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Facilitating organic farmers' experiments in Austria

Assessment of video as trigger
for farmers' own experimentation activities

Master's Thesis

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"… those who live and breathe a way of life are those who are best placed to understand its limitations and opportunities; they are the true experts."

Nick and Chris Lunch on the beliefs leading their company ‗Insight' in developing the Participatory Video methodology in ‗Insights into Participatory Video: A Handbook for the Field' published 2006.

Abstract

Farmers‘ experiments are an integral element of agricultural practice and form the precondition for local innovation. An understanding of how to stimulate innovation among organic farmers is crucial for attaining sustainable agriculture. This master‘s thesis assesses the situation of organic farmers‘ experiments in an Austrian mountainous region, video as a tool to capture and share the research process of farmers‘ experimentation and the videos' potential to trigger farmers‘ experiments. Research was done between May 2010 and May 2011. Four videos were recorded with the support of six organic farmers located in Tyrol and Vorarlberg. The videos were developed in a participatory process and were then applied and evaluated under different learning environments (2 farmers‘ video workshops in the Austrian district of Judenburg, Styria, n = 34; and 1 students‘ video lesson in an agricultural high school located in the Austrian district of Liezen, Styria, n = 16). Data collection and video evaluation were done via participant observation, semi-structured interviews, survey questionnaires and group discussions. The analysis included qualitative content analysis, univariate and bivariate statistics. Results of the two farmers‘ video workshops indicated that farmers‘ experiments are considered to have high relevance for 85% of the participating organic farmers: the farmers surveyed were positive about farmers‘ experiments. Farmers conduct experiments on a wide range of different topics (82 farmers‘ experiments). For farmers farming part-time, the occurrence of farmers‘ experiments was significantly higher than for those farming full- time (*Fisher’s Exact Test:* p=0.017). The videos stimulated 71% of the participating farmers to conduct experiments at their farms in the future. The videos were able to raise awareness, change attitude and share knowledge, concerning farmers‘ experiments, and they were found to be successfully applicable both in adult and student agricultural education. After watching the videos, 12 of the students (75%) came up with ideas for experiments they would like to try in the near future on their parents‘ farms. Video additionally proved to be a trigger for discussions under various conditions and convincingly enabled ‚social learning‘ in settings with different actors (farmers, advisors, researchers and students).

Keywords: farmers' experiments, organic farming, sustainable agriculture, participatory video, application of video, Austria

Kurzzusammenfassung

Bäuerliche Experimente sind ein integraler Bestandteil der landwirtschaftlichen Praxis und formen die Voraussetzung für lokale Innovationen. Ein Verständnis dafür, wie Innovationen unter Biobäuerinnen und Biobauern anzuregen sind, ist ausschlaggebend für die weitere Entwicklung in Richtung einer nachhaltigen Landwirtschaft. Diese Masterarbeit beurteilt die Situation biobäuerlicher Experimente in einer alpingeprägten Region Österreichs, Video als ein Instrument zur Dokumentation und Weitergabe des Forschungsprozesses bäuerlicher Experimentiertätigkeit und das Potenzial von Video um bäuerliche Experimente anzuregen. Die Forschung wurde im Zeitraum von Mai 2010 bis Mai 2011 durchgeführt. Es wurden vier Videos mit der Unterstützung von sechs Biobäuerinnen und Biobauern aus Tirol und Vorarlberg erstellt. Die Videos wurden in einem teilnehmenden Prozess entwickelt und anschließend in unterschiedlichen Lernmilieus eingesetzt und zudem evaluiert (2 Video-Workshop für Bäuerinnen und Bauern im österreichischen Bezirk Judenburg, Steiermark, n = 34 und 1 Video-Unterrichtseinheit an einer höheren land- und forstwirtschaftlichen Schule im österreichischen Bezirk Liezen, Steiermark, n = 16). Die Datenaufnahme und Videoevaluierung wurden über die Methoden der teilnehmende Beobachtung, des semistrukturierten Interviews, des Fragebogens und der Gruppendiskussion durchgeführt. Für die Datenanalyse wurden die qualitative Inhaltsanalyse, univariater und bivariater Statistik angewandt. Die Ergebnisse der zwei Video-Workshops zeigten, dass bäuerliche Experimente für 85% der teilnehmenden Biobäuerinnen und Biobauern einen hohen Stellenwert haben. Die Biobäuerinnen und Biobauern zeigten eine positive Einstellung bäuerlichen Experimenten gegenüber. Die Befragten experimentierten mit einer umfangreichen Auswahl unterschiedlicher bäuerlicher Experimente (82 bäuerliche Experimente). Unter Bäuerinnen und Bauern, die im Nebenerwerb wirtschafteten, kam es im Vergleich zu jenen im Vollerwerb Wirtschaftenden zu einem signifikant höheren Auftreten bäuerlicher Experimente (*Exakter Test nach Fisher*: p=0,017). Die Videos motivierten 71% der teilnehmenden Bäuerinnen und Bauern in Zukunft, auf ihren Betrieben bäuerliche Experimente durchzuführen. Die Videos könnten das Bewusstsein der Bäuerinnen und Bauern hinsichtlich bäuerlicher Experimente stärken, deren Einstellung zu diesen ändern und Wissen über diese weitergeben. Die Videos könnten, sowohl in der Erwachsenenbildung, als auch im Schulwesen erfolgreich eingesetzt werden. Nachdem SchülerInnen die Videos gesehen hatten, bekamen 12 (75%) der Teilnehmenden Ideen für Experimente, die sie in der näheren Zukunft auf ihren elterlichen Betrieben ausprobieren wollten. Darüber hinaus erwies sich Video als Auslöser für Diskussionen unter verschiedenartigen Bedingungen und ermöglichte ‚soziales Lernen' in unterschiedlichen Anordnungen mit diversen Akteuren (Bäuerinnen und Bauern, BeraterInnen, ForscherInnen und StudentInnen).

