How to create the initial contact between organic extentionists and conventional farmers and apprentices

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Abstract: *The necessity of change in agricultural production toward a sustainable and organic development is one of the main messages of the IAASTD report. Organic is no longer seen as an ancient way of agriculture. However Germany needs more organic farmers to establish a home market of organic products. In this paper the focus is on the initial contact, and we ask: How do organic extensionists reach conventional farmers, and how could they enhance their readiness to convert? This paper presents preliminary results and explores the required conditions for organic extension as one part of the ecological knowledge system (EKS) in order to develop a tool for first reaching conventional farmers and apprentices as successors. Based on interviews with several actors, (a) apprentices/masters and (b) farmers (organic pioneers, converters, and conventional farmers), types are built and an approach for the extensionists is created to reach conventional farmers and apprentices/masters, differentiated according to types. Hence our findings show differences between apprentices/masters and practitioners. Apprentices'/masters' motives for (non-)conversion are based on economic indicators. In addition, the results show an obvious lack of knowledge, which results in cliché thinking and detachment from the organic farming issue. The level of commitment to the social community influences a rational examination of organic farming. In contrast, it seems that practitioners decide on either self-oriented or pragmatic, economic oriented. Against this backdrop organic extensionists are asked to extend their repertoire of methods and adapt to the heterogeneity of the potential converters.*

Keywords: *organic extension, initial contact, predecisional phase of conversion, ecological knowledge system, Germany*

Introduction

Based on the results of the global agricultural report, published in 2008, of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) the director of the IAASTD, Robert Watson, warns, "Business as usual is not an option" (GreenFacts 2008). Another study, which was commissioned by Deutsche Bank Research, comes to a similar conclusion that a change toward ecological and sustainable farming systems needs to be tackled (Deutsche Bank Research, 2009). A serious fulfilling of this requirement has an enormous impact on the organization and institutionalization of agricultural knowledge infrastructure and more particularly on the interface between the users and the producers of knowledge (Smits, 2002).

Organic farming could contribute to sustainable land use. In Germany 5.5% of all holdings are organic, and 5.4% of the total utilized agricultural area is under organic production (Boelw, 2009). Since 1989 the expansion through government promotion programs has increased the economic attractiveness - rather than the idealism - of organic farming (Gerber *et al.*, 1998). Presently the value of the organic food market in Germany is approximately 5.8 billion Euros and is rapidly growing (Boelw, 2009), but this growth is not reflected in the number of organic farmers.

This raises the question of which factors are influencing the readiness of the conventional farmers and apprentices to convert. One factor we suggest is that farmers and apprentices are hindered by the organic extension system. Germany is comprised of sixteen states, and these are responsible for extension and are permanently influenced by the policies of the federal government and the European Union. Hence a pluralistic system exists, which includes government ministries, the Chambers of Agriculture, private individuals, organizations, and advice circles as the main providers

(Hoffmann *et al.*, 2000). The extension system of organic farming is partly linked to the conventional system; for example organic extensionists are employed by the Chamber of Agriculture. In addition to this, a separate organic extension system exists, organized by the organic farm associations, for example Bioland, Naturland, or Demeter.

Different organic extension providers imply different meanings of *organic*. For example, the EU regulations on organic farming define the minimum standard, whereas, for example, the associations Bioland, Naturland, or Demeter define higher ones. Thus the question of conversion is not only a question of organic vs. conventional but also a question of which standard one prefers.

Against this backdrop, this paper addresses the question of how to reach conventional farmers and apprentices/masters from the point of view of organic extension. A key objective is to create a better instrument for the promotion of the organic farming innovation and the dissemination of knowledge to facilitate farm managers. We highlight the interaction in change communication between extensionists and conventional farmers and apprentices /masters related to innovation theory and the model of action phases, the focus being on the predecisional phase, i.e. the one before farmers make the final decision to convert.

The paper is organized as follows: first we review the theoretical basis of our investigation followed by the description of the scope and methods of the study. Second, preliminary results are presented. Based on this, we formulate intervention mechanisms for organic extension to create initial contact. Finally we conclude with an outlook.

