

STAKEHOLDER ANALYSIS IN THE CONVERSION TO ORGANIC FARMING

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Abstract

This article reflects on the methods of stakeholder involvement in an action research, or learning process from a socio-economic point of view.

The case study focuses on the diffusion process of organic farming in Germany. The adoption of organic farming is widely rejected for various reasons, for example due to technical problems, economic risk or poor acceptance of the social system. The hypothesis of this case study suggests that the adoption of organic farming on parts of the farm, for example apple orchards, gives the option to reduce the economic risk and initiates a learning process within the rural socio-economic system.

This process can be supported by an action research approach and the behaviour of the farmers can be explained by the diffusion theory and the Theory of planned Behaviour.

The application of the Theory of planned Behaviour (TpB) in conjunction with a stakeholder analysis is seen as an appropriate tool to involve relevant stakeholders, to reflect their attitude and personal image and to facilitate a learning process.

Keywords: organic farming, action research, theory of planned behaviour

Introduction

In addressing the involvement of relevant stakeholders in the diffusion process of organic farming in an action research project, one must consider two areas of interest, as there is

- the diffusion process of organic farming on the one hand (as described in the case study)
- and action research on the other.

In this manner the study reflects the holistic and behavioural approach of farming and rural systems research (DOPPLER W 2000) by looking at it as;

- holistic - in the sense that the decision of a farming family to change to organic farming is integrated in the vertical, horizontal and dynamic relations to their social, economic and environmental systems
- behavioural - in the sense, that action research is a highly participatory, action oriented methodology, which takes into account the objectives and decisions of relevant stakeholders within the rural system, especially within the distribution chain.

1. Background of the diffusion process of organic farming

With 3,2 % of all farmland used for the production of organic food and with conventional retail outlets accounting for less than 50 % of the total sales of organic produce, Germany has been one of the slowest European countries to develop the market for organic food (VAN DER GRIJP N M & DEN HOND F, 1999). An increase of 22,2 % in 2001 represented the largest ever growth in organic farming in Germany (WILLER H, LÜNZER I, HACCIUS M 2001), while different investigations have underlined the importance of conventional retail to the development of the organic market (MICHELSEN J, HAMM U, WYNEN E AND ROTH E 1999).

With this in mind, the question arises, to what extent can the involvement of producers, processing plants, and traders in this market be facilitated. The question must also be asked to what extent should conventional and ecological knowledge systems approach one another in order to ensure an intensive exchange of knowledge and experience. Further questions would be:

- Can the action research process support the adoption of organic farming practice and fulfil the needs of the target group?
- Are the social and economic interactions of a rural society the most important factors of the diffusion process?

The German organic agricultural movement (GERBER A, HOFFMANN V, KÜGLER M 1998; LULEY H 1996,) as in other countries (ROLING N & JIGGINS J 2000, SCHALLER N 1998) has developed an ecological knowledge system separate from, and even opposed to, mainstream agricultural policy and knowledge systems. New distribution chains, extension services, farmers journals and research institutes have been founded to organise support for organic farming – all of which was necessary for the diffusion of this innovation (ALBRECHT H 1992). However the vertical relations, for example, to extension services, markets, farmers association, information sources and policy, changed quite significantly. Looking at these processes from a behavioural perspective one should be aware of the fact that for those farmers still involved in the conventional rural system, the decision to convert to organic farming is influenced by a possible loss of social and economic relations. This may be one of the reasons why farmers are adopting organic farming methods, but are not joining organic growers associations organised within the AGÖL (Association of organic agriculture in Germany). Table 1 shows that in 1996, 87,9 % of all organic farms, with 92,3 % of all organic farmland, were associate members of the AGÖL. By 2001, this had fallen to only 60,8 % of farms, working 70,1 % of all organic farmland (WILLER H, LÜNZER I, HACCIOUS M 2001). If this trend continues, the majority of organic farmers will not be affiliated to one of the recognised organic farming associations (AGÖL).

This could be interpreted as the next step of the diffusion process of organic farming in Germany, in which parts of the conventional knowledge system and distribution chain offers support to farmers adopting organic farming. It is of particular economic advantage to change to organic farming on farms with low soil fertility, poor water supply and mountainous terrain.

