

Learning from organic farming: Overcoming barriers to adopting agroecology

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Abstract

Certified organic production has existed for decades and many of the social challenges faced by organic farmers are also faced by farmers who are considering the philosophy of agroecology. Examining how organic farmers, who are easily identified by their certification, have overcome social barriers to conversion could shed light on how farmers may be motivated to adopt agroecological practices. The aim of this study was to identify whether social factors provide barriers to conversion and, if so, to identify strategies by which these barriers might be overcome. Interviews were conducted with 39 farmers of mixed and arable farms in the German (n=24) and French (n=15) speaking parts of Switzerland, which were analysed according to their content. The results suggest that attitudes towards the concept of organic production are often formed on the basis of quickly-formed impressions rather than considered deliberation. Furthermore, farmers perceive social pressure to focus on productivity, and organic farming is often perceived by non-organic farmers to be less productive. On the other hand, non-organic and organic farmers were found to have more similarities than differences in their goals and practices, with organic farmers reporting that conversion to organic had turned out to be less difficult than foreseen. These findings lead to several proposed courses of action for organisations wishing to promote organic farming practices; with most based around encouraging dialogue between conventional and organic farmers to counteract feelings of 'us versus them'.

Keywords: conversion, organic farming, barriers, enablers, motivations

1. Introduction

Agroecological farming is a philosophy of agricultural practice (Wezel et al., 2009) rather than a particular type of agriculture, but shares many of the same principles as organic farming (Schulman, 2016). Organic farming has sustainability, and especially sustainable soil fertility, at farm level at its core, while agroecology considers the ecosystem services provided by farmland at the ecosystem level, including soil health, water quality, air quality, pest control, disease control, and biodiversity (Bellon et al. 2011). A further difference is that organic farming has a requirement for certification if the produce is to be marketed as organically produced. Discussion of whether organic agriculture be considered to be agroecology is commonly illustrated with examples of organic production that are clearly not agroecological, such as industrial scale organic operations that focus solely on maximising production rather than following an ecological ideology (Schulman, 2016). Organic farms in Switzerland however, are typically small (average 24.5 hectares) mixed farms, and farmers are required to reserve a minimum of seven percent of their land for ecological compensation. Conversion to organic production in Switzerland can usually be considered to be a fundamental agreement with the principles of agroecology, so examining how Swiss farmers can overcome the social barriers to conversion to organic could inform strategies intended to ease some of the challenges of adopting agroecological practice.

Organic farming is financially supported by the Swiss Government, which pays organic producers a further 'ecological' direct payment in addition to the general direct payment (BfS, 2016) that is paid to (practically) all farmers in Switzerland on condition that they provide proof of ecological performance. Sanders et al. (2011) conducted an economic evaluation and found that the income on organic farms was approximately 25% higher than on comparable conventional farms. If financial considerations were the deciding factor in whether to convert, we could expect financially motivated farmers to convert to organic in large numbers. This was indeed the case in Switzerland from the mid-90s during which the number of organic farms rose from 3300 (4.15% of all farms) in 1995 to 6400 (10.01% of all farms) in 2005. Although the proportion of organic farms has increased to 11.73% of all farms in Switzerland in 2015, the actual number of organic farms has decreased slightly to 6244 organic farms (BfS, 2016a). This leads to the conclusion that financial incentives alone are not sufficient to motivate farmers to convert to organic, which in turn suggests that barriers to conversion must exist. Actions to encourage organic cultivation practices on private farms require appropriately designed and effectively targeted incentives (Rodriguez et al., 2009). The means of motivation will be more successful in leading to the desired behaviour if incentives or directives are tailored to complement existing or intrinsic motivations and to removing barriers, which require gaining an understanding of what motivates or hinders conversion to organic practices on farms.

Padel et al. (2009) described the first movers – or pioneers - in adopting the innovation that is organic farming as being primarily motivated by ideology and only weakly motivated to remain integrated in existing local social structures. Indeed, conversion to organic in the early years of organic farming often meant some degree of alienation from the conventional farming community (Padel et al., 2009). In their study of motivations for conversion to organic, Häfliger and Maurer (1996) found that the significant conversion to organic farming in the mid to late '90s mostly consisted of farmers who were primarily economically motivated but who also wished to maintain their standing and acceptance in their community. A further influence on decisions are the attitudes held within the farmers' own family, which can be positive or negative towards the concept of organic cultivation (Goy, 2007). Ferjani, et al. (2010) on the other hand reported that the attitudes held by neighbours and family were only a minor influence on the decisions made by farmers, with the exception of the group that they called 'optimizers', for whom social acceptance was important. An extension of such consideration of what other farmers in the community may think is the reluctance to enter situations in which conflict with neighbours may occur. Several well publicised conflicts between organic farmers and their neighbours create an understandable degree of apprehension for those considering conversion (Madelrieux & Alavoine-Mornas, 2012).