Extension

The term *extension* as used in this paper is not seen as a persuasive device to get farmers to do something extensionists want them to do, but rather extension represents an aggregate that comprises fairness, respect, and congruence. The role of extension is to empower the client (help for self-help) to facilitate the processes of reflective action, learning, and decision making (Rivera *et al.*, 2009; Rogers, C. *et al.*, 1991; Albrecht 1987). This is always seen as a professional communication intervention to induce change in a voluntary behavior with a presumed public or collective utility (Leeuwis, 2004). Leeuwis defines extension as *"a series of embedded communicative interventions that are meant, among others, to develop and/or induce innovations which supposedly help to resolve (usually multi-actor) problematic situations"* (Leeuwis, 2004). Especially concerning organic farming as a complex innovation, it is important that extension fulfill these demands.

Organic farming as a bottom-up innovation

Science Finds, Industry Applies, Man Conforms, the motto of the World's Expo held in Chicago from 1933 to 1934, is not in accordance with the innovation of organic farming. Organic farming is an example that *"innovation is not a research-driven process simply relying on technology transfer"* (Smits, 2002). Against the old top-down model, *organic* is a bottom-up movement developed by practitioners and not by researchers. Only at a rather late stage, since the 1970s, has science's interest grown (Vogt, 2000).

Nowadays innovations are no longer looked upon as consisting of technology only. Innovation is rather seen as a process of generating and accessing knowledge and putting it into use (Rivera *et al.*, 2009). Thus innovation processes occur over time and are influenced by many factors such as interaction with other organizations to gain, develop, and exchange various kinds of knowledge, information, and other resources (Edquist, 1997).

Rogers defines innovation as "[…] *an idea, practice, or object perceived as new by an individual* [...]. *Someone may have known about an innovation for some time but not yet developed a favorable or unfavorable attitude toward it, nor have adopted or rejected it"* (Rogers, 2003). To Smits innovation is "[…] *a successful combination of hardware, software, and orgware, viewed from a societal and/or economic point of view"* (Smits, 2002). Hardware relates to the material equipment (mostly) involved

(i.e. new technical devices and practices), and software is the knowledge involved in the innovation. Orgware refers to the organizational and institutional conditions which influence the development of an invention into an innovation and the actual functioning of an innovation. Innovation processes are neither linear nor causal but rather *"interactive processes in which there is a large extent of co-evolution of scientific, technological, and societal systems"* (Smits, 2002).

We emphasize that innovation functions as a process. The investigation described in this paper is not focused on the whole diffusion process but rather on the individual and his/her examination of the organic farming innovation *before* making the final decision of conversion. We illustrate the deliberating phase, which Rogers describes as *knowledge* and *persuasion,* respectively (Rogers, 2003). We analyze subjects' readiness to make a conversion decision on the basis of the model of action phases in order to derive recommendations for the organic extension.

The predecisional phase of the *action phase model*

The action phase model was developed by Heckhausen and Gollwitzer and defines four phases: predecisional phase (deliberating), preactional phase (planning), actional phase (acting), and postactional phase (evaluating) (Heckhausen 1987; Heckhausen *et al.*, 1987)[1]. Individuals in the predecisional phase deliberate the pros and cons of one's wishes and desires by assessing the desirability of expected outcomes and the question of feasibility. Furthermore, estimating the pleasantness or unpleasantness of potential short-term and long-term consequences is typical for this phase. However implementation-related thoughts were rare in this phase (Achtziger *et al.*, 2007; Puca *et al.*, 2001; Gollwitzer, 1990).

Predecisional individuals focus selectively on information that serves to achieve the potential goal. This includes the identification of favorable circumstances for starting the action (Puca *et al.*, 2001). Whenever people become intensely involved with deliberating their wishes, this deliberative mindset should generate: (1) a cognitive tuning toward information relevant to the issues of feasibility and desirability, (2) an orientation toward accurate and impartial processing of such information, and (3) an open-mindedness or heightened receptivity to information in general (Gollwitzer, 1990).

Organic extension as a part of the ecological knowledge system

Organic extension is a part of the ecological knowledge system (EKS), which includes all the know-how and facilities necessary for producing, processing, marketing, and consuming products within the organic-farming system. The influence of the socio-cultural context as well as the institutions supporting the promotion of these processes belong to the EKS (Gerber *et al.*, 1998; Röling *et al.*, 1998).

