



Know what drives the adoption of climate-smart agriculture across different scales

Summary

- » Recognizing successful climate-smart agricultural (CSA) practices is not enough for them to be adopted at scale.
- » At many sites, government or development-led interventions to promote CSA practices face low adoption rates or are not adopted at all.
- » Data shows that CSA adoption depends on drivers and constraints beyond the CSA practices. Blanket adoption of a specific intervention should never be assumed: the adoption of CSA practices is usually patchy because of many conditions.
- » Some drivers of adoption, such as market access or climate variability, are universally positive across countries and regions, creating a positive environment for adoption. Other drivers are important in site-specific contexts.
- » Investing in understanding and communicating drivers and the conditions under which specific interventions are likely to thrive could increase adoption rates and overall return on investments.



Outcome

Designing interventions to suit known drivers of adoption in local circumstances will increase the chances that a CSA intervention will be adopted.

What?

Taking CSA practices to scale requires an understanding of factors that drive or constrain farmers to adopt them in the first place. For decades, development implementers have seen innovative or cutting-edge solutions not being adopted by farmers. Yet the evidence suggests that farmers often take globally relevant drivers into account and these may explain why farmers may not adopt certain techniques or interventions.

The favorability of markets or climate variability is an example of a condition that significantly increases CSA adoption across continents. Other drivers become important at site-specific level e.g. social constraints that may stop women selling a certain product in the market. To efficiently target climate investments, we must understand the combination of drivers that influence farmer adoption behavior.



Why?

In Nwoya district in the Acholi sub-region of northern Uganda, farmers who have been displaced by civil war have had their agricultural activities disrupted for almost two years. The average size of arable land is larger in the north compared to elsewhere in Uganda, but the population is low with a high dependency rate, so labor is in short supply. As labor is the key constraint to boosting agricultural production in this area, farmers have formed labor exchange groups known as 'aleya' to support each other during peak crop production times when weeding or other labor-intensive practices are required. Farmers who are not members of the 'aleya' can hire the services of the group, and any money made can be lent to others at interest. In this case, the 'aleya' group addresses binding labor constraints while also sharing information, enhancing access to credit, and ultimately providing the conditions for more successful adoption of CSA practices.

How?

