

To change or not to change? Farmers' motives to convert to integrated or organic farming (or not)

C.C. de Lauwere and H. Drost
Agrotechnology & Food Innovations
P.O. Box 17, NL-6700 AA Wageningen, The Netherlands
Wageningen University and Research Centre
Wageningen, The Netherlands

A.J. de Buck,
Applied Plant Research
P.O. Box 8, NL-2670 AA Naaldwijk, The Netherlands
Wageningen University and Research Centre
Wageningen, The Netherlands

A.B. Smit, L.W. Balk-Theuws, J.S. Buurma and H. Prins.
LEI, Agricultural Economics Research Institute
P.O. Box 29703, NL-2502 LS Den Haag, The Netherlands
Wageningen University and Research Centre
Wageningen, The Netherlands

Keywords: farmer's motives, integrated and organic farming, risk perception and uncertainty, personal characteristics, involving relevant actors

Abstract

The motives of farmers to convert to integrated or organic farming (or not) were studied as well as factors affecting these motives. Possible solutions also are mentioned. The results are based on twenty in-depth interviews with experts in the field of integrated or organic farming. Different kind of motives to convert to integrated or organic farming can be distinguished: idealistic motives, related to the intrinsic 'drive' of farmers, economic motives, related to the financial aspects of converting, technical motives, related to matters such as the control of weed and the availability of workers and institutional motives, related to the institutions surrounding farmers (traders of chemical crop protection products, policymakers, farmers living in the area). According to the respondents, idealistic motives are the most important reason to convert and institutional motives the most important reason for not converting. This illustrates that it is important to involve all relevant actors when considering a conversion to integrated or organic farming. Different factors affect the decision to convert to integrated or organic farming. According to the respondents, the personal characteristics of farmers, such as perseverance and dealing with uncertainties, are the most important factor. Other 'internal' factors, related to the farmer are his financial scope and farm conditions. 'External' factors mentioned by the respondents are related to the economic, technical and institutional motives for converting or not. Motives for not converting to more sustainable agriculture are often related to a perceived risk or uncertainty. Involving relevant actors in the process of conversion, financial incentives,

providing knowledge, consistent policy or offering farmers some room for experiments might help to reduce the perceived uncertainty. The most important conclusion is that it does not only concern the farmers who have to convert. The actors surrounding them have to join them.

INTRODUCTION

Dutch agriculture is changing rapidly. The most important changes concern the transition towards more sustainable agriculture. At first the emphasis was on expansion, scale enlargement, intensification, further specialization, greater involvement with agribusiness and technological transformation (Van der Ploeg, 1996). However, public concern about agriculture is increasing in the Netherlands (Ketelaar-de Lauwere et al., 2000). In horticulture and arable farming these public concerns especially are related to the use of chemical plant protection products and artificial fertilizer. Integrated or organic farming seem to be the best answer to sustainability in plant production (Trip and Uiniken, 1994). Integrated farming means that the use of chemical inputs (for crop protection and fertilization) has been decreased considerably by chemical refinement or system directed prevention (Rathenau Institute, 1996). Chemical refinement means that chemicals are used as 'careful' as possible by the right choice of chemicals, exact dosage and an as low as possible amount of treatments. System directed prevention means that more resistant varieties of crops are chosen in order to reduce the amount of chemicals needed and to keep the intensity or risk of infection as low as possible. Organic farming goes further than integrated farming: the use of chemical plant protection products and artificial fertilizer is forbidden. Organic products have the EKO quality mark, which is the same in all countries of the European Union. An important difference between integrated and organic farming is that integrated farming has no 'rules' and no quality mark.

The Dutch Ministry of Agriculture, Nature and Food Quality strives for an almost complete conversion to integrated farming. Another 'wish' of the Ministry is that ten percent of the Dutch area of land used for agriculture will be used for organic farming in 2010. Farmers play an important role in this process. They must be willing and able to convert to integrated or organic farming (De Lauwere, 2004). The number of farmers actually converting (or even considering it) however stays behind the expectations of the government. Therefore, the motives of farmers to convert to integrated or organic farming (or not) were studied as well as factors affecting these motives. Possible solutions also are mentioned.