Further barriers to conversion to organic farming that can be identified in the literature relate to technical difficulties in cultivation and the knowledge and learning required. Farmers considering conversion were also concerned with the extra work burden that was perceived to be associated with organic farming (Ferjani, et al., 2010; Goy, 2008). Furthermore, the difficulty of cultivation of lucrative crops, such as sugarbeet, is a barrier for many farmers considering conversion (Schramek & Schnaut, 2004). Studies by Khaledi et al. (2010), and Padel et al. (2009) however, found that conversion barriers cannot be removed by simply finding solutions to economic and technical problems. Khaledi et al. (2010) reported that the risk of conversion was considered by many farmers to be too high, although Schneider (2001) found that the risks were generally overestimated.

A reasonable conclusion is that the relationship between farmers' motivations and behaviour is complex and our understanding is inadequate. Quinn and Burbach (2008) suggest that changes to more sustainable behaviour are the result of a complex relationship between attitudes, reasoning, intrinsic process motivation, goal internalization and internal self-concept. Burton and Paragahawewa (2011) argue that a non-economic form of capital is the status and prestige within farming communities generated by particular behaviours, which can be an effective motivation in the decision of whether or not to convert to organic cultivation. Similarly, Khaledi et al. (2010), and Padel et al. (2009) identified that social norms, the social situation on the farm, personal values, and attitudes held by the farming family are likely to be dominant decision criteria. The aim of this study is to identify barriers for Swiss farmers to convert to organic farming and to learn how these barriers have been overcome by farming families that have successfully converted. These lessons could ease the process of farmers converting in the future, thus making the transition easier. Furthermore, the similarities with the social challenges facing farmers who operate under the principles of agroecology suggest that the lessons might be also transferable to that context.

2. Material and Methods

A total of 24 semi-structured interviews with farmers from the German speaking part of Switzerland, and 15 interviews with farmers from the French speaking part of Switzerland were conducted. Half of the interview partners were organic farmers; meaning they had converted to organic farming and been certified as organic producers by BioSuisse, which is the primary organic certifying body in Switzerland. The remaining farmers were certified by an organisation known as IP Suisse, which is an association (with over 20 000 members, which is 38% of all farms) of farmers who produce using environmentally and animal friendly production methods; including being GM free and with minimal use of synthetic pesticides. IP farmers were selected for inclusion in this study because they are readily identified and because their choosing IP membership indicated a degree of openness to ecological concepts. Individual farms were selected to represent a wide range of farm sizes (from 6.5 to 98 hectares); a wide range of experience with the respective farming system (from 0 to 38 years); and both the French and German language regions. A further selection criterion was that all farms should produce some crops. The interviews were transcribed and their content was coded.

2.1 Analysis

An encompassing theory that offers some explanation of how the relationship between attitudes, social norms and perceived limitations can be reconciled is needed. Examination of how individuals, in this case farmers, can be motivated to engage in a behaviour that has been externally evaluated in a political process as being desirable, is essentially an examination of why they choose to do so or not to do so. There is an underlying rational process in human decision-making, and decisions to adopt a particular behaviour are made to maximise the individual's total utility (Friedman, 1990). The theory of planned behaviour explains behavioural intention as a combination of the attitudes and subjective norms held by an individual that are constrained by the individual's confidence in their ability to implement the behaviour and produce the desired outcome (Ajzen, 1991). The theory is among the most powerful and predictive models for explaining human behaviour (Koger & Du Nann Winter, 2010). The constructs identified in the interviews were classified according to Ajzen's (1991) theory of planned behaviour, which allowed concrete recommendations for ways to reduce barriers to

conversion to be proposed. For brevity, we refer to the participating farmers simply as 'farmers' throughout the presentation of results and discussion in this paper. Direct (translated) citations from farmers are shown in italics followed by an identification of the farm type; either Bio or IP.

3. Results

3.1 Subjective norms

A key social factor that acts as a barrier to conversion is a perceived negative attitude towards organic agriculture by other members of the family. Often farmers feared the reactions of parents; especially that of the father from whom they had inherited the farm, and who usually continues to live on the farm. If the young farmer wants to realize his or her own ideas, there is a high potential for tensions to be created with their predecessor. However, many farmers found that the predecessors learned to accept new management forms after some time; and after they had seen that the new production method was successful. A positive attitude and generous support from the life partner, who was in most cases the female partner of a male farmer, were highlighted as particularly important for change. In several cases, the life partner provided the drive for change as they were concerned about the use of pesticides in the vicinity of their own children. In the case of the French speaking farmers, their partners were usually employed off-farm, with limited presence in the general decision making, and so had less influence on the farming decisions

