

Learner's Guide

« Assessing Transformation in Smallholder Agricultural Systems and Natural Resources Management » - Diagnostic analysis of a rural area

Welcome to the training!

CONTEXT:

The history of agricultural development interventions shows us that action cannot be effective on the regional scale without in-depth prior knowledge of agrarian system dynamics and farm diversity. Accordingly, starting in the 1970s and 1980s, in the agricultural development field, considerable research focused on typological methods and on systemic models of how farms operate. Systems research became popular and encouraged.

Increasingly aware of the complexity of the rural world and the need to understand its diversity for development, many researchers set their sights on explaining why not all farmers in a given region react the same way to technical advice, proposed techniques, etc. Ultimately, the goal was to understand the farm dynamics and operations in each category: compare and explain the differences between the farms by enlightening the diverse stakeholders' strategies.

Still today, such capacity to assess existing agricultural situations (agrarian systems, farming systems, land use systems, livelihood systems, farmers' perceptions and strategies, local knowledge...) at the regional scale responds basically to two major groups of professional needs from the development sector:

- the capacity to assess *ex-ante* the relevance of possible research or development projects.
- the *ex-post* evaluation of actions led and policies implemented, in order to draw lessons from what was achieved –or what failed.

The know-how and methods used in diagnostic analysis is based, first, on the choice of the small region as the preferred scale on which to grasp agrarian dynamics and the attention paid to reading the landscape. This know-how relies on:

- The decision to address the complexity of agricultural issues on this scale of analysis and to develop a systemic approach necessarily leads one to study all forms of agriculture developed in the territory, rather than focussing on one specific crop or specific category of farmers.
- An approach to fieldwork that gives great importance to surveys, in particular farmers surveys, that aim to gather the qualitative information needed to understand processes and the rigorously quantified information needed to measure these processes and their outcomes.

Hence, understand “Why do farmers do what they do?” is a competence required on a transversal basis, whatever the professional domain (within the agricultural sector) of the graduates is, and wherever they will extend their professional activity (North or South). The more complex the societies are, the more diverse are the land use systems, and the more this capacity of understanding farmers decisions systems will be required.

Therefore the KOYOKA project has been launched, aiming to produce this course within a large international cooperation: first at the EU level (France and Copenhagen), then with two international networks for education and research in agriculture for Development in the third countries: RUFORUM in Africa and CATIE in Latin America.

PREREQUISITES:

- Have a research question or a development project
- Knowledge in sociology, economics or agronomy
- Basic knowledge of computer science, Internet access
- Ability to prepare and carry out a semi-directive interview: if you do not have this competence, refer to the free course on "[Qualitative survey methods applied to the management of natural resources](#)".

PEDAGOGICAL MODALITIES:

This training requires your involvement: you will often be invited to think for yourself, by performing exercises, before accessing the theoretical contributions. This theoretical knowledge is presented by experts, usually in the form of video interviews.

You will be engaged into active pedagogical approaches involving:

- Discovery approach (from photos and videos)
- Investigative approach, analysis and reflection on the content
- The inductive approach involving specific examples such as the diversity of the situations of the farmers and progressively generalized in other contexts.
- Debates and discussions on the diversity of agrarian systems (optional forums: only in a personalized elimination)
- Some lessons are drawn from case studies, the descriptions of which are provided.
- The teaching material is varied in nature: texts, video clips, extracts of maps, pictures and photographs.

TRAINING DESCRIPTION AND TARGETED SKILLS:

→ LANDSCAPE ANALYSIS [10 h]

Analyze the landscape to identify the diversity of land use and agricultural use, from a systemic perspective, taking into account its biophysical and socio-economic components.

Through two demonstrations and case studies in France and Uganda, you will be able to identify the key places to observe in order to study an agrarian landscape. You will learn to read maps (topographic or climatic), use Google Maps and organize a landscape reading. You will then have to process the collected data and see if these results confirm or not your initial assumptions. You will result in a zoning of the agricultural region observed.

Region of VILLEVEYRAC (France)

Section 1: Why start with a landscape analysis?

Section 2: What should we be looking for when we study a landscape?