METHODS

The results are based on twenty open, in-depth interviews with experts in the field of integrated or organic farming. Two integrated and three organic farmers were interviewed, nine scientists and six persons who were closely associated with integrated or organic farming by means of advice and information, coordination of projects in the field of integrated or organic farming and protection of interests of integrated and/ or organic farmers. Questions were asked about:

- The background of the respondents;
- Differences between conversion to integrated or to organic farming;

- Differences between farmers: why do some farmers convert to integrated farming and others do not?;
- Which factors affect a farmer's decision to convert;
- Motives to convert or not;
- The way the conversion process can be stimulated.

RESULTS

Different kinds of motives

It appeared that four different kinds of motives to convert to integrated or organic farming (or not) could be distinguished. These concerned idealistic motives, economic motives, technical motives and institutional motives. Figure 1 shows how the different kinds of motives to convert to integrated or organic farming or not are divided.

1. Motives to convert to integrated or organic farming. Idealistic motives are the most important reason to convert. These motives are related to the intrinsic 'drive' of the farmer. They concern 61.1% (22 out of 36) of the motives mentioned by the respondents. The idealistic motives for converting mentioned are being a farmer again and experiencing more challenge (12 times), increasing aversion to the use of chemical crop protection products (7 times, of which 3 times were caused by an incident such as a sick child or pet after being in contact with chemical crop protection products), sustainable farming as a ideology (2 times) and having more contact with consumers (1 time).

Other important reasons to convert concern technical motives. They concern 25.0% (9 out of 36) of the motives mentioned by the respondents. More cooperation with nature is mentioned the most often as technical motive to convert to integrated or organic farming (5 times). Other technical motives mentioned are: 'cleaner' crops (less or no use of chemical crop protection products) (2 times), a better or healthier soil (more soil fauna) (1 time) and less or no use of chemical crop protection products or artificial fertilizer (1 time).

Institutional and economic motives to convert to integrated or organic farming are mentioned less often by the respondents: respectively 8.3% (3 out of 36) and 5,6% (2 out of 36) of all mentioned motives for converting. The institutional motives concern the positive image of (especially) organic farming and social acceptance (3 times). The economic motives concern a higher price for organic products (1 time) and the expensive measures concerning the environment or crop protection methods in conventional farming (1 time).

2. Motives for not converting to integrated or organic farming. Figure 1 also shows how the motives for not converting are divided. It is obvious that institutional motives are the most important reason for not converting. These kind of motives are related to the institutions surrounding farmers. They concern 45.5% (30 out of 66) of all the motives mentioned by the respondents. Negative social pressure or a sceptical attitude of other farmers living in the area and of other actors like agricultural teachers and spokespersons and traders of crop protection products are mentioned most often (8 times both). Tight legislation and inconsistent agricultural policy make the second important institutional motive for not converting (mentioned 7 times). Other institutional motives for not converting are power relations in the production chain (mentioned 2 times), trendiness of

trade and social developments (especially in inedible crops: which kind of flowers will the consumer like in the years to come?; mentioned 2 times), the need to leave old, familiar social networks and find new ones (mentioned 2 times) and not enough knowledge available about integrated or organic farming (mentioned 1 time).

Technical motives for not converting concern 28.8% (19 out of 66) of the motives mentioned by the respondents. Lower yields are mentioned most often (6 times), followed by concerns about weed control (5 times), control of plant diseases and plagues (3 times), workers hard to get (2 times), more crops are needed in organic farming for crop rotation; this interferes with specialization (2 times) and organic manure is hard to get (1 time).

Economic motives for not converting are also important. They concern 24.2% (16 out of 66) of the motives mentioned by the respondents. Uncertainty about the market is mentioned most often (10 times), followed by price risks (3 times) and the fact that no additional prices are paid for integrated products (3 times).

Idealistic motives for not converting hardly exist. They only are mentioned by one respondent and make 1.5% (1 out of 66) of all motives for not converting. The reason mentioned is that farmers can be convinced that they always have grown crops in the right way (because they have been taught to do it that way). In that case, conversion can feel like a kind of 'cursing in the church' (a Dutch expression).

