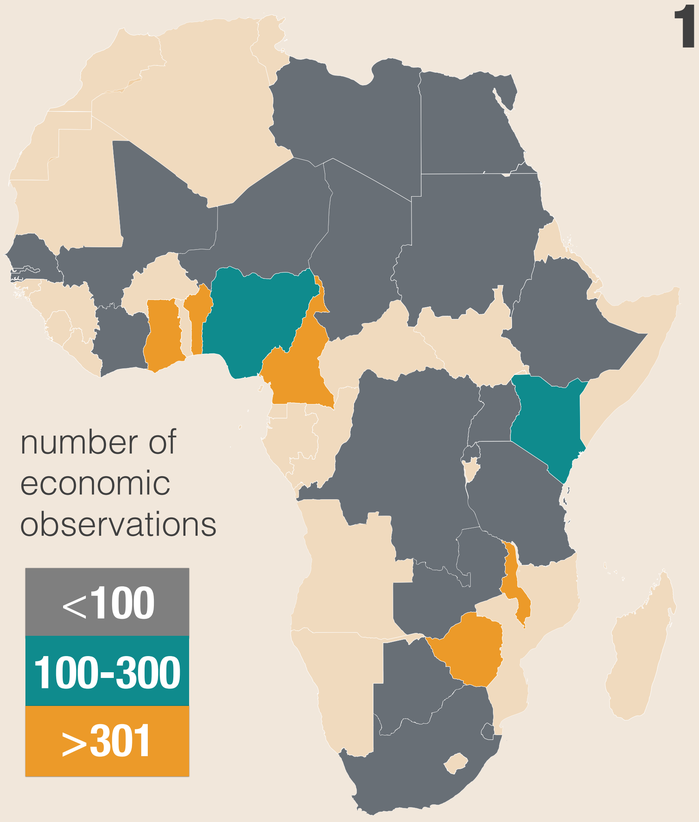
Initial and sustained use of Climate-Smart Agriculture (CSA) often hinges on the economic costs, benefits and risks of the new management practice, as well as farmer's socio-economic endowments. However, data showing the economic performance of CSA is rarely presented. Incomplete or missing information limits the interest of investors at all levels—donors, governments, private sector, and farmers.

Economic evidence for CSA exists

We mined the most comprehensive dataset to assess CSA, 'Evidence for Resilient Agriculture' (ERA), to interrogate the fundamental questions about economic performance when changing field practices from conventional to CSA. ERA is a systematic review of more than 1500 peer-reviewed articles that analyze the effects of 100 farm management practices on 50 indicators consistent with CSA goals.

What we know about the economic performance of technologies in Africa

A systematic mapping



154 peer reviewed studies with farm enterprise budgets

93 CSA technologies on agroforestry, crop, livestock, soil, nutrient, water management, energy, and post-harvest

93 agricultural products

11% animal products

33% plant products

56% plant products combinations

2470 economic observations

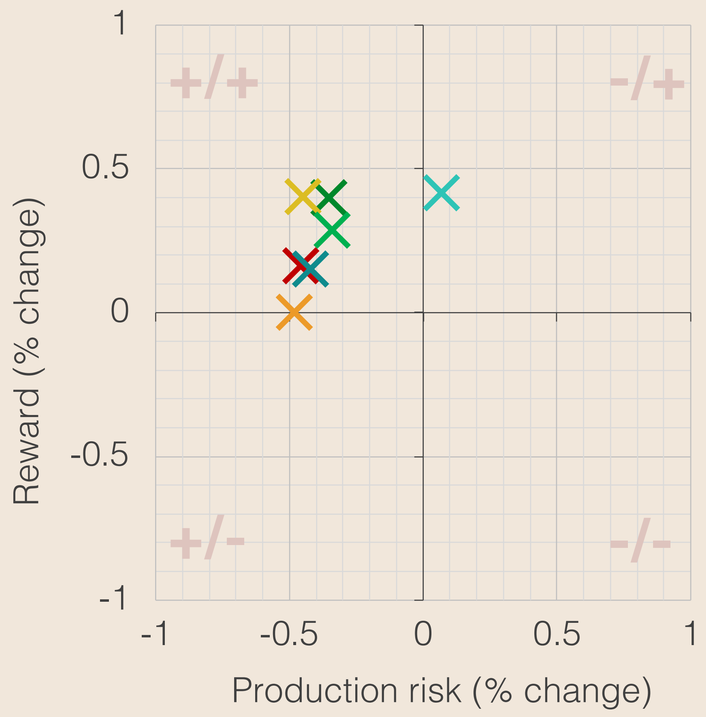
1% economic performance (benefit:cost)

49% income (gross returns)

50% costs (total, variable, fixed)

The business case for CSA in Malawi

Most CSA technologies can reduce production risks by up to 48% compared to business-as-usual (BAU) approaches, while increasing the economic benefits to farmers by up to 40%.



Production risks/Rewards
Risks are expressed as the possibility of yielding lower than the mean control value (control risk=0.5). Negative risk values indicate a lower risk to farmers compared to BAU. Rewards are expressed as a benefit-cost ratio. Positive BCR indicates economic benefits for farmers.

alleycropping
reduced tillage + mulch
reduced tillage + mulch + intercropping

intercropping
mulch + intercropping
green manure
inorganic fertilizer

Implications

➥ Economic and risk information helps to build the business case for CSA. It offers a surefire way to assess the profitability of an investment, design appropriate risk management strategies and allocate resources more effectively.

➥ Economic viability and riskiness of CSA can be described in many ways; weighing up variables of different kinds (social, economic) allows capturing a diversity of CSA outcomes which ultimately leads to more informed decisions.

➥ Science has a lot to say about the viability of CSA approaches already. The next big task is to harness the benefits of existing data for designing place-based interventions and communicate these effectively to end-users.

The business case for CSA in Malawi

PARTNERSHIPS FOR SCALING CLIMATE SMART AGRICULTURE (P4S - CSA) · CGIAR · RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security · CCAFS · World Agroforestry

Acknowledgements

We thank the CGIAR's Research Program on Climate Change, Agriculture and Food Security (CCAFS)'s Partnership's for Scaling Climate-Smart Agriculture Project (P4S), CCAFS Flagship Programmes on Climate-Smart Technologies and Practices (FP2) and Low Emissions Development (FP3), FAO, USDA-FAS and CIFOR for the support in developing ERA. We also thank USDA-FAS for supporting our work in Malawi. Recent work on business cases for CSA is funded by the European Commission. Project Title: Building Livelihoods and Resilience to Climate Change in East and West Africa: Agricultural Research for Development (AR4D) for large-scale implementation of Climate-Smart Agriculture. Grant Number: 2000002575.