The current EKS is supposed to enhance innovation in organic farming. Before the farmer makes the final conversion/change decision, he/she thinks about consequences, perceptions about (un)certainty, economic goals, emotional aspirations, (dis)advantages, and attitudes. Moreover, he/she thinks about his/her own skills and competences and whether he/she could trust the validity of their knowledge (Leeuwis, 2004).

If a predecisional farmer deliberates the innovation of organic farming, he/she is confronted with complex challenges. At this stage organic extension plays an important role, first to initiate the contact and later to support farmers in obtaining knowledge, information, and skills about organic farming.

[1]At the end of the predecisional phase, the wish or desire becomes a firm goal (decision is made). The predecisional phase ends and the preactional phase of planning follows (Gollwitzer, 1990).

Scope and methods of the study

The study was conducted as empirical research subdivided into two phases (Table 1). In terms of triangulation, qualitative and quantitative methods have been used together with the aim to integrate different perspectives on the investigated phenomenon on the one hand and to analyze the structures of meanings and knowledge on the other (Kelle, 2001).

Table 1. Design of the study

	1st phase	**2nd phase**
Method	Qualitative experiments	Narrative interviews and item questionnaires
Sampling	Qualitative sampling	
Interviewee	Apprentices and masters	Practitioners: converters, conventional farmers, and organic farmers
Time period	October – December 2008	March – May 2009

According to a qualitative sampling approach, the interviewees were chosen by categories build by researchers' expert judgement. We generate a sample that addressed our specific purpose related to the research question and selected cases deemed most informative in regard to the research question (Teddlie et al. 2009).

For the qualitative experiments the selection of the target groups was based on the following reasons: 1) farming apprentices are the potential next generation of (organic) farmers, and 2) in Germany the conventional apprenticeship is almost completely separate from the organic one. These both lead to the questions of how conventional apprentices' opinions about organic farming are, and if an open-minded attitude toward organic farming could be identified in this group. Finally, are there differences between practitioners and apprentices?

The basis of selection in phase two was chosen to reflect the diversity and breadth of the sample population. The farmers were selected by the following criteria: organic pioneers, farmers in the phase of conversion (converters), conventional farmers rejecting organic practices, and conventional farmers who are local representatives of the German conventional famers association (Deutscher Bauernverband). To reflect the structural, regional differences of agriculture in Germany, the study was conducted in five regions: Bavaria (Lower Franconia), Bavaria (Allgäu), Lower Saxony, Saxony Anhalt, and North Rhine-Westphalia.

First phase: qualitative experiments with apprentices and masters

"*The qualitative experiment is an intervention in a social matter made according to scientific rules in order to study its structure. It is an explorative and heuristic form of an experiment"* (Kleining, 1986). The qualitative experiment searches for new and complex structures, i.e. dependencies and relationships. In order to discover relations, the focus is on changes in social issues.

In our study the apprentices and masters were confronted with a certain task which was beyond the scope of action. The apprentices and masters were to slip into the role of a farm manager and imagine a conversion to organic farming. This addresses the following research questions: What is the expected response of the social environment, and which attitudes toward organic farming predominate? Accordingly, the primary author gave a short introduction, and the apprentices/masters were asked to write down their thoughts within one lesson. Four sets of written, qualitative experiments were undertaken at three vocational schools in Hesse and Lower Saxony (Table 2).

Table 2. Interview partners (apprentices and masters)

Agricultural apprentice *Fachschüler* (training period 2 years); vocational school	39 (2 female)
Agricultural master *Meister* (training period 2 years + 1 year); vocational school	25 (5 female)
Sample size	64

Second phase: narrative interviews with farmers

Narrative interviews were used for handling quite different research problems in the study of social processes, e.g. the reconstruction of the experience of collective processes. During the interview the individual's subjective experiences and interpretations regarding the predefined topic are assessed (Hopf, 1995; Lamnek, 1989). The interviewee can really be guided by his/her recollections, i.e., the narrative interview can be used to reproduce the inner form of the sedimentation of experiences in which the interviewee was involved, in which he/she acted and/or suffered (Schütze, 1987).

