
Key competencies for an agroecological farmer

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State-of-the-art

Agroecological agriculture follows a systemic approach where ecological and socio-economic aspects of a farm are considered as strongly interconnected. As a result, agroecology requires the development of and access to different types of knowledge, skills and attitudes when compared to conventional agriculture. Two main sources of literature offer us clues on what kind of knowledge, skills, attitudes and competencies (i.e. the ability to apply knowledge, skills and attitudes in the day-to-day (farming) practices) are at stake. First, there is a body of literature on an Agroecology M.Sc program at the Norwegian University of Life Sciences (1). When graduating, students are expected to have sufficient knowledge on farming and food systems, to have obtained adequate skills to handle change and complexity, to link theory to practice, to communicate and facilitate effectively and to learn autonomously (2). Also, in relation to this program, a set of key competencies has been defined, including skills in observation, in participation, in dialoguing with stakeholders and team colleagues, in visioning possible future scenarios, and in reflection on both own experiences as well as on processes. Secondly, various authors have defined competencies for students to cope with the complexity and uncertainty associated with sustainability challenges. Examples include the VESTIA+D model (3) and a consensus list on competencies for sustainable development (4). These include competencies such as responsibility, emotional intelligence, interdisciplinary cooperation and anticipatory thinking. However, while the aforementioned competencies are defined from a (university-level) student's perspective, we aim to focus rather on the agroecological farmer, and on the competencies required by the farmer to successfully realize this agroecological approach. This issue is tackled within the research project 'Agroecology as a leverage for education in sustainable agri- and horticulture.' In this project, we screen the current educational package on the incorporation of agroecological principles, practices and competencies for the case of Flanders.

Methods

Data were collected using a qualitative research approach. First, the aforementioned literature sources and more general literature on agroecology were screened for competencies, knowledge, skills and attitudes, associated with agroecology, resulting in a list of 75 items, divided over 7 themes. This list was discussed and further elaborated during two separate focus group meetings, with experts from both the field of agroecology and education. To further refine and clarify this list, we conducted 8 in-depth interviews with agroecology experts on agroecological farming/farmers and if/how they differ from conventional farming/farmers. Interviews were transcribed and were analysed, together with the focus group reports, using open coding (5). Coding was done independently by three researchers in NVivo9. The identified concepts were discussed and grouped into 6 categories, by the same researchers.

Main results

We have identified 6 key competencies for an agroecological farmer. Associated with these 6 competencies, we also propose a list of necessary knowledge, skills and attitudes (Table 1).

Table 28: Knowledge, skills, attitudes associated with the 6 key competencies

Knowledge	Skills	Attitudes
General knowledge on different components of the farming and food system, technical know-how, systems knowledge, actor knowledge, methodological knowledge	Holistic thinking, analytical thinking, responsibility, communicative, eager to learn, critical thinking, visioning, decisive, networking, creative, self-knowledge, emphatic	Environmentally aware, resilient, open, flexible, respectful, assertive, courageous

To think and act with a systems perspective. To obtain a truly sustainable system, all components of the system have to be sustainable. An agroecological farmer should be able to shift between an analytic and holistic view, and should be able to see the connections between different system components. Systems thinking also has to be time- and place-dependent, to fully grasp path dependencies and lock-ins, and to assess both short and long term consequences.

Commitment. An agroecological farmer must be committed to respecting the ecological boundaries of the system within which he operates. He should form a conscious relationship with the environment, in its broadest sense, i.e. soil, plants, animals, fellow men, and society. His main incentive is a sustainable behaviour towards this environment.

Observation and creativity. Agroecological farming is context specific, and cannot rely on standard designs or best practices. An agroecological farmer rather should observe the environment, not only on sight, but also using other senses (touch, smell, . . .). . He looks for creative solutions to challenges and problems, based on these observations, thereby strengthening his problem-solving skills.

Critical reflection. An agroecological farmer is able to reflect critically on his own actions and on the actions of his environment. He tries to move away from a priori judgments, and acts consistently in line with the vision for the farm.

Emancipation/autonomy. An agroecological farmer should not associate himself exclusively with a certain business model, prescribed techniques, or actors over which he has little or no control, but rather should strive for maximal autonomy in his decision-making process.

Social openness. An agroecological farmer communicates openly about his practices, values and vision, and he can make efficient use of the knowledge, skills and criticisms in his environment.

Conclusions

Although the identified competencies (and associated knowledge, skills and attitudes) are likely not exclusive for agroecological farmers, and may be equally expected from other “educated” people, we do propose that developing the key competencies is equally important as knowledge on agroecological principles and practices, in developing truly agroecological farmers. In the next step of our research, we will screen the educational package for (future) farmers in Flanders on the 6 key competencies in conjunction with agro-ecological principles and practices, to assess the explicit and implicit inclusion of agro-ecology.

References

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