Section 3: An initial analysis of the area before the first field trip

Section 4: Field work, direct observation

Section 5: Data Processing

Region of N'KOSY (Uganda)

Section 1. Google Earth

Section 2. From field observation to zoning

Section 3. Synthesis of zoning

You will be able to ...

- Read topographic and climatological maps and analyze them to formulate hypotheses on the main differentiation of the biophysical environment, for agricultural production, on a given area
- Select a transect, a route, to explore the hypothetical diversity of landscapes
- Observe each landscape, paying attention to biophysical elements, infrastructures, and agricultural practices
- Interview farmers to better understand the
- landscape
- Link field observations and cartographic data, to build hypotheses on agro-ecological zones
- Change scale: from area to watershed and plot and vice versa.

➔ AGRARIAN HISTORY [15 h]

Identify the diversity of agrarian systems and the dynamics of change through the agrarian history of the area.

Thanks to a case study in Mali - The Paradox of Sikasso - you will ask yourself the following questions: "Why is it important to take an interest in the agrarian history of a region to understand its current functioning?"; "Which method to use and which information to collect?"

From farmers' interviews, you will practice speech analysis, extraction of relevant information, cross-fertilization of information from different sources. The aim is to build a chronology of events that have marked the agricultural region you study.

Finally, you will be able to propose a first typology by crossing the historical data with the zoning that came out of the landscape analysis.

Section 1. Why do a historical analysis of agricultural change?

Section 2. Method: how to produce a historical analysis of a territory?

Section 3. How to analyze data?

Section 4. The Agrarian History of N'Kosy

You will be able to ...

- Manage a comprehensive interview with the old farmers and the various stakeholders, about the changes in: access to resources (land, water, forest, infrastructures), the main productions, techniques and farming systems, for the last 2 generations
- Define the specificities of the key informant (old people, leader, ...) and the variables specific to the themes (Natural Resources, Technical Systems, Society, ...)
- Treat the data and analyse the determining elements in the changes of the agricultural land use and in the differentiation of the agricultural systems (how to make a "timeline", to rely on the literature, ...)
- Build a (pre)typology.

➔ FARMERS' STRATEGIES [5 h]

Take into account the diversity and complexity of systems to build a/some typology/ies that is/are relevant to a research question.

Thanks to the cases treated in the first sections you will be able to build a typology of Ugandan farmers that is representative of the diversity of their strategies.

Section 1. What is a typology? Why and how to use it?

Section 2. Building a Typology of Farmers (Part 2): Collecting Information from Interviews

Section 3. Building a typology of farmers (Part 2): Grouping farms or farmers by type

You will be able to ...

- Apply an iterative process that leads to a relevant typology
- Construct a descriptive sheet of exploitation

- Identify determinants from raw data
- Find the number of types (neither too much nor too little), ignore weak signals

➔ CONTROVERSIES BETWEEN EXPERTS [5 h]

Six experts involved in the development of this course debate the questions of zoning, agrarian history and typology. Each one illustrates his/her position and puts it into perspective using experiences on the field.

SOFTWARE USED:

- Google earth : <https://www.google.co.uk/earth/index.html>
- Google Maps : <https://www.google.fr/>
- Prezi : <https://prezi.com/>
- VLC : <http://vlc-media-player.org/modules/telecharge/>
- FlashPlayer : <http://get.adobe.com/en/flashplayer/>
- Acrobat Reader : <http://www.adobe.com/fr/products/reader.html>

EVALUATION MODALITIES:

This course is designed for self-training: self-assessment exercises help you take stock of what you have learned before you go further.

This discovery does not lead to the issuance of a certificate or diploma except in the case of integration into a university or vocational training course. In this case, it is the broadcasting institution that will provide the tutoring, will define the conditions for assessment, scoring, certification or graduation.

Estimated time to complete this training: 35 h

If your disciplinary background is not on the fields, or if you want to read all the recommended bibliography, you may spend twice as long as expected.

Finally, if you are enrolled in an institution that provides coaching, this duration may be longer depending on the supervised activities that will be organized in addition.

 **You can now begin your training**

The Pedagogical design team