The basic idea of this type of interview is to focus on a generative question, which has to be formulated in such a way that it can elicit an *ex tempore* narrative of the interviewee's involvement in a complex of events and experiences relevant for him/her, in contrast to eliciting descriptive or argumentational presentations referring to them. Before starting the interview, the interviewee had been informed about the general interest of the research. If the researcher wanted to have more specific information at certain points during the interview, he/she was allowed to query after the first narrative phase (Riemann, 2003). The generative question of our investigation related to how the interviewee experienced the farm takeover and which role organic farming played.

All 20 interviews were conducted by the primary author and took place in the interviewees' homes. The interviews lasted between forty and ninety minutes. For the computer-based analysis (MAXQDA), the interview content was audio-taped and transcribed. After elaborating categories and subcategories, the construction of types follows (Kuckartz, 2007; Kelle *et al.*, 1999). In addition to the narrative interviews, numeric data was collected (socio-demographic data and attitude items). A description of the farmers is shown in Table 3.

Table 3. Description of the interview partners (farmers)

Subgroup farmers (20 male, 0 female)	**Average age**	**Farm manager for … years (Average)**	**Average farm size (ha)**	**Type of production**	**Highest level of education***
5 Converters	52	39	151	Dairy farming (3) Arable farming (2)	Hauptschule (1) Realschule (1) University of applied science (2) University (1)
5 Organic pioneers	50	20	116	Dairy farming(3) Arable farming (2)	Hauptschule (2) Realschule (1) University (2)
5 Conventional farmers	45	17	489	Dairy farming (4), Pig farming (1)	Hauptschule (2) Realschule (2) University (1)
5 Conventional farmers: local representatives of the conventional farmers association	49	19	238	Dairy farming (2) Arable farming (2) Vegetable Cultivation (1)	Hauptschule (1) Realschule (1) University of applied science (2) University (1)

**Hauptschule* = High school until 9th grade and *Realschule* = High School until 10th grade.

Preliminary results

Hereafter we present preliminary results of the first and second phase. We conclude with intervention mechanisms for organic extension for the initial contact and an outlook.

Apprentice and master types

Four types could be distinguished based on the data: *Doer*, *group type*, *interested one*, and *traditionalist* (Fig. 1). The x-axis indicates the position of the apprentices and masters related to his or her readiness to convert. The y-axis divides the grade of influence of others into low and high. We have merged apprentices and masters, because explicit differences had not been found in the data.

The four types could be described as follows: A *doer* is someone with high self-confidence who is autonomous and organic-friendly with a high readiness to convert. The *interested one* is autonomous as well, but he/she rejects organic farming, because he/she has not yet developed a clearly favorable or unfavorable attitude toward organic. In the case of conversion, for both types the influence of others is low. By contrast, the dependent ones have a high level of influence from others. A *group type* is someone who has an open mind about organic farming, but he/she is highly influenced by others and anchored in the peer group. Hence his/her opinion is strongly dependent on his/her social environment, for example parents or colleagues. He/she searches for security, trust, and constancy. The opinion of the *traditionalist* is highly influenced by others' desires and expectations. He/she is a closed-minded person who rejects organic farming. This negative perception of organic farming avoids contact with organic extensionists and consequently a conversion.

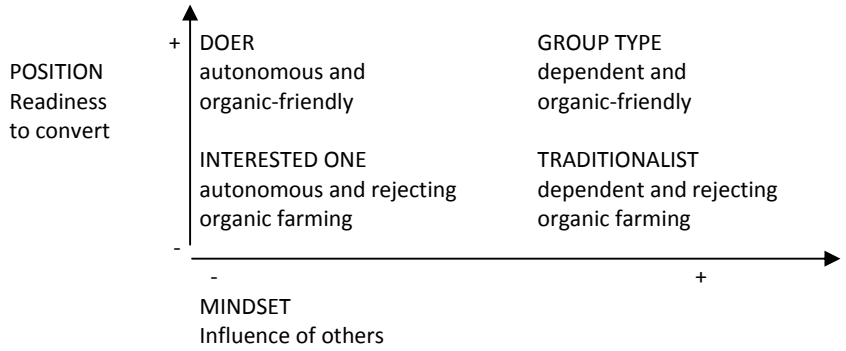

Figure 1. Types of apprentices/masters before a potential conversion decision

Farmer types

We can sum up the results of the narrative interviews in a figure (Fig. 2). Three differences to Figure 1 are:

- Figure 2 describes the phase after the conversion decision;
- The x-axis shows that farm managers' conversion decisions are based either on the self (immaterial values, personal values), or on the enterprise (material values, monetary values);
- The y-axis describes the grade of conviction related to organic farming.