Table 1: Share of farmland and development of the membership within AGÖL (Association of organic agriculture in Germany) on all organic farms in Germany

year	organic farming in Germany		farmland in ha		farms		share of farmland		share of farms	
	farmland	farms	AGÖL*	EU**	AGÖL*	EU**	AGÖL*	EU**	AGÖL*	EU**
	ha	number	ha	ha	number	number	%	%	%	%
1996	354.171	7.353	326.856	27.315	6.465	888	92,3	7,7	87,9	12,1
1997	389.693	8.184	351.062	38.631	6.793	1.391	90,1	9,9	83,0	17,0
1998	416.518	9.209	359.715	56.803	7.147	2.062	86,4	13,6	77,6	22,4
1999	452.279	10.400	374.383	77.896	7.464	2.936	82,8	17,2	71,8	28,2
2000	546.023	12.740	414.507	131.516	7.807	4.933	75,9	24,1	61,3	38,7
2001	655.600	14.400	459.328	196.272	8.751	5.649	70,1	29,9	60,8	39,2

Source: (Willer H, Lünzer I, Haccius M, 2001)

* member of the Association of organic agriculture in Germany

** according to EU-Regulation (1092/91) certified organic farms (no members of AGÖL)

2. Methods:

Action research (AR) from a behavioural perspective

Stakeholders make decisions regarding their own actions or a change of habits, in order to maintain natural resources and to gain economic benefits without straining the social system (SCHWEDERSKY TH, KARKOSCHKA O, FISCHER W. 1997; BRENDLE 1999). AR is a method for an intervention in decision making processes and in the change of attitudes.

Kurt Lewin and John Collier are recognised as the founders of action research (ALTRICHTER, 1990, McTAGGERT 1997). Most applications focus on organisational development (OD), pedagogy and participatory rural development (EHRET W 1997). In Germany, in recent years, action research has influenced approaches to regional development and sustainable landuse. Kurt Lewin has also set the basis for Organisational Development OD.

„Action Research is a cornerstone of organisational development, underlying both the theory and practice of the field.“

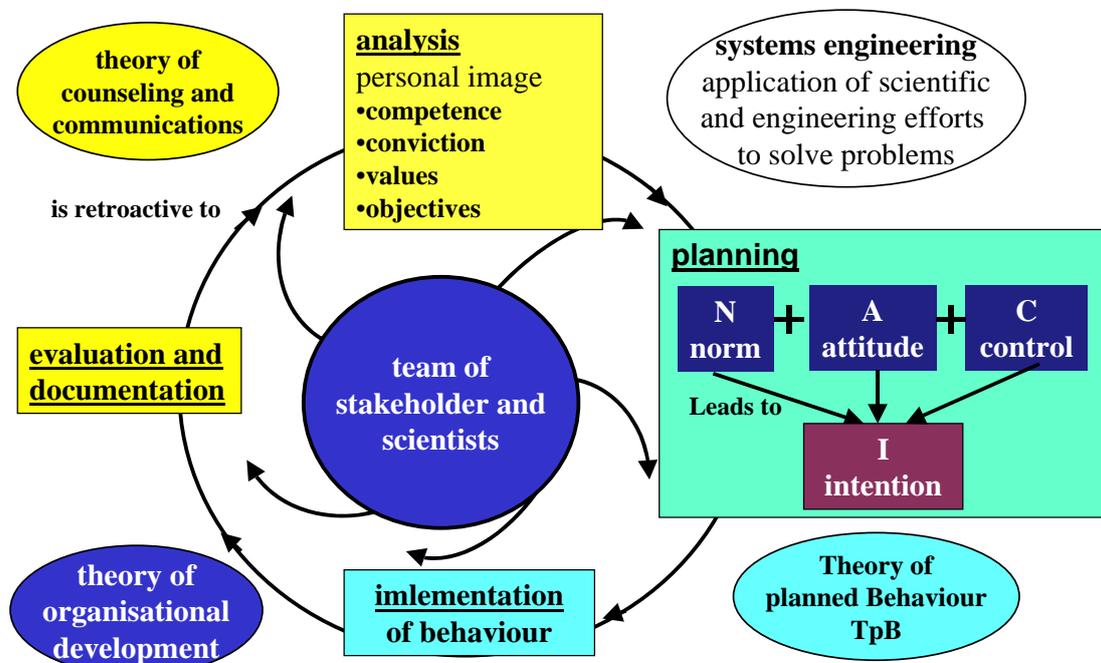
(FRENCH W L UND BELL C H 1999):

The methodology of action research evolved mainly in the Anglo-American scientific community (SELENER D 1997), where there seems to be a greater acknowledgement of the collaboration of practitioners and scientists. (ALBRECHT H 1992).