Significant marginal effects at 10% level

● Positive effects ● Negative effects ○ Not significant

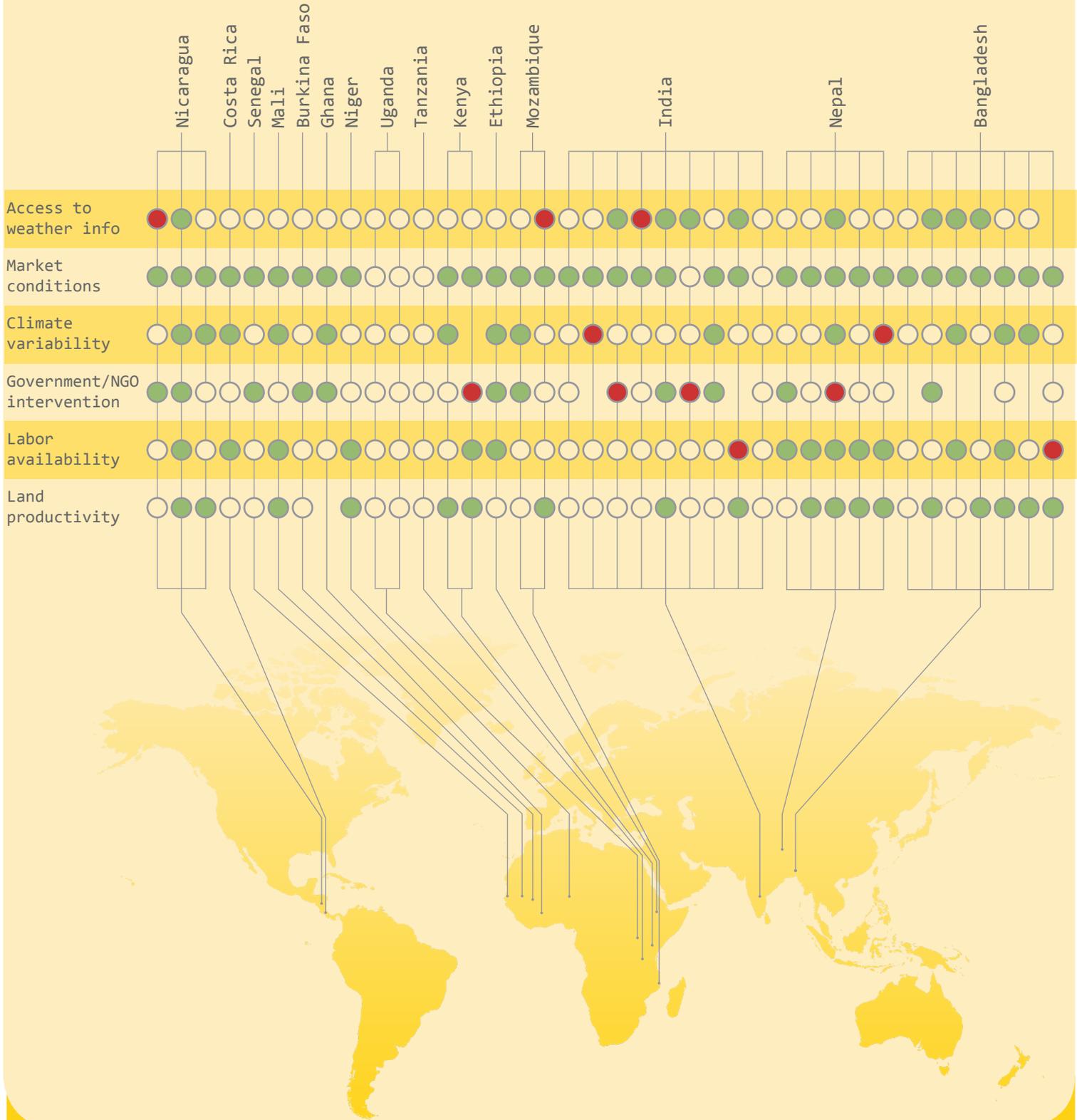


Figure 1. Map showing importance of six key factors to enable the adoption of CSA practices - weather information, government/NGO intervention, labor availability, land productivity, market and climate variation.

1 Understanding behavior and drivers of change

- If we understand behavior, we can target investments where we have empirical evidence to suggest that farmers are likely to support it. Moreover, understanding these drivers, such as access to information about weather variability, may suggest investments – such as in public provision of that information, which will lead to positive returns on investments.
- Our analysis is based on data from 5,314 households across 38 sites, 15 countries, and three continents. It highlights the importance of understanding farmers' behaviors and preferences within the context of different scales of time and space.

2 Globally relevant trends

- Farmers across Asia, Africa, and Latin America widely report that market access i.e. the ability to sell or buy a product or produce, is a key driver influencing behavior at farm level, and actions at national and international levels.
- Our evidence suggests that better weather information has a positive impact in all reviewed cases globally. For example, investing in climate information services represents only 25% of the total cost of loss in the case of a disaster (4:1 benefit cost ratio).
- Smallholder farmers usually have a greater interest in avoiding losses in bad years than in maximizing gains in good years. A farmers' appetite for innovation will depend on how well a new practice or technology performed during good, average, and bad years. Farmers who reaped higher yields are more likely to adopt new CSA practices than those who struggled to produce food.

3 Understanding limiting factors to adoption to create enabling environments for the promotion of CSA

- Farmers can also respond to push factors that may increase their adoption of specific practices. For example, dry spells during the growing season, heat waves or floods, may influence a farmer to switch crops or change cultivation practices to respond to weather extremes and avoid crop failure and loss.
- Another important driver of adoption is labor availability. Some innovations require significantly higher labor investment over shorter periods, limiting a smallholder farmer's ability to adopt them.
- See the 5Q brief (lesson 9) for a simple approach to identify and monitor drivers of adoption.

More Information

- **Report:** Economic Advantage Full Report: <https://www.ifad.org/documents/10180/7e3dff00-db38-40c6-a2a1-672ff84a0526>
- **Info Note:** Economic Advantage: <https://cgspace.cgiar.org/rest/bitstreams/84846/retrieve>
- **Peer-reviewed paper:** Chen et al. 2017. Diversification and Intensification of Agricultural Adaptation from Global to Local Scales



Supporting Materials



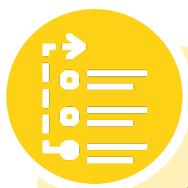
CSA Lesson Brief 4:

Support farmer-to-farmer and community-wide social learning



CSA Lesson Brief 6:

Target the pathways to scale out climate-smart agricultural technologies to farming communities



CSA Lesson Brief 7:

Prioritize among climate-smart agricultural options and benefits for greater impact



CSA Lesson Brief 9:

Monitor climate-smart agricultural interventions with a real-time participatory tool



P. Läderach, Mwongera, C., Lamanna, C., Acosta, M., Ampaire, E., Eitzinger, A., Mwungu, C., Shikuku, K., Twyman, J., Winowiecki, L. 2017.

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