In the case of practitioners, our findings revealed no strong influence of others on farm business decisions.

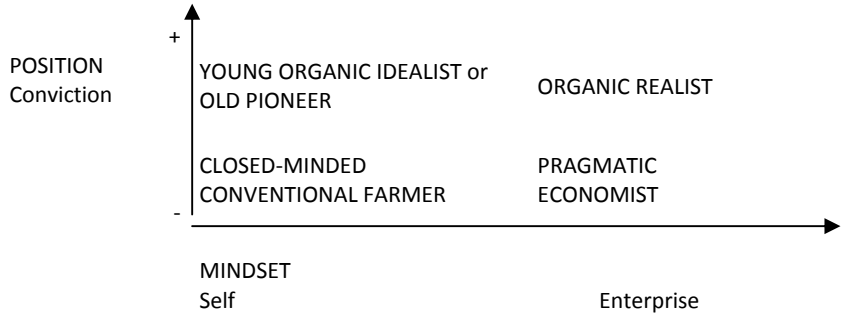

Figure 2. Farmer types after the conversion decision

A *young* o*rganic idealist* is someone who is convinced that the future of his farm operation belongs to organic land use, and he is either currently in the phase of conversion or has been an organic farmer for a short time. His conversion justification is based on personal values more than on economic facts. The following citation from an interviewee underlines this: *"And thus in the end you're actually only working for Aldi and Lidl, for the company Monsanto, um, and for the fertilizer industry; and at the end of the year all your accounts are good, you've served the bank, made a good profit, but is that actually everything in life?"* (IP15). The *old organic pioneer* is among the innovators of the organic movement and has a high conviction level. He can be quoted by: *"Then I sat in the kitchen until early morning with an old school colleague from the vocational school we both attended, and we said, 'So, starting tomorrow we'll do organic farming. The nonsense we heard this evening* (conventional farmers' trainings course) *we won't go along with.'"* (IP9). *Old organic pioneers* see their conversion decision oriented on personal values. They could not imagine doing any other type of farming.

The *pragmatic economist* is a business-oriented farmer with an economy mindset. Although his prime concern is to build a profitable enterprise, his point of view is not contrary to ecology and sustainable development. Hence a willingness to act in regards to conversion can be derived, but uncertainty remains. The difference between the *pragmatic economist* and the *organic realist* is that the *organic realist* is strongly convinced that organic farming, economically seen, is the best way for his farm to operate. *Organic realist* farmers see their conversion decision as something they created from external components: *"Two years ago in one fell swoop a resistance to a pesticide was detected,* […] *and* […] *our local pesticide advisors also had no more suitable panaceas"* (IP2). The risk of re-converting is rather low.

A c*lose-minded conventional farmer* has a traditional mindset and rejects organic farming. He questions the credibility of organic agriculture and thinks that global nutrition is not assured with it. His conventional farming operation has existed for decades and generations, and to him the agricultural future lies in conventional farming. For example, one interviewee noted: "[…] *If we hadn't treated the cherries with pesticides we wouldn't have had any cherries. One has to be clear about that*" (IP13).

Intervention mechanisms for organic extension in the field of initial contact

As shown in Figures 1 and 2, the results of the qualitative experiments and the narrative interviews resulted in type constructions which set the basis for formulating the implications for organic extensions' initial contact. The distinction between *before* (Fig. 1) and *after* (Fig. 2) conversion decisions shows very clearly the point about the potential consequences of a conversion decision. Figure 1 shows the cases without *organic extension experiences*, whereas Figure 2 gives information about the cases after a positive or negative conversion decision. From the perspective of an organic extensionist, this classification can be a basis for the construction of a suitable initial contact approach, in particular.