Both AR and OD fall back on various scientific theories and disciplines (BECKER H 1995). The following four scientific branches can be considered as the theoretical basis for action research:

- **systems engineering**
- **organisational development**
- **communication and pedagogy**
- **social psychology (Theory of Planned Behaviour TpB)**

Figure 2 gives a brief overview of these theories within the learning process of an action research cycle (SUSMAN G I & EVERED R D 1978).



Sources: Susman und Evered, 1978; Ajzen I 2001, Rogers C 1985.

Figure 2: Theories of the learning process within action research

Only the TpB will be explained in depth here as it had a major impact on the methodology of the research project. The systems engineering approach provides the basis of the action research cycle as a problem solving technique. Starting from the analysis of the situation or problem, practitioners and scientists working in collaboration, plan various solutions, implement the best solution and evaluate the outcome. All steps in the cycle should be clearly documented to allow the cycle to begin again if the solution is found to be unsatisfactory. From a behavioural perspective the people are of central interest. It is therefore necessary to start with the analysis of the problem by looking at the personal image of the stakeholders referring to their past behaviour, as it is important to assess whether or not the planned actions will match the peoples competencies, convictions, values and objectives, as described by Rogers C (1985). The more the norms, and controlling beliefs required for the implementation match personal perceptions, the more likely is the adoption of a new behaviour. A learning process, such as the change from conventional to organic farming, should be considered from the point of view of behavioural sciences.

There is a huge amount of literature and various scientific approaches to predict or explain human behaviour (ECKES T AND SIX B, 1994). The TpB was chosen as the methodological basis of the project, as it seemed to have an extraordinary potential for application as a quantitative instrument to deal with psychological aspects of sustainable landuse and ecological behaviour of the stakeholders (SCHAHN J 1996, BEDELL J D C AND REHMAN T, 1999). In particular, its method of dealing with social norms as one of the three factors forming the intention of behaviour seems to be of major importance within a rural system (SALAMON S et.al. 1998). Fig. 3 shows the basic concept of the theory of planned behaviour.

Ajzen states that

- „beliefs about the normative expectations of others and motivation to comply with these expectations (normative beliefs/ N=Norm),
- beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes (behavioural beliefs/ A=Attitude)
- and beliefs about the presence of factors that may facilitate or impede performance of the behaviour and the perceived power of these factors (control beliefs/ C=Control)

lead to the formation of a behavioural intention.“ AJZEN (2001)

Every individual concept consists of some salient beliefs, that are formed by cognitive and evaluative components.