Schlüsselworte: Bäuerliche Experimente, ökologische Landwirtschaft, nachhaltige Landwirtschaft, teilnehmendes Video, Anwendung von Video, Österreich

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Used abbreviations

LFz Raumberg/Gumpenstein	Styrian agricultural education and research centre
PV	Participatory Video
VVCs	Video Viewing Clubs
WARAD	African Rice Centre

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1 Introduction

Farmers‘ experiments and innovations have been an important aspect in the development of the world‘s agricultural systems. Testing new methods and technologies, as well as experimenting and innovating, are integral and common elements in the daily life of farmers (Bentley, 2006; Sumberg and Okali, 1997). Farmers‘ capacity to respond and adapt to ongoing changes is the foundation of agricultural evolution (Mak, 2001). Through experimentation farmers gain practical experience and build up local knowledge, offering them valid solutions tested by time (IFOAM, 2005).

Farmers‘ experiments have also played an essential role in the development of organic farming. Before the 1990s organic farmers were not fully supported by science, consultancy or agricultural extension programmes. Organic farmers had to develop organic farming individually through experiments, which resulted in continuous innovation. Despite this considerable experimental potential within the organic farming movement, these development efforts were seldom recognised by most institutional research (Padel, 2001).

Farmers‘ experiments contribute to the creation of new knowledge and form the precondition for innovation (Rogers, 1995). To facilitate farmers‘ experimentation activities is of major interest for the actors in the system of organic farming. Innovative farmers are few and disseminating their innovativeness is an important challenge to enhance local innovation systems (Pant and Odame Hambly, 2009). Therefore facilitating participatory communication that triggers local innovations, thereby enabling a wider audience of users to benefit, is one of the key challenges of agricultural development (Chowdhury and Hauser, 2010).

Up to now there have not been enough methods for documenting and disseminating farmers‘ experiments (Bentley, 2006). There are many alternative extension methods available, but the real challenge is to select one able to communicate appropriate, easily understood messages, which at the same time reach the large audience (Bentley, 2009). Video is especially appropriate because it can be used in many ways to record and enhance communication between different actors in the agricultural system (Van Mele, 2008 cited in Chowdhury et al., 2010). Video-mediated capacity building can trigger experimentation and innovations among farmers (Chowdhury et al., 2011). Video can offer easy accessible, comprehensive and attractive information on farmers‘ experiments to farmers and the public (Lie and Mandler, 2009). In particular farmer-to-farmer videos developed in a truly participatory process seem to fulfil this promise (Chowdhury and Hauser, 2010).

In the course of this thesis, four farmer-to-farmer videos providing insight into the very nature of farmers‘ own experimentation activities were developed in a meaningful participatory way. Subsequently the videos were presented to organic farmers in farmers‘ video workshops, but also to students of an agricultural high school during a students‘ video lesson. The thesis investigates the videos‘ potential to trigger farmers‘ own experimentation activities. It shows how farmers participating in the participatory video recording evaluate the process they went through and the videos the jointly created. The results of the farmers‘ video workshops are presented, exploring the situation of organic farmers‘ experiments in a mountainous region of Austria. Further the impact the videos had on the participating farmers is shown, and the results of the workshop and the video evaluations are presented.

In addition the results of the students‘ video lesson are discussed. The impact the videos had on the students is shown and the videos themselves are evaluated. Finally the dissemination of the videos is discussed, showing further areas of possible application.

2 Personal background

I grew up on a farm. During my childhood I witnessed the ongoing developments in agriculture as farmers tried to adapt under the conditions of constant change. My education at an agricultural high school, as well as national and international internships on farms, and experience gained in the field of education and advisory services enabled me to experience the innovative potential existing in agriculture.

During my Master‘s studies in Organic Farming, I focused on issues concerning rural development. I wanted to learn how to stimulate the farmers‘ innovative potential to help the rural community, especially to help organic farmers to deal effectively with change. For me, knowledge turned out to be the most important resource for promoting sustainable rural development and video to be a way of effectively sharing it.

The working group „Knowledge Systems and Innovations" within the international research project „Organic Farmers‘ Experiments – Learning local knowledge in Austria, Israel and Cuba" therefore offered me a perfect environment for undertaking my thesis. After the mentioned project had built a foundation of specialist knowledge, it was in tune with my personal background, experience and interest to explore how farmers‘ experimentation in Austria can be facilitated by the application of video.

3 Objectives and research questions

This thesis contributes to the research about farmers‘ experiments in Austria. The thesis explores scripted participatory video (PV) as method of capturing organic farmers‘ experiments. Further, the thesis adds empirical evidence on organic farmers‘ experimentation activities and finally assesses the potential of video as a trigger for farmers‘ experiments under different learning environments (adult and student education). The thesis aims to demonstrate the potential of organic farmers‘ to conduct their own research aimed at finding innovative solutions for current problems in the face of change. Further this thesis shows the potential of video to advance farmers‘ experiments in Austria.

The thesis is structured in line with the following research objectives:

- To show the situation of organic farmers‘ experiments in the district of Judenburg, an alpine area in Austria:
    - by identifying topics of farmers‘ experiments;
    - by uncovering the attitude farmers have to farmers‘ experiments;
    - by exploring the factors influencing farmers‘ experimentation activities.
- To explore video as a method to record the process of organic farmers‘ experiments:
    - by involving the farmers in the development of PVs;
    - by creating four videos in a participatory process showing organic farmers‘ experimentation activities;
    - by having the participating farmers evaluate the final videos;
    - by evaluating the process of PV recording by the participating farmers.
- To explore the potential videos have to motivate/stimulate organic farmers‘ experiments:
    - by demonstrating the impact the videos have on other farmers by showing them the videos in workshops;
    - by having the other farmers evaluate the videos;
    - by evaluating the workshops themselves.
- To explore the potential videos have as educational resources:
    - by testing the impact the videos have on students;
    - by having the students evaluate the videos.

The following research questions were examined in the study:

- Concerning the situation of organic farmers‘ experiments in the district of Judenburg:
  - What are the topics of farmers‘ experiments?
  - What importance do farmers‘ experiments have for organic farmers?
  - What kind of attitude do organic farmers have to farmers‘ experiments?
- Concerning the PV recording:
  - How do farmers involved in the PV recording evaluate the video as a final outcome?
  - How do farmers involved assess the process of recording the video?
- Concerning the videos‘ potential as trigger for farmers‘ experiments:
  - What impact do the videos have on farmers‘ experimentation activities?
  - What impact do the videos have on organic farmers‘ attitudes towards farmers‘ experiments?
  - How do farmers participating in the workshops evaluate the videos?
  - How do participating farmers evaluate the workshops?
- Concerning the videos‘ potential as educational resources:
  - What impact do the videos have on students?
  - How do students evaluate the videos in the context of a regular lesson?

