



Participatory approach: from problem identification to setting strategies for increased productivity and sustainability in small scale irrigated agriculture

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Practicing various innovations pertinent to irrigated farming at local field scale is instrumental to increase productivity and yield for small holder farmers in Africa. However the translation of innovations from local scale to the scale of a jointly operated irrigation scheme is far from trivial. It requires insight on the drivers for adoption of local innovations within the wider farmer communities. Participatory methods are expected to improve not only the acceptance of locally developed innovations within the wider farmer communities, but to allow also an estimation to which extend changes will occur within the entire irrigation scheme. On such a base, more realistic scenarios of future water productivity within an irrigation scheme, which is operated by small holder farmers, can be estimated.

Initial participatory problem and innovation appraisal was conducted in Gumselassa small scale irrigation scheme, Ethiopia, from Feb 27 to March 3, 2012 as part of the EAU4FOOD project funded by EC. The objective was to identify and appraise problems which hinder sustainable water management to enhance production and productivity and to identify future research strategies. Workshops were conducted both at local (Community of Practices) and regional (Learning Practice Alliance) level. At local levels, intensive collaboration with farmers using participatory methods produced problem trees and a "Photo Safari" documented a range of problems that negatively impact on productive irrigated farming. A range of participatory methods were also used to identify local innovations. At regional level a Learning Platform was established that includes a wide range of stakeholders (technical experts from various government ministries, policy makers, farmers, extension agents, researchers). This stakeholder group did a range of exercise as well to identify major problems related to irrigated smallholder farming and already identified innovations. Both groups identified similar problems to productive smallholder irrigation: soil nutrient depletion, salinization, disease and pest resulting from inefficient irrigation practices, infrastructure problems leading to a reduction of the size of the command area and decrease in reservoir volume. The major causes have been poor irrigation infrastructure, poor on-farm soil and water management, prevalence of various crop pests and diseases, lack of inputs and reservoir siltation. On-farm participatory research focusing on soil, crop and water management issues, including technical, institutional and managerial aspects, to identify best performing innovations while taking care of the environment was recommended. Currently, a range of interlinked activities are implemented at multiple scales, combining participatory and scientific approaches towards innovation development and up-scaling of promising technologies and institutional and managerial approaches from local to regional scales.

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Key words: Irrigation scheme, productivity, innovation, participatory method, Gumselassa, Ethiopia