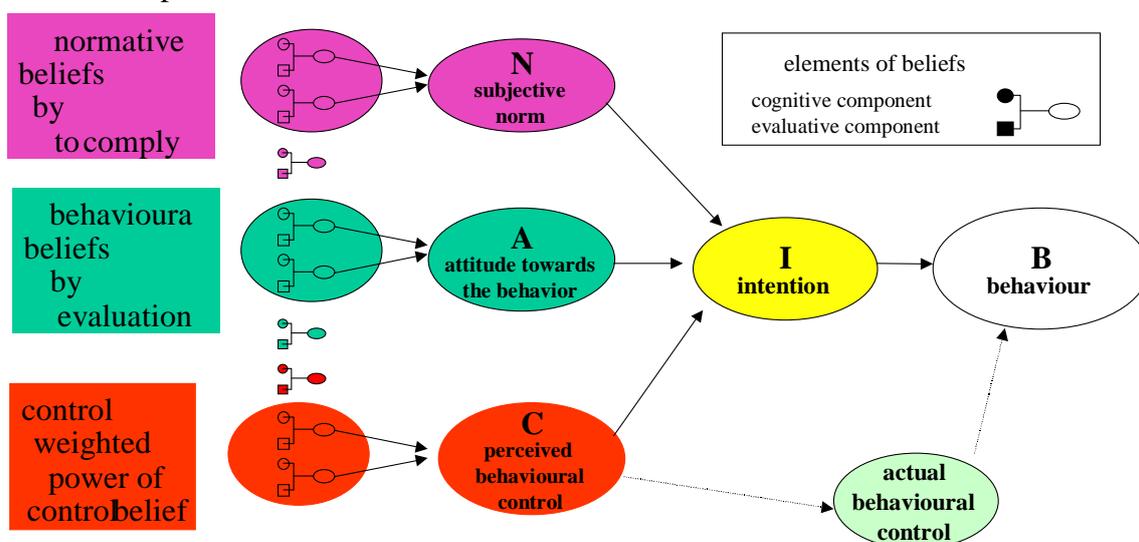


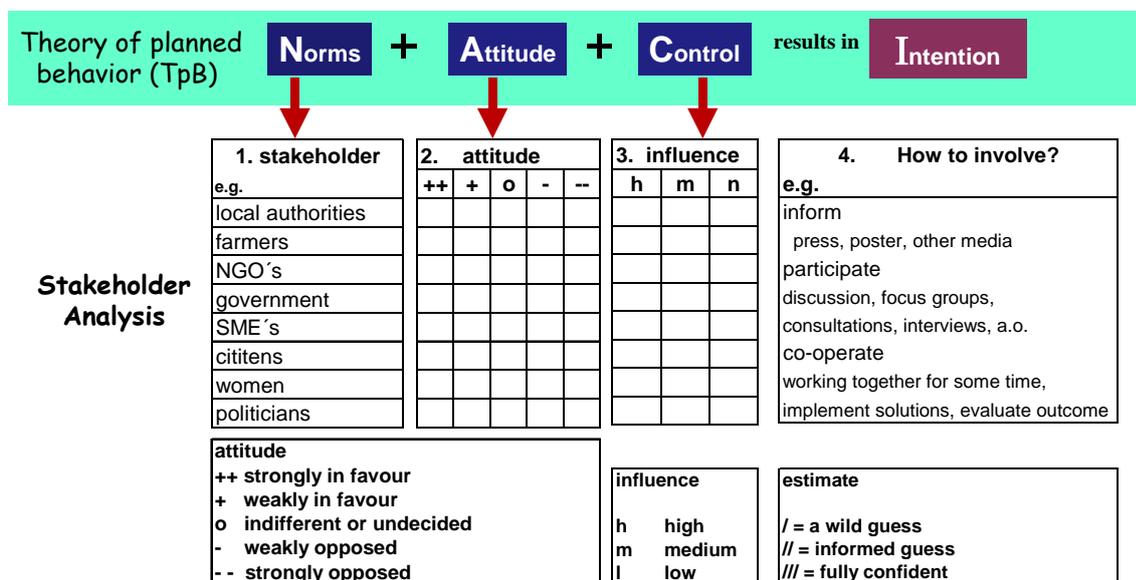
Figure 3: Theory of Planned Behaviour TpB by Ajzen

In the following case study of an intervention in farmers ecological behaviour, one has to look on the various aspect of the TpB with regard to organic farming.

Relevant social groups, which form the normative beliefs can be part of the horizontal farming system and vertical rural system. Relevant behavioural beliefs could be, for example, pest control or economic feasibility and how these beliefs match salient values, objectives and personal convictions. Control beliefs reflect the internal personal control upon behaviour (which allows the person to behave according to his personal conviction) and the external influences upon the behaviour (where other individuals are essential for the behaviour).

An internal influence could be the use of organic pest control, whereas the economic feasibility of organic farming would be an external influence, related to the market price of the product.

The action research approach in the project was highly participatory in the sense that the scientists actively supported the relevant stakeholders. During the action process, (which included for example; consultations and counselling of individuals; group discussions; a major questionnaire of 130 farmers; public relations work; and the development of an appropriate organisational structure) a stakeholder analysis according to DICK B (2001) was implemented in combination with the TpB as described in Fig. 4.



ressource: Beckard R. quoted in Dick B. 2001. Ajzen I. 1988

Figure 4: Stakeholder analysis corresponding to the TpB

The stakeholder analysis reflects attitude and influence as the criteria for deciding the stakeholders involvement in the action process. The attitude of the various stakeholders are assumed to be of importance to the subjective norm of individual behaviour.

The participation analysis as part of the AR-process covers four procedures, which can be executed either together with, or independently of, the stakeholders.

1. The first step of the procedure is the listing of all those (persons and groups), who are affected by the change, or are able to affect the change. (DICK, 2001)
2. The next step is to determine the attitude of the listed stakeholder. The attitude is evaluated in five levels from positive to negative.
3. Thirdly is the evaluation of the influence of the stakeholders classified from high to low.
4. As a last step, various possible forms of participation are discussed.

