

Securing the food system together: Innovation development with the farmer, for the farmer by the farmer

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In recent years, the limitations of top-down approaches for development-oriented research have become apparent. Therefore, scientists have started to explore alternatives such as participatory research. By involving many stakeholders throughout the different stages of innovation development, participatory research helps tackling the multi-faceted challenges the global food system is facing today.

Since almost a decade, the Research Institute of Organic Agriculture (FiBL) has been running a large program called "Farming Systems Comparison in the Tropics" (SysCom) in Bolivia, India and Kenya. Besides maintaining four Long-Term farming systems comparison Experiments (LTE), Participatory On-farm Research (POR) is a strong component of SysCom. In POR, we aim at fostering sustainable agriculture by developing locally adapted solutions for specific challenges of farmers. Researchers, extension agents, private sector and farmers work together from the stage of problem identification to the achievement of results, and finally scaling them. By taking into account local knowledge and available resources, significant achievements have been made in all of the three countries.

In India, we developed a new kind of phosphorous fertilizer for use in organic farming with which farmers substantially increased the yields of their main rotation crops across different types of soils and farms. We also standardized the preparation of homemade organic pesticides from different plants. In addition, we developed a practicable guide for pest monitoring in the small scale farmers' context. In Bolivia, we tested different cocoa varieties. Results showed that some local selections were not only among the most productive, but also presented the earliest maturation and some degree of resistance to the frosty pod rot disease (*Moniliophthora roreri*). In Kenya, we addressed the lack of organic materials for soil fertility management. By testing different local residues and manures, as well as composting techniques, we brought forward a productivity innovation for local small scale farmers. On a local level, the results were made available in the form of leaflets, brochures and video clips. These were used by farmers, extension workers and other stakeholders.

Combining applied science (LTE) with participatory action research (POR) is a powerful approach which has proven successful in SysCom. The beauty of this approach lies in the fact that it allows for multiple perceptions. However, it also comes with its own challenges which mainly lie in the fact that it requires different mindsets than traditional research approaches, as the whole process is relatively less controlled by researchers. If we teach and assist farmers to carry out research on their own farms, it will be easier for them to appreciate the effects of novel technologies which, in turn, will enhance their adoption.

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More information on SysCom: www.systems-comparison.fibl.org