

Agroecological Farming Systems

InterDev Agroecological Farming Systems defines itself as a network of partners aiming to gather, format and disseminate useful and operational information in order to meet the needs for information of practitioners in natural resources management and agricultural development.

This working group's field is described by the term "Agroecological Farming Systems". This term covers the concepts of "agroecology" and "farming systems". A short definition of both concepts is useful in order to lay down the foundation for common understanding of the theme.

A few concepts

Agroecology

The term agroecology refers to ecosystems. Ecosystems are characterised by aspects such as nutrient cycling, population regulation, energy flows and a dynamic equilibrium. These characteristics apply to natural ecosystems, and, in a much altered form, also to man-made or agricultural ecosystems. The magnitude of the differences between natural and agricultural ecosystems depends mainly on the human manipulations, generally characterised by the intensity of management or intervention, and the level of disturbance vis-à-vis the (natural) equilibrium. Both the intensity of management and the level of disturbance have to be considered as a result of social and economic pressures on the human actors in the agricultural ecosystem. This increasing intensity of management is clearly visible in technical innovations in agriculture, often invented under the economic pressure to become more efficient. The innovations often require a uniformity (in crops, in soil management) by which the agro-ecosystem moves further and further away from the natural system.

This interdependence of natural and social dynamics explains why an information system concentrating on Agroecology has to be based on local information for a large part: it has to represent the local combination of social, technological and natural conditions.



Patrice Lamballe, GRET

Farming Systems

A farmer's system can be defined by:

- *Boundaries*: What belongs to the farm, what is the environment in which it operates?
- *Components*: Crops or cropping systems, livestock system, trees, buildings etc.
- *Interactions*: The relationships between the components.
- *Inputs*: Materials, information and energy originating outside the system but utilised within.
- *Internal Resources*: Materials, information and energy originating within the system.
- *Products and By-Products*.

As InterDev focuses on innovations, it is important to get a clear view of the location of the modifications in a farming system and where they fit in the whole. In order to judge the relevance of agricultural innovations, questions can be raised such as, "What are the key elements describing the bio-phy-

sical and socio-economic context?" and "What are the criteria a farmer uses in the decision to adopt a certain change?"

In farming systems research farmers are often grouped together in so-called recommendation domains, and it is assumed that these farmers have a similar demand for innovations. However, for this working group, the focus is more on the farm-family level, and the changes in agricultural (forestry, fisheries) practices that these individual households could adopt.

Innovations on a higher level of aggregation, especially the institutional innovations required for management and control of common resources and ecosystems (such as community forestry or land management) are another important related topic, which will be dealt with in a separate table in the database, called "Institutional Innovation".

The concept of Agroecological Farming Systems includes the idea that the agricultural practices are both site-specific and specific to the socio-economic position of the (type of) farmer or farm family applying them.

Priorities for Agroecological Farming Systems

In terms of priority, the emphasis will be on small scale agriculture, without at this moment in time defining the upper limit clearly.

Both agroecology and the farming systems concepts are quite holistic approaches to the functioning of farms. Agroecology may have the connotation of a well developed, completed innovation process attaining high standards of "agriculture in partnership with nature" etc. However, at this stage, the idea is

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● Database Information

The information to be entered in the information system includes methodologies and technologies, practical experiences, directories with contact persons, multimedia documents and selected bibliography.

Type of Experiences in the Development of Agroecological Farming System

- **Techniques and Principles:** Describes recommended farming practices/techniques or practices of natural resource management with observations/feed-back from farmers on how they have adapted the practice.
- **Farmers' Experiences:** Describes farmers' practices and innovations. Includes traditional/indigenous practices and those that have been developed under or adapted to local conditions
- **Institutional Innovations and Scaling-Up:** Describes methodological approaches to working with farmers or groups/communities of farmers involved in the development of agroecological farming systems. Would include PTD and Sustainable Livelihood approaches, capacity-building of CBOs, scaling-up strategies, etc. Note: The technical outputs of such approaches should be described under "Farmer Experiences" developed/adapted to local conditions.

not to fill the database with cases of such a completed innovation process only, though these may be very interesting. For now, we use the concepts of agroecology and farming systems to describe the orientation of the technologies and innovations that should be described. Any change that is oriented towards the general aims of agroecology and where the context and the system are sufficiently described, could be entered in the database.

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