Factors affecting the farmer's choice to convert to integrated or organic farming

The interviews elucidated which factors could affect a farmer's decision to convert to integrated or organic farming (table 1). Most of these factors are somehow related to the motives of the farmers. There seem to be 'external' factors and 'internal' factors. 'External' factors seem to be external in a way that farmers cannot affect them directly. Internal factors are more related to the farmers themselves and their personal circumstances. The respondents most often mentioned personal characteristics of farmers as an important internal factor affecting a farmer's choice to convert. They mentioned perseverance (4 times), dealing with uncertainties (4 times), dealing with risks (4 times), drive (3 times), urge to experiment (2 times), capability to leave old social networks and find new ones (2 times) and capability to leave the well-trodden path (1 time). Other internal factors which may affect a farmer's choice to convert to integrated or organic farming are the farm conditions and the financial situation of the farmer (table 1). Farm conditions are for example the location of the farm, the soil and the crop (some crops can be grown in an organic way more easily than other crops). The financial situation of the farmer determines whether he is able to invest, for example in organic farming.

Methods to reduce the perception of risks and uncertainty

Motives for not converting to integrated or organic farming are often related to a perceived risk or uncertainty. In some cases it is possible to reduce the risk perception or uncertainty. The respondents mentioned different ways to do so (table 2). The importance to involve other relevant actors in the conversion process, such as agricultural spokespersons, traders of crop protection products, policymakers, NGO's, was mentioned most often (table 2). Besides this, respondents mentioned financial criteria (financial incentives, professional marketing and chain development, market certainty and price guarantee and compensation if yields are disappointing), the importance of development

and transfer of knowledge (farmers becoming aware of possibilities of integrated or organic farming by experiences of or cooperation with other farmers and/ or improvement of agricultural education), consistent policy and room for experiments (for example to 'try out' organic farming)

DISCUSSION

To change or not to change?

Farmers have different motives to convert to integrated or organic farming or not. Idealistic motives are the most important reason to convert to more sustainable agriculture. These motives are related to the intrinsic drive of the farmer or his distinct belief that sustainable agriculture is a better – or the best – way (De Buck, 2001). Idealistic motives to convert to integrated or organic farming are also mentioned by Leferink and Adriaanse, (1998) and Eshuis and Buurma (2000). Technical motives are also an important reason to convert to integrated or organic farming. Apparently farmers want more cooperation with nature and 'cleaner' crops (Theuws et al., 2002).

Institutional motives are the most important reason for not converting to integrated or organic farming. Farmers are surrounded by a lot of actors, such as agricultural teachers and spokespersons, traders of chemical crop protection products, NGO's and policymakers. All these actors may affect a farmer's choice to convert or not. The attitude of different actors may be skeptical because they are not 'used' to or educated in integrated or organic farming, but also because it is against their interest that a farmer converts (for example traders of chemical crop protection products; Eshuis and Buurma, 2000) or because they feel threatened (for example farmers living in the area who are worried that they will be obliged to convert if their colleague shows that it is possible; De Buck, 2001). Tight legislation and inconsistent agricultural policy also are an important institutional motive for not converting (also mentioned by Buurma et al., 2000). Other motives for not converting to integrated or organic farming are of a technical or an economic kind. Farmers are worried about disappointing yields or the control of weed, plant diseases and plagues (also mentioned by De Buck (2001) and Van Balen et al. (2002)) or about their income: will they earn enough money with integrated or organic farming? Market uncertainty is also mentioned by Van Asselt (2000).