4 Background and conceptual framework

A summary of relevant literature on ‗farmers' experiments' builds the foundation of the present work. To conceptualise the research process in farmers' experimentation activities a model is presented. Additionally a summary of the literature on video as a practical method and tool to facilitate organic farmers' experiments is given. The extract of the collected literature reveals the power of video, focusing on its flexibility of application, explaining why video is a useful approach to trigger farmers' experimentation activities and finally to present innovative ways of sharing and using video in development.

4.1 Farmers' experiments

As a central feature, farmers' experiments have formed a part of agriculture since the very beginning (Sumberg and Okali, 1997; Saad, 2002; Bentley, 2006). They are the basis for the development of agriculture. Testing new methods and technologies, as well as experimenting and innovating, were integral and common elements in the daily life of farmers (Haverkort, 1991; Scheuermeier, 1997; Sumberg and Okali, 1997; Bentley, 2006; Richards and Suazo, 2006). Farmers' capacity to respond and adapt to ongoing changes is the basis for agricultural evolution (Mak, 2001). Through experimentation farmers gain practical experience and build up local knowledge (Bentley, 2006; Richards and Suazo, 2006).

Therefore farmers' experiments have also played an essential role in the development of organic farming. Until the 1990s, organic farmers did not have the specific support of governments and agricultural extension agencies. They had to develop organic farming individually through experiments, this resulting in continuous innovations (Padel, 2001). Despite of the considerable experimental potential within the organic farming movement (Kummer et al., 2007), these efforts were mostly ignored by institutional research for many years (Padel, 2001).

By testing the feasibility of organic farming and to reduce the risk, farmers preferred to do experiments with organic methods before making the conversion (Padel, 2001). Based on the results of their experimentation activities, farmers made their decision to change their style of working. Most of the farmers converting therefore had experience with experimentation. Experiments played an important role not only before and during this process of conversion, but also during the first years of farming organically (Padel, 2005).

Farmers experiment and innovate continuously to maintain and improve their agricultural production. Nevertheless the scientific community, with the exception of the research done in the field of participatory research, seldom pays attention to the methodology and results of these experiments (Haverkort, 1991; Bentley and Baker, 2005). The activities of research centres and multinational enterprises frequently minimise the importance of farmers' experimentation activities and, in many cases, farmers capacity to experiment and innovate are underestimated. Scientific research is not always based on the reality of farmers' lives. Scientists and extension workers frequently still use a hierarchical model to transfer innovations without taking into account local concepts or the economic, socio-cultural, environmental and technical conditions of the farmers (Bunch, 1991). This approach does not value the experimentation done by farmers themselves, which would carry the potential to increase the acceptance of formerly ‗top down' introduced innovation (Aristizàbal et al., 2002 cited in Bentley, 2009). Additionally in many cases farmers' experimentation makes innovation introduced from ‗the outside' more practical (Bentley, 2006). With the ‗top down' transfer model problems are preassigned, because innovations are not oriented to the needs of people in rural areas (Haverkort, 1991).

Rural zones are characterised by their diversity of conditions, making the needs of the people who live in those areas different. Farmers have specific local knowledge about the environmental conditions and local problems as well, experience that researchers cannot have (Sumberg and Okali, 1997). Understanding the farmers' experimentation process is the basis for a beneficial cooperation and participatory creation of knowledge (Bentley and Baker, 2005).

When farmers speak about farmers' experiments the most common word used is ‚testing'. Farmers in their sense define this term widely, often as synonym for ‚experimenting'. Farmers' experiments can be understood as the activity of introducing something totally or partially new to their farm and to evaluate the success or failure of this introduction (Quiroz, 1999). Farmers understand as experimenting: ‚to observe deeply the results of a change introduced by them on in their farm and test these results with the opinion or statements of others'. In other words: ‚comparing something already known to something unknown' (Stolzenbach, 1999).

A word closely linked to the topic but not synonymous is the term ‚innovation'. An innovation is an idea, a practice or an object that is perceived as new by an individual or another adoption unit. Concerning innovation it is of little importance whether the idea is objectively new, measured the passage of time since the first use or discovery. Further, ‚invention' is understood as a really new idea, technology or object (Rogers, 1995). Therefore experimentation and innovation are different but complementary processes. Experiments contribute to the creation of new knowledge and may form the precondition for an innovation (Rogers, 1995) or invention.

Farmers' experiments differ from scientific experiments: farmers mostly use their own methods under different conditions to those used by researchers (Sumberg et al., 2003). Farmers are part of the system they are experimenting with and have a direct interest in improving the situation regarding their needs. Farmers sometimes change variables during their experimentation to make sure of determining the limiting factors. Scientists usually reduce reality and are more thorough. Their methods have to be reproducible to enable them to explain their results to other scientists, a procedure that is generally to strict for farmers (Stolzenbach, 1999).

Farmers' experiments have general characteristics in common – even though they are influenced by several factors (e.g. educational level and size of useful agricultural areas) and vary in each region (Quiroz, 1999). In each step of production at which the farmer has to make a decision, a possibility for experimentation can arise. Farmers' experiments therefore are an integral and continuous element of agriculture (Stolzenbach, 1999). Farmers' experiments are part of the farming system; they are carried out with the available physical and biological resources (Rajasekaran, 1999). They vary from very easy to very complex (Hocdé, 1997). For reasons of risk reduction, new methods are normally applied to small plots and kept simple (Connell, 1991). When starting an experiment in general farmers do not have a clear concept of the result; by looking at the result obtained they will decide whether an experiment will be continued or not (Stolzenbach, 1997).

Successful experiments emerge by combining new ideas with local knowledge. New ideas can be introduced from outside the farm (e.g. video) as well as being the farmers' own ideas (Bunch 1991; Bentley, 2006). Sources for farmers' experiments can be something that the farmer has observed or that was recommended by others; an own idea; or technologies or methods that were actively promoted by institutions (Sumberg and Okali, 1997). Experiments themselves have the inherent potential to trigger further experimentation activities (Kummer, 2011).

Farmers are motivated to conduct experiments mainly by economic and personal stimuli. While economic motives can be, for example, market demand (Bentley, 2006; Quiroz, 1999; Critchley, 2000), personal motives are found in the concern for the development of the farm, by later generations or the community (Zigta and Waters-Bayer, 2001) and the challenge to

try something different in order to convince their neighbours afterwards (Scheuermeier, 1997).

