Using the Agro-ecological Knowledge Toolkit in Ethiopia: Africa RISING participatory research toolkit

Introduction

In 2013, the Africa RISING project in Ethiopia initiated a series of participatory assessments to diagnose and characterize the farming systems and communities where the project is working. This brief explains how the project used the AKT5 methodology and software to elicit and analyze local knowledge of farmers to help the project team understand how communities interact with resources and how these resources interact with one another (particularly the tree, crop and livestock components).

Steps in using this tool

The AKT methodology has four stages. Within these stages, various participatory exercises gather different types of knowledge:

- Scoping stage: Transect walks, key informant interviews, and focus group discussions (involving land use and livelihood mapping, participatory resource mapping and historical timelines) are carried out to characterise the system and refine the sampling strategy.
- Definition stage: Efforts are made to understand local classifications of tree species, and initial on-farm interviews, seasonal cropping calendars, livestock fodder/ feed calendars, nursery surveys were carried out to begin to understand the system better and interactions between trees, crops and livestock.
- Compilation stage: This comprises a cycle of iterative interviewing and knowledge base evaluation, finishing off with feedback sessions in each of the sites.
- Generalization stage: This entails quantitative testing of knowledge obtained across wider sample size; for instance through use of a structured questionnaire.

Findings from use of the tool

Some initial findings from the assessment are:

- Invest in research on wheat and faba bean diseases (Sinana, Basona and Endamehoni); and Enset '*aloiya*' disease (Lemo woreda).
- Manage flooding and erosion at the landscape scale, especially through trees and other interventions to enhance modifiable soil qualities.
- Research effective and easy to manage soil and water conservation interventions that address decreasing land productivity due to loss of soil fertility, soil erosion and continuous cropping.
- Promote affordable water harvesting techniques.
- Research improved varieties of crops which can withstand frost, including early maturing crops (Basona and Sinana).
- To overcome the high cost of fertilizers and improved seeds, invest in low cost, locally available soil fertility alternatives such as organic matter.
- Increase tree density (reducing wind damage) and promote a greater diversity of trees for products such as improved fruits, and serving multiple purposes (fodder, firewood, timber, fertility improvement).
- Research soil and water conservation technologies that are less labour intensive.
- Diversify and maximize feed sources that could provide fodder during critical and scarce periods (as indicated by fodder calendars).
- Look into both cultural and veterinary disease control methods; and improved livestock breeds.
- Speed up the scaling up of mixed crop-livestock-trees mixed farming intensification by identifying and strengthening the most appropriate local knowledge exchange mechanisms.

Strengths and weaknesses of the approach

- AKT complements other tools such as SLATE and PCA. It is useful during the scoping stage to quickly characterize landscapes and farms to provide background knowledge of the local system.
- The AKT methodology provides ways of triangulating information from different approaches, ending up with a lot of in-depth information.
- Unlike conventional survey tools, researchers using AKT have to probe further into topics by asking 'how', what' and 'why' questions.
- The methodology uses semi-structured interviewing developed around main topics which develop into discussion between the interviewer and the farmers (with the interviewer wanting to learn).

- The approach is structured so the interviews can take place anywhere to adapt to the local settings, including on the farms where the farmers are working (on-farm interviews are preferable so points of reference are readily available).
- The methodology involves an iterative approach which enables researchers to evaluate information they get from farmers and perform repeated interviews for more information, clarifications and feedback. This increases the credibility of knowledge from farmers
- Explicit knowledge for each farmer is recorded as statements and entered into a knowledge base using a restricted formal grammar. Each statement is attached to the person who gave the information (source) hence it is possible for other researchers using the knowledge base to make follow up visits to the same farmers.
- This methodology encourages a rigorous approach to local knowledge collection and trying to represent what farmers mean as opposed to what they say.
- The methodology is time-demanding, especially entering unitary statements to the knowledge base; and attaching sources to statements.

This brief was produced by the Africa RISING project in Ethiopia. It summarizes some experiences with the different participatory diagnostic/characterization tools used in the project.

Participatory tools and approaches described in this series include:

- Rapid telephone surveys
- Value chain mapping
- SLATE
- Rapid market assessment
- Participatory community assessment
- Participatory community analysis
- Agro-ecological knowledge toolkit

More information

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The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

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