Personal characteristics and other 'farmer-related' factors affecting conversion

Conversion to integrated or organic farming is a complicated process. Farmers have to change their operational management entirely and often – especially when they convert to organic farming – they have to let go 'old', familiar social networks and find new ones (Van Balen et al., 2002). They also have to leave the well-trodden path of conventional farming, which might be extra hard because emphasis is still on conventional farming in agricultural education. This might be very threatening for some farmers. Other farmers might find it challenging. This mainly is related to the farmer's personal characteristics and his attitude towards and perception of risks (Theuws et al., 2002, De Lauwere et al., 2002a). In the motives to convert to integrated or organic farming or not, we have seen that that a certain motive to convert to integrated or organic farming for one person can be a motive for not converting for another person. One farmer for example may say: "I shall earn more money with organic crops" and another may say:

“Organic crops only cost me money”; one farmer is sensitive to social pressure of a critical society and another is sensitive to his critical colleagues who are sceptical about integrated or organic farming. There are, however, more ‘farmer-related’ factors affecting a farmer’s decision to convert to more sustainable farming or not. The financial scope of the farmer and farm conditions such as the quality of the soil and the location of the farm also play a role (Van Beuzekom et al., 1996; Eshuis and Buurma, 2000). Other factors affecting a farmer’s decision to convert to integrated or organic farming are related to the economic, technical and institutional motives mentioned before (table 1).

Conditions for a successful conversion

Deciding to convert to integrated or organic farming is not so easy. A farmer has to take several barriers. Ypma and Van Gaasbeek (2001) describe five conditions prior to an important change. An increasing pressure to change is the first condition. Is there an increasing pressure to change? Agricultural policy likes farmers to convert to integrated or organic farming, but they don’t really ‘reward’ it. Some farmers might experience a kind of pressure by themselves because they dislike the use of chemical crop protection products and artificial fertilizers (Leferink and Adriaanse, 1998) and others need pressure from ‘outside’ which can vary from a little stimulating to heavy pressure. A clear common goal is the second condition. Here, we find a difference between integrated and organic farming. There are ‘rules’ for organic farming, but for farmers considering conversion to integrated farming, it is unclear which rules they have to follow. This can be a barrier for conversion to integrated farming, especially because farmers feel insecure about which rules *might* be imposed upon them in the near future (Buurma et al., 2000). A clear relationship between the goals and the instruments to reach the goals is the third condition for a successful change (Ypma and Van Gaasbeek, 2001). Sometimes this relationship is not clear to farmers. They simply don’t understand why conversion to integrated or organic farming can help them reaching their goal – perhaps because it is actually not *their* goal, but more the government’s goal (Buurma et al., 2000). Having the capacity to change is the fourth condition for a successful change. The results have shown that it not only concerns ‘farm capacities’ such as enough land, sufficient workers (Eshuis and Buurma, 1998) and financial means, but also enough knowledge (Van Asselt, 2000) and ‘personal capacities’ (the right personal characteristics, competencies, skills) (De Buck et al., 1996; De Lauwere et al., 2002b). A stepwise implementation is the latter condition for a successful conversion (Ypma and Van Gaasbeek, 2001). This is possible in integrated farming but it is not possible in organic farming. The possibility to convert stepwise or – at least – room for experiments to ‘try out’ organic farming might take away a serious barrier for farmers considering conversion to organic farming.

CONCLUSIONS

Different kind of motives to convert to integrated or organic farming (or not) can be distinguished. Idealistic motives are related to the intrinsic ‘drive’ of farmers or their distinct belief that integrated farming is better (or not). Economic motives are related to the question whether a farmer can make enough money out of integrated or organic farming (or not). Technical motives are related to aspects of integrated or organic farming such as the control of weed, plant diseases and plagues and the availability of workers.

Institutional motives are related to the institutions surrounding farmers. All kind of actors such as traders of chemical crop protection products and artificial fertilizers, NGO's, policymakers, agricultural spokesmen and teachers and farmers living in the area can positively or negatively affect a farmer's choice to convert to integrated or organic farming (or not). Idealistic motives are the most important reason to convert and institutional motives the most important reason for not converting. This illustrates that it is very important to involve all relevant actors when considering a conversion to integrated or organic farming, or more in general, a conversion to sustainable agriculture.

The question whether farmers will decide to convert to integrated or organic farming mainly depends on the farmer himself, his personal characteristics, his financial scope and the farm conditions. There always will be farmers who refuse to convert to more sustainable agriculture, even when the conditions for this way of farming are (made) optimal. Other farmers will convert anyway whether or not the conditions are optimal.