Farmers‘ experiments can be classified by their origin, cause or topic, the process followed in the experimentation, and the final results at which they arrive. The sources of experiments can be the interest in solving a problem (Rhoades and Bebbinton, 1991; Hocdé, 1997; Sumberg and Okali, 1997; Quiroz, 1999; Zigta and Waters-Bayer, 2001; Rogers, 1995), curiosity (Stolzenbach, 1997; Quiroz, 1999; Zigta and Waters-Bayer, 2001), or the testing of expectations (Stolzenbach, 1997; Zigta and Waters-Bayer, 2001; Bentley, 2006). Topics for experiments can be economic, social and institutional, although 75% of farmers‘ experiments found in the literature are technical (Leitgeb et al., 2008). According to the classification used in the model describing the research process in farmers‘ own experimentation activities (Figure 1), farmers‘ experiments can be classified in two groups: (1) farmers‘ experiments aiming at the adaptation of a common solution, and (2) farmers‘ experiments conducted to try a new idea (Leitgeb et al., 2008; Kummer, 2011). By their results, farmers‘ experiments can be differentiated into ‚hard innovations‘ having physical and visible results (e.g. new tools), and ‚soft innovations‘, i.e. the result of an experiment is a method for improving an intangible situation (e.g. knowledge) (Rogers, 1995).

The documentation of the research process in farmers‘ experimentation activities via video was the basis for this master‘s thesis. The aim was to create a deeper insight into the nature of farmers‘ experiments as essential element for farmers to develop the farming system (Kummer et al., 2008), and to contribute further to a better understanding of the organic farming movement in support of its development (Kummer et al., 2007). The model explaining the farmers‘ experimentation research process set up by Ninio and Vogl (2006) was used for defining the boundaries of the research area (Figure 1).

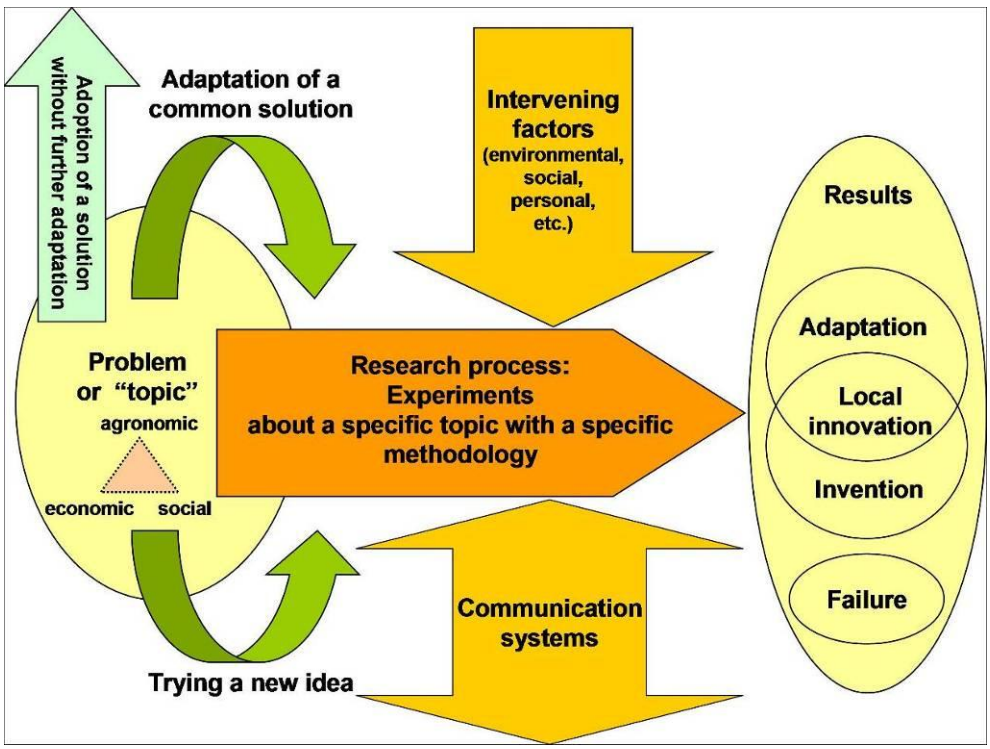


Figure 1: Theoretical model of the research process in farmers' experimentation activities (Ninio and Vogl, 2006. modified)

A farmer does not necessarily have to enter into an experimentation process when a problem arises. He/she always has the possibility to deal with the situation by adopting an available method or solution. If the farmer enters the process, he/she can decide to adapt a common solution already known to him or her (Pretty, 1991), or to try a new idea. The process of experimentation can be defined as a research process involving a specific methodological approach, a research set-up, and monitoring of the process and evaluation of the results (Kummer, 2011). Factors influencing the process are environmental, ecological and social conditions (Sumberg and Okali, 1997). They affect the set-up, duration, methods and results of the experimentation. An interrelation also exists with the communication system the farmer is involved in (e.g. media, science or advisory services). By combining the knowledge of different knowledge systems, a bi-directional flow evolves that allows farmers to use the most applicable information for their farms (Hendrickson et al., 2008). Through this kind of knowledge transfer, synergies between the different knowledge systems can also be created (Hoffmann et al., 2007; Berkes, 1993). The results of the process can be an adaptation of a method or solution, a local innovation, an invention, or even a failure, i.e. an experiment that did not lead to a satisfactory result.

A combination of different factors has impact on an experimentation process (Kummer et al., 2008). Factors influencing farmers‘ experiments can be external (e.g. political, institutional, social, economic or cultural changes, and/or biophysical, environmental and ecological conditions) (Mak, 2001; Padel, 2005), as well as ‚internal‘ factors directly related to the farmer (e.g. age, gender, social network, work organisation, production process, farmer‘s budget, size of agricultural area, and type of agricultural production) (Mak, 2001; Padel, 2005). They can be categorised into agroecological factors (e.g. topography), socioeconomic factors (e.g. social connection and relationships, farm operation type), socio-demographic factors (e.g. level of education, cosmopolitan relationships, travelling, size of agricultural areas, age, gender) and personal factors. Personal factors (e.g. personality, creativity) are likely to be the most significant in the interrelation of changes and experiments (Kummer et al., 2008).

