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"Development on the margin"

On-farm Participatory ISFM Evaluation Trials in South-Kivu (DRC): Can We Obtain High Quality Biophysical Data?

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Abstract

Knowledge-intensive technologies such as Integrated Soil Fertility Management (ISFM) often face challenges of farmers' adoption in sub-Saharan Africa. Participatory on-farm trials are an attempt to bridge this gap between scientific research and farmers' preferences. Since 2008, several thousand farmers have participated in CIALCA (Consortium for Improved Agriculture Based Livelihoods in Central Africa) on-farm evaluation trials. Simple treatments were supposed to illustrate the additive effect of ISFM technologies. One of the aims was to collect biophysical data across a wide range of agro-ecological and socio-economic conditions, which is a unique feature of this approach when comparing it to other researcher-designed and farmer-managed trials. A multi-layer facilitation system of CIALCA agronomists and farmer advisors strived to assist farmers in trial installation, management and data collection in field books.

The objectives of this study were to assess the quality of scientific data collection and the influence of facilitation hereon. Fieldwork was conducted in South Kivu (DR Congo) from June-July 2011. A combination of quantitative and qualitative methods was used: (i) field book analysis; (ii) assessment of trial setup and management; (iii) questionnaire survey; and (iv) in-depth, semi-structured interviews with key informants.

Our results show that participatory on-farm trials can successfully deliver high quality biophysical data. 96 % of all field data books were returned to CIALCA agronomists. 90–100 % of all trials were correctly installed in terms of manure and fertiliser application and crop arrangement, whereas only 50–60 % of chosen plots were homogeneous due to land scarcity. Missing data was low in 74–96 % of the field books; only for 2nd legume yield data this proportion was smaller (47–67 %) because of excessive cassava shadowing. However, methodological challenges in ex post data quality evaluation remain. Moreover, the influence of facilitation on data quality is not yet well understood, *e.g.* poor facilitation seemed to increase correct trial installation. Further analysis must look into the influence of other factors such as education, and recalculation of the facilitation index. For future improvement of the approach, this study recommends to a) simplify data collection; b) decrease number of trials; and c) develop methods for systematic data exclusion.

Keywords: DR Congo, farmer survey, integrated soil fertility management (ISFM), participatory on-farm trial

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