Motives for not converting to integrated or organic farming are often related to perceived risks or uncertainties by farmers. Taking away or decreasing these uncertainties might help some farmers who are considering conversion. This is possible by involving other relevant actors in the conversion process, financial incentives, development and transfer of knowledge, consistent policy and offering room for experiments.

ACKNOWLEDGEMENTS

Thanks to our twenty respondents for their contribution to this research and to the Dutch Ministry of Agriculture, Nature and Food Quality for funding the project.

Literature Cited

- Asselt, M.B.A. van, 2000. Perspectives on uncertainty and risk. Kluwer Academic Publishers, Dordrecht.
- Balen, D. van, Koesveld, F. van, and Wijnands, F.G., 2002. Omschakeling, moeizaam traag en mondjesmaat. In: F.G. Wijnands, J.J. Schröder, W. Sukkel en R. Booij (eds.). Biologisch bedrijf onder de loep. 'Biologische akkerbouw en vollegrondsgroenteteelt in perspectief' (in Dutch). PPO-AGV, Rapport 303, Lelystad.
- Beuzekom, W. van, Egberts, T., Geus, C. de, Haan, T. de, Hartman, B. and Sleurink, D., 1996. Het land luistert. Zestien inspirerende verhalen van boeren en tuinders die kiezen voor de biologische landbouw (in Dutch). Uitgeverij Roodbont, Zutphen.
- Buck, A.J. de, 2001. The role of production risks in the conversion to more sustainable arable farming. PhD Thesis, Wageningen University, Wageningen.
- Buck, A.J. de, Janssens, S.R.M., Krikke, A., Schoorlemmer, H.B., and Wossink, G.A.A., 1996. Risico's en risicoperceptie bij duurzame productiemethoden op het akkerbouwbedrijf (in Dutch). PAGV Interne Mededeling 1297, Lelystad.
- Buurma, J.S., Smit, A.B., Linden, A.M.A. van der and Luttik, R., 2000. Zicht op gezonde teelt. Een scenariostudie voor het gewasbeschermingsbeleid na 2000. RIVM en LEI (in Dutch). LEI Rapport 6.00.03, Den Haag.
- Eshuis, J., and Buurma, J.S., 1998. Biologische landbouw in de Wieringermeer (in Dutch). LEI, Mededeling 619, Den Haag.

- Eshuis, J., and Buurma, J.S., 2000. Kennisbehoefte bij omschakeling naar geïntegreerde bollenteelt in de Kop van Noord-Holland (In Dutch). LEI, Rapport 1.00.01, Den Haag.
- Ketelaar-de Lauwere, C.C., Luttk, J., Greef, K.H. de, Groot- Koerkamp, P.W.G., Langeveld, J.W.A. and Backus, G.B.C., 2000. Kentering en toekomst in de veehouderij (in Dutch; English translation 'Turning point and future of the livestock industry' is available at website: www.vsys.nl). Wageningen University and Research Centre, Lelystad.
- Lauwere, C.C. de, 2004. The role of agricultural entrepreneurship in Dutch agriculture of today. *Agricultural Economics* (in press).
- Lauwere, C.C. de, Enting, I, Vermeulen, P., and Verhaar, K., 2002a. Modern Agricultural Entrepreneurship, 13th. Int. Congr. Of Farm Management, July, 2002, Arnhem, The Netherlands
- Lauwere, C.C. de, Verhaar C.H.A. and Drost, H., (Eds.), 2002b. Het mysterie van het ondernemerschap: boeren en tuinders op zoek naar nieuwe wegen in een dynamische maatschappij (in Dutch with English Abstract). IMAG-rapport 2002-02, Wageningen-UR, Stoas, Wageningen.
- Leferink, J. and Adriaanse, M., 1998. Omschakelen: beren en bergen. Onderzoek naar de redenen van akkerbouwers en vollegrondsgroentetelers om niet om te schakelen naar biologische landbouw (in Dutch). IKC Landbouw, rapport 106, Ede.
- Ploeg, J.D. van der 1996. Going beyond modernization – New perspectives and prospects for rural employment -. In: C.H.A. Verhaar, P.M. de Klaver, M.P.M. de Goede, J.A.C. van Ophem, & A. de Vries (Eds.). *On the challenges of unemployment in a regional Europe*. Fryske Akademy no. 809, Avebury, Aldershot, pp. 303-328.
- Rathenau Institute, 1996. Van bestrijden naar voorkomen: een visie op duurzame gewasbescherming (in Dutch). Rapportage aan het parlement 19, Den Haag.
- Theuws, L.W., Buurma, J.S., Smit, A.B., Vernooy, C.J.M., Woerden, S.C. van, Poot, E.H., and Roestel, A.J.J. van, 2002. Ondernemerstypen en kennisverspreiding rond geïntegreerde teelt (in Dutch). LEI Report 7.02.06, Den Haag
- Trip, E., and Uineken, O.J.W., 1994. Een meerdimensionale benadering bij de introductie van geïntegreerde akkerbouw (in Dutch). LEI, Interne nota 431, Den Haag.
- Ypma, M., and Gaasbeek, T. van, 2001. Waar in het bronsgroen eikenhout ... (On)mogelijkheden van vermarkting van de omgeving (in Dutch). LEI. Rapport 7.01.05, Wageningen.