Even if farmers‘ experiments are an integral and common element in the daily life of farmers (Haverkort, 1991; Scheuermeier, 1997; Sumberg and Okali, 1997; Bentley, 2006; Richards and Suazo, 2006; Kummer et al. 2007), the scientific community seldom pays attention to them (Haverkort, 1991; Bentley and Baker, 2005). Up to now there have not been enough methods for documenting and communicating farmers‘ experiments (Bentley, 2006). Because of the fundamental role of farmers‘ experiments, it is advisable to support farmers in their experimentation activities and to give them room for creativity within the regulatory frameworks and conditions for farming (Kummer, 2011).

This thesis aims to explore the potential of video as a tool to facilitate farmers‘ experiments in the context of Austria.

4.2 Facilitating farmers' experiments

The understanding of how to stimulate innovation among farmers is crucial for attaining sustainable agriculture (Zossou et al., 2009a); therefore facilitating farmers' experimentation activities as a precondition for innovation (Rogers, 1995) is of major interest for the actors in the organic farming system. The support of exchange of information and experience between farmers is one promising option towards such facilitation. This exchange can be achieved by providing easy access to relevant information, and by communicating methods and outcomes of farmers' experiments within the farming system and to the public (Kummer, 2011). With many alternative extension methods available, the real challenge is to select one able to communicate appropriate, easily understood messages, which at the same time reach the large audience (Bentley, 2009). Video has great potential to encourage local innovation in terms of a more sustainable agriculture (Zossou et al., 2009a) by providing easily accessible, comprehensive and attractive information on farmers' experiments to farmers and the interested public (Lie and Mandler, 2009).

4.2.1 The power of video

Lie and Mandler (2009) described the power of video in their book „Video for development – Filming for rural change':

> *"…Video is a powerful medium that can be produced at low cost and yet has the potential to reach a mass audience. You can use video in remote areas to raise awareness of an issue that concerns the local community, or you can put video on YouTube and reach the world!"*

The power of moving pictures to inform, educate and entertain was recognised long ago. Video in development has been part of the game for more than 30 years. But video was only able to show its inherent potential with the arrival of digital video, which has made filming and editing affordable and easier to use. In the 1960s video was first used in development in coastal Canada to engage different development stakeholder groups in dialogue and planning. This process was later referred to as „the Fogo Process' (Lie and Mandler, 2009; Chowdhury et al., 2010). Since then video has been used for diverse reasons and in diverse ways for development worldwide in the context of the so-called „developing' but also the „developed' world. But what makes video a powerful tool?

Video attracts rural people's curiosity. Video can be extensively used in learning and decision-making. Additionally video overcomes illiteracy, while at the same time being comfortable with the narrative culture prevailing in most developing countries (Lie and Mandler, 2009). Video carries the potential to unleash local creativity and experimentation, to facilitate institutional innovations and social inclusion (e.g. the poor, youth and women) (Van Mele et al., 2010). Video shows „humanising' potential in terms of accurate representation of the people in their context presenting their messages (Ferreira, 2006 cited in Petheram et al., 2011b). Video also in the context of the gender debate helps to make women more visible (CTA, 2006). Video encourages viewers to consider their thoughts, to examine new ideas with others, to analyse their own beliefs and behaviour and to practice new behaviours (Uccellani and Rosales, 1992). For many people video even seems to be more convincing than being told by a person (Van Mele et al., 2005). Compared to other extension methods (e.g. farmer-to-farmer extension), video avoids quality loss when communicating a learning content (Van Mele et al., 2007).

Finally video can be used to achieve various aims. This may include awareness raising and advocacy. In this context video helps to highlight a specific issue and to persuade its viewers to change their behaviours or actions. Video's use is feasible for engaging various stakeholders in taking action. It is able to address complex development problems and realities and therefore helps to bring together diverse stakeholders from various levels (local to global) to discuss, negotiate, and reach decisions. Additionally video can be applied to

build capacity, enabling learning and the exchange of experience and reflections. Here video's application as tool for agricultural extension is most common, e.g., it is used during facilitation sessions where it helps the facilitator to generate discussion and reflection amongst its viewers. Finally video can be used for reporting and data collection. Its use is feasible for participatory monitoring and evaluation, which enable communities to record and interpret stories of significant change (Lie and Mandler, 2009) (Table 1).

Table 1: Applications for video in development (Lie and Mandler, 2009, modified)

I	Video for awareness raising and advocacy	II	Video for stakeholder engagement and action	III	Video for capacity building	IV	Video for reporting and data collection
a	Video for awareness raising			a	Video for rural learning		
b	Video for advocacy			b	Video for the exchange of experiences and reflection		

At the same time the methods used for achieving these aims can be diverse too. Starting by training aspirants in video techniques to build their capacity, it enables them to produce their own films. Participatory video (PV) can be used to empower people and communities, helping them to identify central issues and this leads to community-led learning, using both scripted and scriptless styles. Further video can be used for knowledge sharing with various actors (e.g. farmers, scientists, extension workers, agricultural journalists). Also video can be applied in research by using video to gather specific information, for example, in reflexive research, by filming farmers explaining a specific issue while other farmers make comments. In addition high quality video maybe used for public relations issues, raising awareness about a specific topic. Finally minimal video is also an option, resulting in videos produced with minimal professionalism but able to provide ad hoc solutions for specific purposes (Lie and Mandler, 2009).

Even if the range of possible applications of video seems impressive, video itself develops its full potential only when integrated into programmes. Therefore video should be seen as part of the overall interaction with the stakeholders, taking many aspects of the local community into account and making use of a range of the mentioned methods: only than does video fulfil important functions in a project by facilitating problem awareness and the decision making process. Video can then accomplish consensus, foster behaviour change in the community, and reach entire communities (Table 2) (Lie and Mandler, 2009).

Table 2: Video production methods used in development (Lie and Mandler, 2009, modified)

Training	PV	Knowledge Sharing	Research	Quality Video	Minimal Video
	a Scriptless PV b Scripted PV				
Integrated Programmes					

A perfect example of a successful well-integrated use of video can be found in the WARDA rice videos. In 2003, CABI (Centre for Agricultural Bioscience) launched the Good Seed Initiative (GIS) aiming to improve the quality and value of smallholders‘ seed. This was to be achieved by enabling the poor to access and benefit from seed sources beyond their community, and by incorporating learning in regional and national seed systems and policies (Lie and Mandler, 2009; Zossou et al., 2009a;b).