At the start of the action process, the estimate of attitude and influence by researchers and participants will be relatively vague. However, as more information is collected, and more

discussions and moderated group sessions take place, both criteria can be judged more exactly.

It is also possible for the participants to perform a self-assessment regarding how their attitude and influence may be of use during the project. In order to represent the certainty of the estimate of attitude and influence, the degree of the certainty of the estimation should be part of the analysis with the distinction being between fully confident (///), an informed guess (//) and a wild guess (/). The certainty shows where there is a need for more information on various stakeholders attitude or influence.

The form of the participation depends not least on the availability of time and financial resources. Individual consultations require large amounts of time, while group discussions require less, however the atmosphere of group discussions can be less confidential. Individual interviews also provide much more detailed information and offer the opportunity to develop personal relations.

Results

After various interventions by the scientists through the action process it was possible to found a new farmers association of 230 farmers who work their apple orchards according to the EU-Regulation (2092/91) for organic farming (see fig. 5). Within 18 months the organic apple juice was on the market and lead to an intensive co-operation between research and the stakeholders.

In autumn 2000 the farmers delivered 905 tons of apples. Most of the farms converted only a part of their farm to organic growing, which is allowed within the regulation.

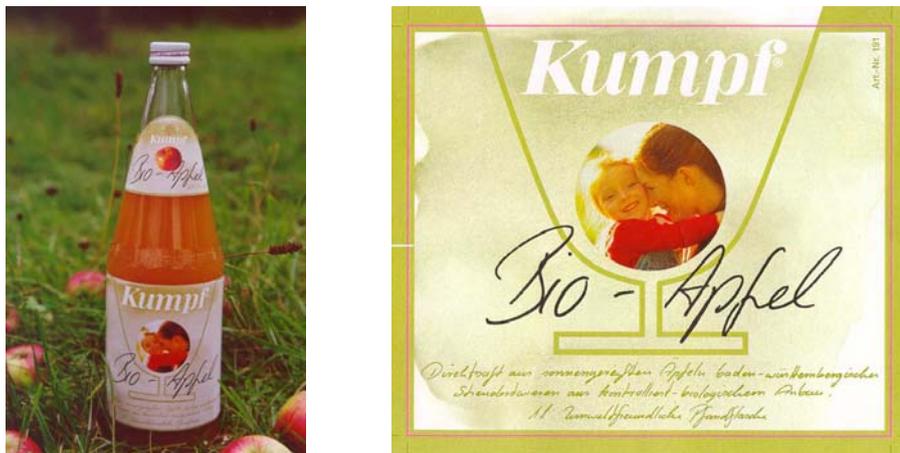


Fig. 5: organic apple juice

The result of the action research project is just one outcome of the project. However, the route taken in obtaining these results is of more importance, and of much more interest.

Every step and important milestone of the project is described below in accordance with the action research cycle presented above.

The process to organic apple juice according to the action research cycle

Month/ Year	Organisational structure and decision process	Action and research
12/98	Workgroup (WG) of nature conservation groups	Suggestion of idea to sell apple juice from extensive orchards according EU-Regulation (2092/91).

Analysis

2/99	WG on grassland management	Decision to become more involved in the idea. Drawing up first stakeholder analysis.
Until 4/99	Stakeholder, local experts and research staff	Support for the consultation and data collection on fruit orchards together with stakeholders and experts.
4/99	WG of 35 stakeholder	Discussion on the potential of organic food markets.
7/99	Researcher	Work on consultation and motivation of stakeholders.
7/99	WG with 25 stakeholder	Self evaluation, with a positive vote for the project and decision to develop a questionnaire on farmers attitude.
Until 11/99	Researcher	Work on preliminary version, and finalisation of the questionnaire and sending it to 900 farmers.

Planning

11/99	WG of stakeholder	Discussion of the results of the questionnaire and final decision in favour of the project.
Until 2/00	Few farmers and representatives of co-operatives and processing company	Decision concerning basic marketing concept, including price, quantity, organisation of distribution chain and quality management.

