



Tropentag, September 17-19, 2014, Prague, Czech Republic

“Bridging the gap between increasing knowledge and decreasing resources”

## How Innovations Survive after Researchers Leave the Research Site - Collaborative Learning Processes in Nicaraguan Smallholder Farmer Families to Increase the Sustainability of Farmer-Researcher Innovations

IRUNE PEÑAGARICANO<sup>1</sup>, GIANNA LAZZARINI<sup>2</sup>, BERNHARD FREYER<sup>1</sup>, REIN VAN DER HOEK<sup>3</sup>

<sup>1</sup>*University of Natural Resources and Life Sciences (BOKU), Division of Organic Farming, Austria*

<sup>2</sup>*ETH Zurich, Environmental Systems Science, Switzerland*

<sup>3</sup>*International Center for Tropical Agriculture (CIAT), Central America, Nicaragua*

### Abstract

A well-known research phenomenon in developing countries is that innovations initiated by researchers often disappear after they leave their study site. Therefore our aim was to create methodological efforts towards a more enduring implementation of new farmers' practices. The project background included a three-year investigation in Nicaraguan smallholder farms in five villages at two different sites. In on farm and on site trials, Quesungual systems (QS) were developed and established by researchers from CIAT and the Universidad Nacional Autonoma de Nicaragua. QS is a combination of tree, cash crop and legume planting, to avoid erosion, to increase nitrogen, carbon fixation and biodiversity, as well as to raise yields of cash crops for income. To better understand under which circumstances this innovation takes place and maintains after researchers leave the research site, our entry point was to study more in detail the socio-cultural and socio-economic environment, by establishing a format for trust building and mutual learning processes. To do so we initiated what we name a collaborative learning community between stakeholders, researchers and local advisors, which is highly flexible and sensitive to react on stakeholder demands. We facilitated monthly workshops with men, women and youth, over a period of four months, by placing them in the centre of our communication process and focusing on their everyday experiences and challenges. Collaborative learning among all stakeholders involved farmer to farmer exchange and enabled them to observe and reflect on the Quesungual innovation in their fields, and helped researchers to better understand about the success and failure of QS also beyond the pure technical issues. This provided a double-loop learning process for the innovation and contributed to adaptations on individual farms. As trust was built, possibilities were opened for further discussions on specific research issues, raised by both farmers and researchers. Thus, we realised the relevance of improving communication between researchers and the main stakeholders that also strengthened the identification of constraints concerning the implementation and maintenance of innovations. Finally in one of the two research sites it was possible for the local advisor to take over the collaborative learning approach.

**Keywords:** Collaborative learning community, farm and household innovation, smallholder farms