In addition to the acceptance by family, acceptance and recognition by other farmers is an important motivation. Several farmers pointed out that there was a need for mutual respect among farmers, regardless of the form of production. Organic farmers expect respect and tolerance from non-organic colleagues; as well as understanding if things go wrong "*I had a good relationship with my neighbours and colleagues, and they knew me when I was an IP farmer, and I'm still valued now that I'm an organic farmer. That's a big honour*" (Bio). Many of the interviewed farmers continued with collaborative arrangements with neighbouring non-organic farmers after conversion, which they interpreted as a sign of acceptance: "*We still share machinery and still have a good relationship. There's mutual respect*" (Bio). Neighbouring farmers show a certain tolerance to errors of farmers who have recently converted. Mistakes and failures are considered rather as an opportunity for learning, and every farmer; including IP farmers, had a story of an expensive mistake from their early farming days. However technical problems, such as the use of copper based fungicides in organic agriculture, do need to be solved and ongoing efforts to solve technical problems are viewed as being central. On the other hand, successes are also noted and can contribute to more positive attitudes towards organic cultivation: "*I've been complimented by other farmers who've said "Hey, you can do so much, and make good products, also without chemicals"*" (Bio).

However, mutual respect was not always present. In some cases, the decision not to apply synthetic-chemical sprays was the trigger for conflicts with neighbours: "*then the organic farmer came and planted potatoes, and they had leaf blight and did nothing. That was terrible...I had to wash ours with fungicide so that I could get by*" (IP). On the other hand, IP farmers are not always respected by the organic farmers: "*I've never personally spoken badly of non-organic farmers, or brought them down, but I know others do*" (Bio). Soil protection was nominated by organic farmers as a reason for conversion, and non-organic farmers are sometimes seen to have a cavalier attitude to synthetic inputs: "*They spread the slug pellets without actually checking whether they have slugs*" (Bio). This position of disrespect is counterproductive, since it can lead to alienation from both sides. A non-organic farmer who does not feel respected by the organic farmers may turn away from them and be even more difficult to reach.

The interviewed organic farmers reported that they felt closely observed by neighbouring farmers immediately following conversion, but that the level of observation returned to the "normal" level after a certain time. Organic farmers feel that they are judged by the same criteria as other farmers: quality and yield. Accordingly, farmers who allow weeds to get out of hand or exhibit other signs of poor management, are not very highly regarded; regardless of the form of production they use. However,

organic farmers are often seen as representatives of their form of production, and more so than is the case with IP farmers. Some organic growers have tried especially hard to keep fields free of weeds to prove to their neighbours that one can have orderly fields in organic farming. Thus they hoped to obtain recognition in the social environment. Despite the clearly expressed wish for the acceptance by their peers, farmers still deny that it is important to them: *"if you always listen to what the others want, you might not be on the right path"* (IP).

3.2 Attitudes

Many farmers reported that they first needed to make a change to organic in their own minds. To accompany the process of "mental conversion", it is important that conversion to organic agriculture means that the farmer remains within their individual value system. On a general level, this is not a particularly difficult step to make because a large overlap was found between the identities of organic and the IP farmers. They all see themselves as sustainable producers, they all care about soil conservation, and they all see themselves as independent decision makers on their farms.

Both organic and IP farmers see themselves as producers, but the IP farmers sometimes see organic farmers as living from direct payments rather than production. Non-organic farming is considered to be the 'normal' way of production: *"the attitudes towards the productivity they want, and it's just still based around having clean fields, but it's all about production and yield, yield, yield"* (Bio). An organic farmer reiterated, however, that organic farming is also production oriented and that *"direct payments make up a much smaller part than the product sales, so organic farming is also productive agriculture"* (Bio). The IP farmers perceive two types of organic farmers: productive farmers and those who milk the direct payment system: *"If I can't produce, and I would say this very provocatively, I might as well go organic"*(IP). Dishonesty and living from the system rather than producing is not seen solely as the domain of organic farmers, but there are perceived to be fewer dishonest farmers using non organic production systems: *"There are some"*(IP). The IP farmers have little time for those they consider to be dishonest by living from subsidies and having little interest in production, but are also critical of the system in which this is tolerated: *"One can do that in organic"* (IP).

The protection of resources, and especially the soil, was reported by all of the farmers as being extremely important. However, reduced use of synthetic additives is also commonly seen as a means of soil protection by the IP farmers: *"it's important to use fewer chemicals"* (IP). The wish to remain productive however remains, and the goal to produce sustainably appears to be universal: *"We want to keep the arable land and produce food cleverly"* (IP). Contrary to the opinions of some organic farmers, IP farmers also doubt the long term wisdom of synthetic inputs: *"There's the question of whether the chemicals will really degrade as they say, and also what effects they have on the soil life"* (IP). Both groups of farmers have a preference for methods that are environmentally friendly and are better for the soil.