Implementation

3/00	Stakeholder and researcher	Information and Promotion of the idea to farmers.
23.3.00	Stakeholder and researcher	Foundation of a farmers association with 60 members
31.3.00	Stakeholder and researcher	Facilitation of the membership of another 160 farmers by the 31st of March.
7/00	Farmers	Reception of certification according to EU-Reg. (2092/91)
Until 11/00	Farmers	Distribution of 900 tons of apples priced 200 Marks per ton – 80 DM above conventional apples.

Evaluation and documentation

2/01	Stakeholder	Satisfaction with the development of the project and decision to continue. In march 2001 another 60 farms join the co-operative.
End of 2001	Fruit company together with research staff	Work on the marketing concept for organic apple juice, as it does not sell as expected. A general lack of communication and an indifferent attitude of the sales staff toward organic juice is identified as problem. The company decides on a promotional tour for organic apple juice and might develop an organic juice range.
01/02	Assocation and research staff	Decision on the development of an extension service and 2-days workshop in March for farmers interested in changing all of their farmland to organic farming.
1/02	Research staff	Documentation of the development of the project.

Organisational Development

Action research projects require a basic organisational structure, or platform, for communication and decision making. During the analysis phase of the action research cycle this can be any form of discussion group, platform or forum open to almost all stakeholders interested in the subject.

During the planning and implementation phase, for the sake of efficiency, it is necessary to concentrate on those few stakeholders who hold the key positions and run the highest risks during the implementation. In the project the impact of the fruit company and the executives of the three co-operatives, together with representatives of the conventional farmers association, had to decide on the cornerstones of the marketing concept.

In the end, a new farmers association to produce and market organic apples and other products was founded, in which the farmers from three different co-operatives were organised.

Situation analysis starts with the relevant Stakeholder

The stakeholder analysis was especially important at the start of the project to obtain a brief overview of the stakeholders and their past performance with regard to their attitude towards, and influence upon, the idea. Due to an initial lack of information it was not possible to perform a detailed analysis as described above, however it was possible to develop a concept of whom to approach with the idea and how to approach them. Most important to the research process in the initial stakeholder analysis was the discussion on attitude and influence of each of the stakeholders by the participants in a workshop. During the process it was possible to react appropriately to changing situations, to decide upon the participation methods, or to decide upon the form of the questionnaire for the farmers by using the stakeholder analysis. In table 1 the influence of the fruit company can be clearly seen. Although the expectations of fruit company II were very low, they became involved in the project. The stakeholder analysis was also used as a self evaluation concept, in which the stakeholders had to state their position.

Table 1: Stakeholder analysis (February 1999)

target stakeholder	marketing of organic apple juice					
	attitude			influence		
	+	0	-	h	m	l
juice company I	X				X	
juice company II			X	X		
growers association	X					X
Co-operative I	X				X	
Co-operative II	X				X	
Co-operative III	X				X	
Co-operative IV	X				X	
agricultural administration & extension	X				X	
farmers		X			X	
+ in favour o indifferent or undecided - strongly opposed				h = high m = medium l = low		

Planning in the context of the Theory of planned Behaviour (TpB)

In July 1999 the discussion group voted for a questionnaire on the farmer's intention to join the project. This represented an opportunity to implement the theory of planned behaviour as an instrument for quantitative analysis. Some of the most important aspects of this will be described below. The theory of planned behaviour was also implemented in the analysis of the market performance of the organic apple juice. The participants response to the questionnaire were influenced by the project idea and the support of relevant stakeholders

(key persons). Due to the special circumstances of the questions, which addressed a concrete course of action, it was not possible to prevent an uninfluenced response from those asked. Information on the front page of the questionnaire favoured the project with statements from the most influential stakeholders, such as the fruit company and the farmers association.

