

Institutional learning is critical for Conservation Agriculture innovation: Evidence from Iran, Uganda and Burkina Faso

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Introduction

Conservation agriculture (CA) has been proposed as a strategy of sustainable intensification that can mitigate the effects of climate change and reverse land degradation (CTFCSA, 2010).

It has been introduced in a variety of countries spanning different agro-ecological zones such as Iran, Uganda, and Burkina Faso.

In Iran, Government interventions have promoted conservation agriculture for sustainable management of soil and water. The intervention is aimed at reducing the cost of production and increasing productivity in dry and irrigated land. In Uganda and Burkina Faso, although in line with governmental policies, conservation agriculture has been promoted mainly by NGOs, development partners and research for development organizations.

Despite differences in agro-ecological, social and economic environment, the adoption record of conservation agriculture remains weak (Andersson and D'Souza, 2014). Much of earlier research and projects on conservation agriculture have targeted adoption barriers at a farm level (Corbeels et al., 2014). Schut et al. (2016), however, found that barriers for innovating agricultural systems are mainly economic and institutional.

We thus hypothesize that underlying institutional patterns, interests of different stakeholders and systemic constraints are critical for the innovation of conservation agriculture. We contrast preliminary findings from case studies in Iran, Uganda, and Burkina Faso to explore this hypothesis. Our methods included literature review, key informant interviews, and stakeholder mapping.

Iran

The Iranian government has devoted substantial efforts to promote CA - however, the uptake of CA in Iran has not been rapid and extensive. According to the Ministry of Agricultural Jihad (2016), CA is currently practiced on 1.5 M ha, representing 5% of arable land in Iran.



Figure 1 No-till farming in Kermanshah Province, Iran. (Photo: Latifi)

The results from the key informant interviews show that CA innovation in Iran is not sufficiently embedded in the complex social, economic and political system around agriculture. The process is dominated by government institutions.

A first step to creating an enabling environment would be to make existing linkages and interactions among stakeholders explicit to identify the relevant actors. Then, more effort should be put into designing the institutional learning processes necessary for a sustainable intensification of agriculture in Iran.

The subject of ongoing research is how best to initiate and facilitate the interaction of innovative farmers, advisors, researchers, machinery manufacturers, input suppliers, NGOs, the private sector, and government officials.

Burkina Faso

We explored CA practices in Koumbia, Western Burkina Faso. Our results show that the CA interventions had not paid sufficient attention to socio-economic dynamics.

For example, the most powerful actor in local agriculture, the state-owned cotton company, was not integrated into projects. The agronomic practices promoted by this

company are compulsory for contracted farmers and are readily applied also to food crop plots. Secondly, pastoralists from Northern regions are migrating to the region, exacerbating the existing competition of livestock for crop residues. Finally, ploughing and tractor ownership are core aspects of the farmers' identity and status. To promote zero-tillage, an intervention would have to address explicitly the need for changing self-conception.

We concluded that future interventions will need to identify all relevant stakeholders and create space for an open deliberation of challenges and solutions. Since CA may not be ideal for the local context, this process would need to allow for a long-term exploration of several alternative practices.



Figure 2 A plot for visitors and a plot for production in Koumbia. (Photos: Probst)

Uganda

The country has the targets of achieving 250,000 hectares of land under CA by 2016 and 1,000,000 farmers practicing CA by 2025. CA is being promoted through projects of stakeholders such as the UNDP, World Bank, faith groups and NGOs. Some of these projects have been going on since the year 2000.

However, the underlying institutional problem of poor coordination between several autonomous agencies jeopardizes the farmers' trust in CA interventions. Smallholders rather stick to known methods than invest into a technology that demands unaffordable inputs and entails unknown risks. Besides, there are many challenges related to CA that have not been answered: hard pans, weeds, credit access, social and cultural contexts in scaling out CA. This raises the questions whether the current rate of adoption is not mainly an effect of project incentives, and how a lasting transition could be achieved.

Future work should concentrate on ways to promote agricultural education and effective agricultural support in the policy discourse. Agencies need to be coordinated to increase efficiency in operations, provide linkages and accountability among powerhouses. Lastly, reforming land tenure would encourage farmers to invest in their land.



Figures 3 & 4 Training famers on CA in maize and field visits in Uganda (Photos: Kaweesa)

Outlook

Considering our results, we propose the following questions for future research:

- How can we initiate and facilitate a multi-stakeholder process in agricultural development with open outcomes?
- What are useful learning tools to make challenges and realities of stakeholders explicit?
- What alternative approaches can replace the short-term project interventions?

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