In Bangladesh, women do 80% of the seed management, and hence the success of the project strongly depended on successful communication within women. 2000 women from various communities were trained in seed management. At about the same time, a local team from a women‘s NGO was trained in video production. Both teams worked closely together, aiming at producing high-quality, farmer-centred learning videos on how to improve rice seed management by using local resources. As a result of the cooperation, the developed videos reached 130,000 farmers in Bangladesh between 2003 and 2005 and they continue to be aired annually on national television (Lie and Mandler, 2009; Zossou et al., 2009a;b).

Building on the success of the videos achieved in Bangladesh, the videos were integrated into the training provided by the African Rice Centre (WARAD). In 2009, the rice videos were translated into 30 African languages, leading to great success also among African farmers, who enjoyed seeing other farmers in different parts of the globe dealing with similar problems and being able to solve them on their own. As a remarkable further result the videos additionally strengthened the capacity of more than 400 organisations (Lie and Mandler, 2009; Zossou et al., 2009a;b).

PV is the video method used in this thesis. It shows great potential to illustrate the power of video in development. Generally it can be described as an unscripted video production process directed by an individual, or a group or community themselves (CTA, 2006; Kindon, 2009), giving ―face" to people seldom represented authentically in the media (Lunch and Lunch, 2006).

The application of PV fundamentally changes the role of the development worker from being an expert to being a facilitator of a community directed process (CTA, 2006). Despite other possible uses of video, PV is not primarily about informing but more about forming a person, group or community. PV increases the dialogue between, and collaboration and respect for other ideas amongst the participants and therefore fosters community building and social cohesion. PV projects have, according to Harris (2005), three overall functions, therapy, activism, and empowerment. The last mentioned is addressed in the present work. PV can lead to deeper understanding, social change and, has potential to ―destabilise" [sic] hierarchical power relations and to create spaces for transformation (Kindon, 2002; Kindon, 2009). PV is used to engage different development stakeholders, facilitating development (e.g. monitoring and evaluation of development projects) and sharing local innovations (Lunch, 2004; CTA, 2006).

To create PV, it is not primarily important to hand the camera over to the people, or to work without a script. There is no single accepted way of doing PV, making the process flexible enough to be applied in many different situations (Lunch and Lunch, 2006; Chowdhury and Hauser, 2010). But consensus has been reached that it is essential to let people take control of the process in terms of providing a collective authority of the relevant actors at the different stages (e.g. shooting, script, content, audience) of the video recording (Lunch and Lunch, 2006; CTA, 2006; Chowdhury and Hauser, 2010). When applying PV, it is more important to articulate the rural people‘s voice, to let them tell their message, than to create possible burdens for participating actors by letting them handle the equipment (CTA, 2006; Chowdhury and Hauser, 2010). What is crucial is to allow the participants to determine their boundaries of representation (Odutola, 2003). The process therefore is often more important than the final product (CTA, 2006). PV leads to the development of ―consciousness of self"

for the participants and empowers them through skill and knowledge acquisition, and group development (Braden, 1999; Shaw and Robertson, 1997).

Chowdhury et al. (2010) distinguish scriptless from scripted PV, showing that the existence of a script does not define PV in its core, rather defining its possible applications. The scriptless style can trigger creativity and cohesion among the actors who take part in the participatory action and subsequently network. Scripted style can be adopted to develop learning tools for training farmers and disseminating local innovations. A key difference is that professionals are in this case more involved, to make the videos really clear (CTA, 2006). As shown, both styles have their specific uses, and can be used in combination to foster sustainable development in rural areas.

The example of the WARAD rice videos shows the power of video as a flexible tool aiming for sustainable development in the rural context. But what potential does video have to trigger farmers‘ experimentation activities as a precondition of local innovation?

4.2.2 Video as trigger for farmers’ experiments

Video-mediated capacity building can trigger experimentation and innovation among farmers (Van Mele et al., 2005; Van Mele, 2006; Van Mele et al., 2007; Zossou et al., 2009a;b; Chowdhury et al., 2009; Chowdhury and Hauser, 2009; Chowdhury and Hauser, 2010; Chowdhury et al., 2010; Chowdhury et al., 2011). Especially farmer-to-farmer videos developed in a truly participatory process seem to fulfil these promises (Chowdhury et al., 2009; Chowdhury and Hauser, 2010). Innovative farmers are few and disseminating their innovativeness is an important challenge to enhance local innovation systems (Pant and Odame Hambly, 2009). Therefore facilitating participatory communication that triggers local innovations, thereby enabling a wider audience of users to benefit, is one of the key challenges of agricultural development (Chowdhury and Hauser, 2009; Chowdhury et al., 2010; Chowdhury and Hauser, 2010). Video is an especially appropriate tool because it can be used in many ways (e.g. WARAD rice videos) to record and enhance communication between different actors in the agricultural system (Van Mele, 2008 cited in Chowdhury et al., 2010).

It also has a number of other features privileging it to trigger farmers‘ experiments. Video is able to document the local innovation capacity (Chowdhury et al., 2010). Video has the power to better explain the biological or physical processes and therefore allows learning about local innovations, creating new knowledge. People experiment more readily when provided with information helping them to understand the underlying principles of a technology (Van Mele et al., 2005).

Farmer-to-farmer videos have one major advantage — they are done in local language (Chowdhury et al., 2010), encompassing words and body language as important features for the ability to communicate (Witteveen et al., 2009 cited in Chowdhury and Hauser, 2010). Farmers seeing other farmers speaking authentically on camera is convincing because they can easily identify with them (Van Mele et al., 2005). Sharing of knowledge and skills is more effective when farmers watch their peers explaining the ‗why‘ and ‗how‘ of a locally grounded technology (peer-to-peer knowledge sharing) (CTA, 2006; Lunch, 2004; Chowdhury et al., 2009). Good videos put new ideas into the heads of those who see them, triggering experimentation activities, thus fulfilling their function (Van Mele et al., 2005).