Tables

Table 1. Factors affecting a farmer's choice to convert to integrated or organic farming, based on 20 in-depth interviews.

Factor	Related to	Mentioned (nr. of times)
Personal characteristics of farmer	The farmer	15
Market uncertainties	Economic motives	10
Price-making (organic/ integrated products versus conventional products)	Economic motives	8
Technical possibilities for weed control and control of plant diseases and plagues	Technical motives	8
Sceptical attitude of farmers living in the area	Institutional motives	7
Sceptical attitude of other actors	Institutional motives	7
Agricultural policy	Institutional motives	7
Farm conditions	Personal situation of the farmer	6
Financial situation of the farm(er)	Personal situation of the farmer	4
Accessibility of knowledge	Institutional motives	4
Social developments and trendiness of trade	Institutional motives	2
Availability of workers	Technical motives	2
Organisation of the production chain	Institutional motives	2
Availability of organic manure	Technical motives	1

Table 2. Methods to reduce farmers' uncertainty about converting to integrated or organic farming or not.

Reducing uncertainty by:	Mentioned (nr. of times):
Involving relevant actors in the conversion process	7
Becoming aware of possibilities of integrated or organic farming, for example by experiences of other farmers	6
Financial incentives	6
Professional marketing and chain development	6
Market certainty and price guarantee	5
Consistent policy	4
Development and transfer of knowledge; improving education	4
Room for experiments (for example to try out organic farming)	3
Compensation if yields are disappointing	2

Figures

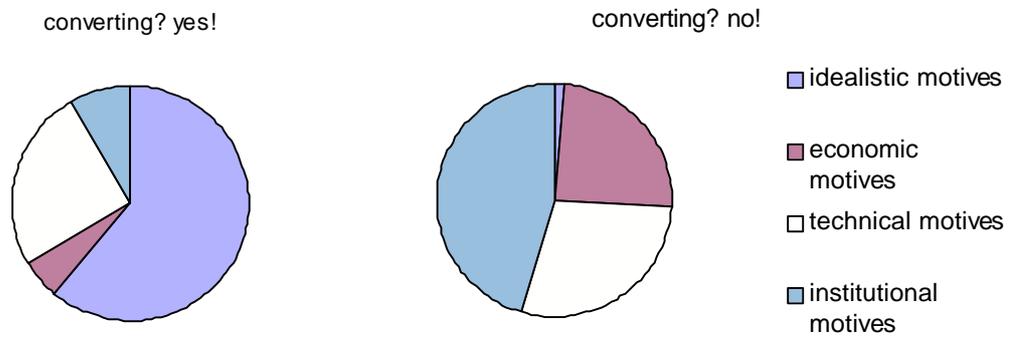


Fig. 1. Motives to convert to integrated or organic farming or not.