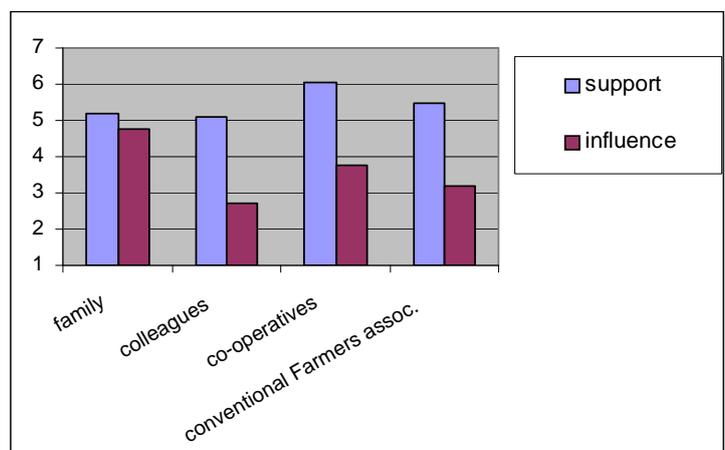
Relevant Attributes of the attitude

Economic benefit	The high price of the produce was a driving force of the project.
Compatibility with practice	Half of the extensive apple orchards were not treated with synthetic pesticides or fertiliser. Very little adoption of the farming practice was necessary.
Tradition	Working extensive apple orchards is an important family tradition.
Ecological importance of extensive apple orchards	Most farmers did know about the ecological relevance of extensive apple orchards.

Relevant Social norms

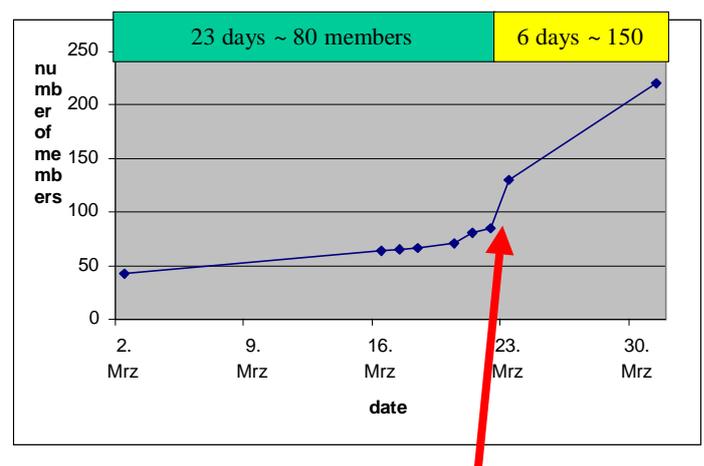
The answers show that it was assumed that most social groups would support the project. The farmers pointed out that only the family had a major influence upon their decision. Another strong influence came from the juice company, who has been a trading partner of the farmers for years. Figure 6 points out, that the influence and support of colleagues, co-operatives and the conventional farmers association were of minor importance when compared to that of the family.

However, it should be borne in mind that individuals may not admit that their personal opinion is influenced by the attitudes of others. Looking at figure 7, the decision of the individual farmer to join the new farmers association was clearly influenced by other farmers, who had already joined. The farmers had approximately 2 months in which to make up their minds on the project. Due to some intensive public relations work with articles in all major newspapers, another 100 farmers joined the project within the last week, indicating they had been influenced either by colleagues or the article.



1 = low – 7 = high

Fig. 6: Influence and support of relevant social groups



Launching of an article in all local newspapers
 „Cooperativ is looking for another 100 farmersto produce organic apple juice
 130 have already joined“

Fig. 7: Development of the membership of the association

Relevant control beliefs

Internal control	Only 10 of the 130 participants in the questionnaire were not fully responsible for extensive apple tree orchards. Of those farmers who actually joined the project, the familial support was their most important consideration corresponding to the workload during harvest, in which the whole family is involved.
external control and certification	Most farmers agreed that an external certification was necessary and appropriate.

Conclusions

The co-operation of researchers and stakeholders in the action research process led to:

- The foundation of a farmers co-operative with 290 members in 2001
- The certification of fruit orchards according to EU-Reg. (2092/91) on organic farming.
- The implementation of a marketing concept for controlled ecological apple juice.

The results highlight action research to be an appropriate methodology to facilitate a learning process towards sustainable landuse. The case study describes the intervention in a process involving the conversion of apple orchards to organic farming and the marketing of certified apple juice.

The case study underlines the assumption that organic farming will expand rapidly as soon as conventional distribution chains become involved with the organic market. This will also lead to a closing of the gap between the knowledge systems of ecological and conventional farming. It is only a matter of time until conventional farmers associations and state extension services, who have opposed the organic movement in Germany in the past, will develop a knowledge and support system for “conservative organic farmers”.

Focussing on the behavioural aspects of the learning process was of great importance to the intervention of the research staff. The application of the Theory of planned Behaviour (TpB), in conjunction with the stakeholder analysis, is shown to be an appropriate tool in a conceptual method to involve the relevant stakeholder. The combination of a qualitative and a quantitative analysis has great potential for the behavioural approach to action research and action learning processes.

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