One obstacle for some farmers was a perceived loss of independence, which they expected in the course of conversion to organic farming. They fear being limited by a wide range of complex rules and regulations. However, organic farmers evaluated their self-determination to be higher than before the changeover, and see this as an important positive factor: *"Before we became organic, a company used to come and do all our spraying. We didn't have much to do with it. They just sent us a bill and we paid it"* (Bio). After conversion, farmers reported making the decisions themselves and feel that this stronger power of decision-making gives them a stronger connection to the land. Organic production was seen to give an overall gain of self-determination, and especially independence from major players in the agricultural market, such as suppliers or distributors of synthetic inputs. All of the farmers value their independence and freedom to make decisions, and are unhappy when this freedom is restricted, but every farmer has some restrictions on what they can do if they are to receive direct payments of subsidies.

4. Conclusions

A barrier to conversion that was related to technical issues was the lack of awareness among IP farmers of organic solutions to problems. Non organic farmers are free to attend 'organic' events, and information is available to them, but this knowledge transfer could be enhanced if solutions that are found in the organic world were actively and deliberately publicised to conventional farmers. Farmers don't use expensive synthetic inputs because they feel the need to spend money, but rather because they don't see viable alternatives. If they are made aware of such alternatives, and implement these alternatives, the step to conversion becomes smaller and more likely. The process of publicising solutions will encourage contact between organic and non-organic farmers, which may enable farmers to feel part of the same network and reduce an us-versus-them dynamic. A further result of the publicising of solutions is that organic farming may be perceived to be production oriented and to be facing the same problems as conventional farming. The finding that there is no recipe as such and that each farmer must find their own solutions that work for their own farm means that the conversion to organic is perceived to be uncertain. This uncertainty persists despite the extensive and highly regarded advice that is readily available to farmers. Better networking opportunities for organic farmers, and also between organic and non-organic farmers would enable exchanges and reduce the uncertainty of conversion. This finding suggests that social measures can contribute to encouraging conversion.

In areas in which the concentration of organic farmers is smaller, such as the French speaking part of Switzerland, organic farmers look for alternative means for exchange with their peers, such as online forums and websites. Other means of encouraging exchange among colleagues could be the hosting of contact events: with co-hosting between organic and non-organic farming associations. Such events could have the effect of strengthening the reputation of organic farmers as producers. Organic farmers expect to be respected by non-organic farmers and vice versa, and such respect can be encouraged by creating spaces for dialogue between the farmer groups. The finding that all farmers have more in common than they have differences suggests that farmers attending such events will be able to easily find common ground. Such events could consist of organised demonstrations of successful organic farming innovations. Demonstrating a production orientation, elaborating on experiences, and engaging in dialogue with non-organic farmers could contribute to a more open attitude by non-organic farmers.

A further measure that could contribute to changing attitudes could be the introduction of courses in the organic cultivation of gardens with a concentration on farm gardens or husbandry of small animals. In the Swiss farming system, cultivation of the house garden and care of the small animals usually lies with women, who it is known can have a strong influence on the decision to convert. Participation in such courses would have the dual role of demonstration of the effectiveness of organic cultivation techniques and recruiting the participant as a proponent of organic. A further means of demonstrating the effectiveness of organic cultivation techniques but on a larger scale could be the initiation of farm visits. In addition to their demonstration role, such visits would also encourage dialogue between organic and non-organic farmers, and thereby contribute to farmers finding common ground. Non-organic farmers would learn that most organic farmers tended to overestimate the difficulty of conversion and of running a farm organically.

The result of the project is a deeper understanding of the social and personal factors that influence the conversion to organic farming, as well as how barriers have been overcome by farming families. A variety of social and personal factors were identified and most, if not all, can be considered to be human characteristics; desire for acceptance by peers and family, desire to succeed, and desire for self-determination. These results suggest the value of implementing a range of concrete actions that can ease the decision process and enable conversion within the farmers' minds. The common theme throughout the recommendations is to facilitate communication between organic and non-organic farmers so that their similarities, rather than their differences, are in the foreground. For example, informal events and platforms for the exchange of information between organic farmers and interested non-organic farmers could motivate curious farmers to take the second step of seeking official advice.

The boundary between agroecological and conventional production systems is described in the introduction to this workshop as one of tension at an ideological level and some synergy at the scientific and applied level. This study found similar tensions at the boundaries (sometimes literally) between organic and IP production in Switzerland and a range of synergies at the applied level. We make no claim that organic farming is synonymous with agroecological farming, but we do suggest that measures for bridging the gap between organic and non-organic farmers in Switzerland may also ease the transition to agroecological farming practices for conventional farmers elsewhere.

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