Showing these kinds of videos to farmers, supported by a facilitator answering questions, allows many people to be reached at once in a relatively short time (Van Mele et al., 2005). Video is therefore able to initiate localised discussion, dialogues, analysis and planning activities, being the ‗intermediary object‘ for negotiation and mediation of multiple perspectives (Schneider et al., 2009). Video as a flexible learning tool can thereby easily be integrated into existing extension approaches no matter whether they are rather formal or informal (Chowdhury et al., 2009). Also video can be used as mass media, reaching out to

rural people most quickly (Chowdhury and Hauser, 2009) but also far beyond the scale of the rural.

The functionality of farmer-to-farmer videos can be explained as a circulating process. Capturing the innovative behaviour, attitudes and practices of people doing farmers' experiments and making (local) innovations leads to the farmer-to-farmer videos. Using them to promote individual and social learning can lead to further farmers' experiments and innovations. The resulting farmers' experiments and innovations can in turn be captured by recording the further behaviours, attitudes and practices, which closes the cycle by enabling further experimentation and innovation based on the video extension (Van Mele et al., 2007) (Figure 2).

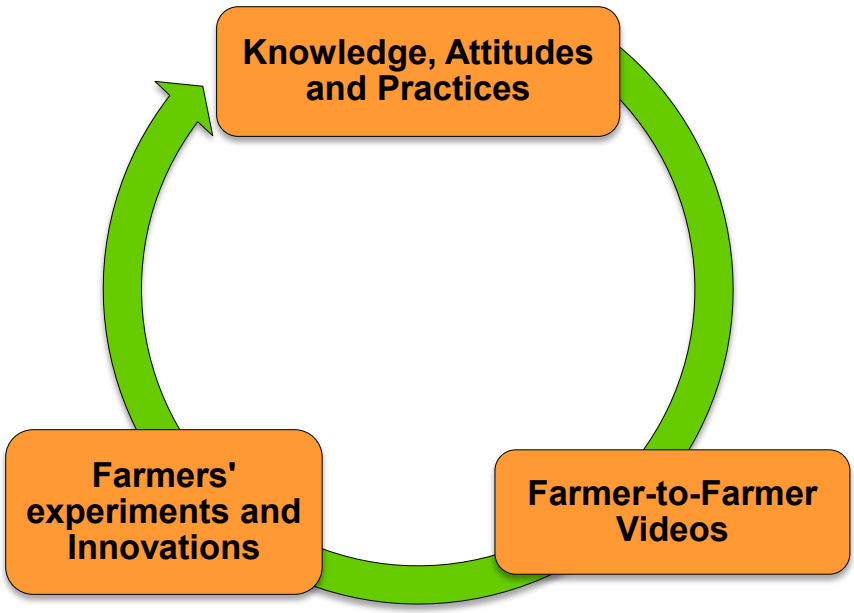


Figure 2: The Farmer-to-farmer video learning cycle. Farmers' experiments and innovations, knowledge and behaviours form the basis of farmer-to-farmer videos, which in turn aim to influence these through processes of individual and social learning (Van Mele et al., 2007, modified)

Next to other possible applications of video, PV seems to have special potential to trigger farmers' experimentation activities (Lunch and Lunch, 2006; Chowdhury and Hauser, 2010). Van Mele (2006) clearly stated that both process and outcomes of participatory processes increase the efficiency and impact of educational videos.

PV is an accessible, interesting and inclusive (e.g. gender, literacy) methodology (CTA, 2006). PV enhances both the horizontal (e.g. communication with other communities) and vertical (e.g. communication with decision-makers) flow of local knowledge in multi-stakeholder settings (Lunch and Lunch, 2006). PV helps to establish two-way communication and helps to build trust between researchers, change agents and farmers (Van Mele et al., 2007). At the same time PV enables researchers and development workers to learn about local innovations and to change their attitudes towards working with farmers (Van Mele, 2006). PV provides an intimate space in which people feel open to sharing their ideas, visions and innovations (CTA, 2006).

Participants get the possibility to engage in a reciprocal learning process. Here PV shows strong links to social learning for strengthening the capacity of local innovation (Chowdhury and Hauser, 2010). But at the same time, PV provides an opportunity for intensive learning through the experiences made during a PV making process(experimental learning) (Witteveen and Enserink, 2007 cited in Chowdhury and Hauser, 2010). These learning

experiences help the participants of a PV project to change their frames of reference, opening their minds to the ideas of others (Witteveen et al., 2009 cited in Chowdhury and Hauser, 2010).

PV enables farmers to represent their knowledge and skills and to link these to other knowledge bodies (e.g. scientific, local). Therefore PV provides an important precondition for developing effective innovations via farmer–researcher collaboration, but additionally also shows its potential to unfold the tacit domains of knowledge (Van Mele, 2006; Hoffman et al., 2007). PV triggers reflection and experimentation by creating a new drive for learning within and across the addressed actors groups (Braden, 1999; Chowdhury and Hauser, 2010; Schneider et al., 2008). PV gives people and communities the chance to record their local knowledge, innovations and best practices to be shared with others (CTA, 2006). PV therefore amplifies the status of local knowledge. The amplified status is built on the participants‘ realisation of its value and the pride and self-esteem gained through their participation in the PV project (Lunch and Lunch, 2006; Chowdhury and Hauser, 2010). The results of selected studies using farmer-to-farmer video for learning and triggering experimentation and innovation give more evidence of this.

InsightShare (a leading organisation in the use of PV) in 2003 used PV to promote farmer-led innovation in rural Turkmenistan. PV offered a channel for farmers to communicate their ideas, innovations, theories and decisions to present them not only to each other but also to other stakeholders outside the community (‗spread effect‘). During the PV project the villagers emphasised the need to learn from more experienced farmers to rediscover traditional methods helping them to improve their livelihoods. They found that traditional knowledge still existed, but was held by only a small number of individuals. This knowledge was recorded and shared to give less experienced farmers the possibility to learn from the village ―experts", innovators and keepers of traditional knowledge. The PV participants were proud seeing their knowledge and experience recognised and valued (Lunch, 2004).

Community screening generated local exchange of ideas and experience encouraging others also to participate in the PV project. During this project video proved its effectiveness as workshop tool by raising awareness and triggering discussion amongst villagers outside the communities the PV project was conducted in. Copies of the videos were left to the key actors enabling further using and sharing of the documented knowledge (Lunch, 2004).

