Stakeholder Interaction and Social Learning: The Trans-disciplinary Research Process on Push-Pull Technology Implementation in Ethiopia

Nyangau, I.M.[1, 2], Kelboro, G.[1], Hornidge, Anna-K.[1], Midega, C.A.[2] and Borgemeister, C.[1]

[1]Center for Development Research, University of Bonn, Walter-Flex-Str. 3, Bonn, Germany.

[2]International Centre of Insect Physiology and Ecology, P.O. Box 30772- 00100, Nairobi, Kenya.

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Introduction

The stemborers contribute to significant maize yield losses incurred by farmers in Ethiopia. This is also a challenge to the researchers and extension staff as stakeholders in the agricultural sector. Addressing the problem requires concerted effort and willingness to learn together where the stakeholders' needs, interests, knowledge and experiences are shared or harnessed (Bergman *et al*., 2005). This serves as a means for empowerment and increasing the legitimacy of the research engagement process (Siebenhuner, 2004) and improved communication and feedback for decision making in innovation development (Adekunle & Fatunbi, 2012). The prospects for success of such engagement can be built on the organization of the process and nature of interaction of the participating stakeholders (Renner et al., 2013). In this study, the practical on farm and joint stakeholder implementation of Push-pull technology (PPT) (Fig. 2) was used as a platform for interaction and enhancing the social learning process. "Social learning is the collective action and reflection that occurs among different individuals and groups as they work to improve the management of human and environmental interrelations" (Keen et al. 2005, p. 4). 'Stakeholder' refers to a person or group or organization(s) that have interest in or will experience the effect of the innovation or those whose activities and/or decisions can affect innovation development and/or use (Freeman, 1984).

Objective

This study aimed at establishing the nature of stakeholder interaction and the learning which took place during on farm PPT implementation to address the stemborer problem in maize crop.

Methodology

The study was implemented based on a participatory transdisciplinary action research in the study area (Fig.1) from August 2014 to April 2015. The stakeholders comprised of researchers from Ethiopian Institute of Agricultural research and the practitioners from the Ministry of Agricultture and smallholder farmers/traders. The data was collected using qualitative approaches: key informant interviews, Focus Group discussions, workshops, on-farm practical demonstrations and participant observations.

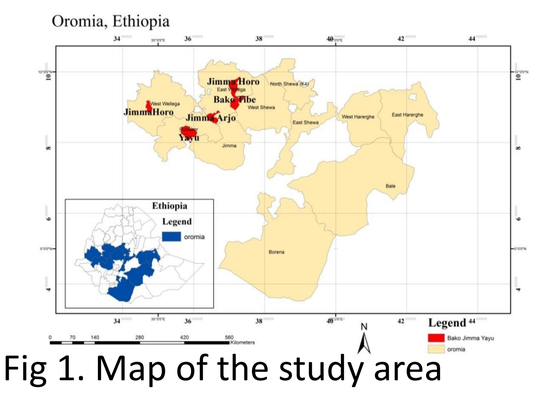

Fig 1. Map of the study area

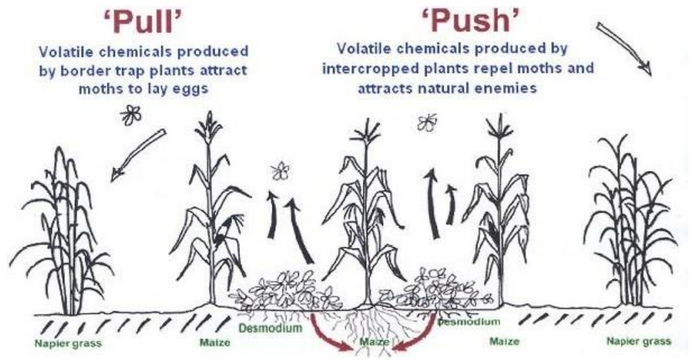

Fig 2. How Push-pull technology works

Fig 3. Stakeholder interactions and learning to address stemborer problem

Findings

- On farm joint stakeholder implementation of PPT created an opportunity to interact and appreciate/critique the contribution from each other and, thereby, a setting of social learning, to address stemborer problem unlike before (Fig. 3).
- PPT implementation in the maize cropping seasons and along the maize growth phenology, provided a platform with sufficient time for stakeholder interaction and learning about the technology and from each other.
- The stakeholders' willingness to collaborate and share their knowledge and local experiences during PPT implementation was motivated by the need to address the real time stemborer problem which previously had not received any promising solution.
- The use of farmers own plots for practical implementation created conditions which enabled critical assessment, relaxed learning and appreciation of new PPT.
- Apart from stemborer problem, the farmer stakeholders showed interest to learn about other opportunities about PPT e.g. soil erosion control, fodder production and processing Desmodium/Brachiaria seeds for sale.
- However, PPT introduced new practices which were unfamiliar and conflicting with the local farming practices such as intercropping cereals with perennial crops, controlling roaming livestock during off cropping season.

Conclusion

- In order to fully learn and appreciate PPT, the stakeholders require at least 2-3 cropping seasons of on farm implementation.
- The emerging conflicts as a result of PPT implementation should be well facilitated and used as opportunities for effective learning; otherwise, they can turn out to be areas of weakness and source of doubts about the technology.

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Contact:
Nyang'au Isaac Mbeche
Center for Development Research
Walter-Flex Str. 3, D-5113, Bonn
Germany.
imbeche@uni-bonn.de or imbeche@icipe.org

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