For example, the probability that a conventional traditionalist remains a conventional traditionalist – as an apprentice or master and as a practitioner – is very high. Consequently, farmers or apprentices/masters with a traditional mindset are not interesting to the organic extensionists. More attractive is the *interested one*, the *doer*, or the *group type.* In the following discussion, attention is paid to these types and additionally to the farmer type *pragmatic economist*. In contrast to the apprentices, the *pragmatic economist* is a farm manager with full responsibility for his operation. Extensionists have to consider this by providing information (Table 4).

Table 4. Intervention mechanism for the initial contact from the point of view of organic extension

Types	Needed offer/incentive	Initial contact through…
Interested one	He/she needs an offer with relation to his/her farm operation Economic facts and realistic scenarios affect him/her	Written, accurate, and impartial information (information brochures)
	But also: Provocation with non-economic facts and direct confrontation with the pleasant side effects of organic farming	Face-to-face communication (road shows, exhibition)
	Because he/she does not have full responsibility for the farm operation, he/she is unattached and sees potential farm innovations from a different perspective	
Doer	He/she needs either an external or internal incentive (extrinsic or intrinsic motivation)	Written information or face-to-face communication
	If organic is a realistic opportunity, he/she will identify favorable circumstances for starting the action he/she will approach the extensionist on his/her own, sooner or later	General information communicated by mass media, Constant information flow (journals, TV)
Group type	He/she needs an offer related to familiar patterns integrated into a long-term concept Stimulating interpersonal information exchange	Face-to-face communication, Homophilous communication, (road show, exhibitions)
Pragmatic economist	He/she needs an offer with relation to his/her farm operation Economic facts and realistic scenarios affect him/her	Written, accurate, and impartial information (information brochures)

It is evident from Table 4 that there is not a *single* approach to optimize initial contact. The extensionist in this phase performs the role of initiator and only later, in the case of conversion, the role of coordinator or facilitator. Extensionists have to take into account that the predecisional phase is characterized by deliberating advantages and disadvantages. Consequently they have to look at the way each type seeks information and what kind of information he/she needs in order to get in contact with the conventional farmer, either apprentice or master.

The level of loyalty and commitment to the peer group influences the kind of initial contact. A serious examination of *organic* farming is affected by the apprentices/masters' integration into their social community (parents/colleagues/friends) and has to be considered by the extensionists. In contrast, practitioners such as the pragmatic economist are more enterprise-oriented. Table 4 illustrates this circumstance via several methods of initial contact. Creating initial contact requires on the one hand a sensitive perception of each potential client and on the other hand a courageous extensionist with the ability to confront the clients with abnormal or agriculturally counterintuitive information toward an ecological and sustainable farm. On the one hand there is a need for one-way information, for example impartial facts and realistic scenarios of organic farming (flyer, brochures) and on the other hand interpersonal interaction (road shows, exhibitions).

Outlook

There are open-minded conventional farmers for whom *organic* is an available opportunity. The organic extension challenge is to provide the *right* information to the *right* farmer/apprentice/ master. It is important to realize that there are differences between providers of organic extension and their standards of organic (EU standard vs. farm association standard).

Old organic pioneers and *young organic idealists* could facilitate extensionists in organizing informal personal contact to sensitize conventional apprentices and masters as well as conventional practitioners. Informal personal contacts have played a major role in the field of extension since the beginning of the organic movement. The consequences of projecting positive attributes onto others can also meet a motivational purpose. That can enhance readiness to think about organic farming as a serious alternative land use system.

The innovation organic farming is embedded in a knowledge system of interdependent actors. Overall, the prerequisite to increase the amount of land farmed organically is to create a functioning, enabling environment for the organic farming innovation. In order to get a sustainable and successful conversion-extension from the beginning to the end, the initial contact between the organic extensionist and the client is important for the first step of relationship and confidence-building. Therefore it is even more relevant to optimize initial contact. The following citation underlines the importance of the extension to the farmers as well as the chances: *"First, I think I'll have to get some advice in order to know exactly what a conversion means. Then I'll think about the conversion phase"* (Apprentice, Northern Germany).

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