Based on this the videos were also shown to 30 high level representatives active in the agricultural sector earning unanimously positive reaction. The outcomes of this project show videos‘ potential in promoting experimentation and local innovations at local, national, but also international level, empowering local farmers and allowing relevant actors to learn from each other (Lunch, 2004).

Van Mele et al. (2005; 2007) found video-mediated learning for improving seed quality to be a cost-effective way to trigger experimentation and adaptation of local innovations among resource-poor women in Bangladesh (Seed Health Improvement Project from 1999 to 2002). Video proved to be an effective tool to teach rural women a wide range of new ideas (seed sorting, seed flotation, drying and storage), which resulted in a high level of experimentation, and in a change of their behaviour, knowledge and attitude.

After watching the videos 85%, of the woman tried out different storage containers, but also a range of other experimentation activities was found (e.g. adaptation of seed flotation). In conclusion, the study revealed that experimentation and adoption of technologies was high, and higher among those farmers who had watched the videos, than it was among farmers who had been trained by other farmers. Also video was shown to be influencing attitudes towards certain practices (e.g. seed sorting) more positively than farmer-to-farmer extension did (Van Mele et al., 2005; Van Mele, 2006; Van Mele et al., 2007).

By disseminating the videos, they had reached 130,000 people by the end of 2005 and gained at least 17 times the total investment cost. Whether these ideas in continuation lead

to sustained change in behaviour and practices was not subject of this study, but this will also depend on functionality and profitability of the introduced technologies (Van Mele et al., 2005; Van Mele, 2006; Van Mele et al., 2007).

Chowdhury et al. (2009) also applied farmer-to-farmer video to teach Bangladeshi women about local rice seed techniques. The study showed that the women‘s ability to apply and experiment with seed technologies was enhanced. The videos increased women farmers‘ knowledge and skills, supporting them to increase their yield by 15% and helping 20% of the households to attain rice self-sufficiency. Thereby the women‘s social and economic status was improved. Also reciprocal sharing of new knowledge and skills between the women farmers and between other farmers and service providers, was stimulated. The study provided an insight into farmer-to-farmer video‘s potential in sustainable agriculture.

Zossou et al. (2009a;b) found that video has the power to trigger innovation in studies with 200 women and 17 women‘s groups in 20 villages in central Benin. About 92% of the women attending both the farmer-to-farmer video sessions and the two-day community workshops developed creative solutions based on the presented rice parboiling technique, compared with 72% of those who only thought using video. Few women innovated after learning through workshops (19%) and after being informed by peers (15%). The workshops therefore stimulated innovations less than video did: women who did not watch the videos were 93% less likely to innovate compared with those who did. Clearly farmer-to-farmer video carries great potential to enhance sustainable agriculture by encouraging local innovations.

Van Mele et al. (2010) proved that the experiment-triggering potential of videos does not have to end at the farm gate. Videos can also unfold their potential at the system level. In 2009 WARAD gave copies of the videos on rice-seed health to local radio stations, resulting in three open-air shows in rice-growing areas in Benin. The success achieved shows the attractiveness and flexibility of video in development. But is every video project a success story or does it need more to develop videos‘ full potential than just to make one?

4.2.3 Sharing and using video

Video carries great potential to encourage farmers to start up experimentation activities, possibly leading to successful local innovations (Lunch and Lunch, 2006; Zossou et al., 2009a, Van Mele et al., 2010; Chowdhury et al., 2011). But just to produce a video is not enough to trigger farmers‘ experiments (Chowdhury and Hauser, 2010; Chowdhury et al., 2011). The videos have to be shared using innovative ways to bring them to the actors they are most valuable for. Sharing a video does not necessarily happen just by producing one. Sharing video is a single specific step that has to be considered separately (Lie and Mandler, 2009).

In order to share a video effectively the video needs to be comprehensible and attractive (Lie and Mandler, 2009). Effective videos visualise key learning matter in a locally appropriate and regionally relevant way, and can reinforce this with well-selected examples of local innovations, inviting viewers to try them out (Van Mele, 2006; Van Mele et al. 2010). The impact of extension clearly depends on the message delivered by this easily understandable method (Bentley, 2009). If scientific principles underlie the videos, they are most likely to be adopted the more they resonate with what the farmers already know and do: such videos are even enabled to become a stand-alone method (Van Mele, 2006).

Sharing and using a video can happen during the process of production of, for example, a PV project, where the video is screened in preview sessions to test the comprehensibility. Here group screenings play a central role in initiating community-led learning and in supporting social change (Lie and Mandler, 2009). But there are many more possibilities at hand to encourage sharing and using video effectively. Public screenings or the linkage of video with other media such as newspapers, radio, television or the internet (e.g. YouTube) are just a few examples of how sharing and using video can happen (Lunch, s.a.).

Petheram et al. (2011b) sees great potential in integrating video with other ‗visual products' (e.g. photos, diagrams and text) resulting from research projects in the so-called Hypermedia DVDs to communicate local messages. In particular this could be an effective tool to reach policymakers, influencing their decisions in favour of the rural community. Hypermedia can bring local knowledge to the front. Hypermedia allows the integration of different knowledge bodies (e.g. scientific, local) co-constructed with local people, and offers a platform to enhance reflection and discussion. In these terms hypermedia markedly influences the effectiveness of visual products like video.

Opening communication channels for recipients is essential to develop successful video projects with sustainable far-reaching impacts (Lunch, s.a.). Van Mele et al. (2007) proved that it was very effective to ask an audience after video screenings to come up with innovative ideas on how to share the presented videos. Locals often took the initiative and disseminated the videos in new ways to reach the regional community. Often just the information that a certain video is available motivated rural people to organise access to it. This is particular efficient when they themselves were involved in producing the video (Lie and Mandler, 2009).

Finally a video if produced to scale-up its impact has to be integrated into a overall communication strategy to get the most out of it, as the example of WARDA's rice videos shows clearly (Lie and Mandler, 2009). Video is thereby relatively easily integrated into other learning approaches. The videos developed under active participation of farmers reached thousands of people, helping them to improve their livelihoods (Van Mele et al., 2008 cited in Chowdhury et al., 2010). Even more to the point, some examples of how video can be shared effectively and at the same time at rather low cost are presented below.

PV was used by marginalised farming and fishing communities in the Niger Delta combined with mobile-to-web messaging and online video sharing. Using SMS gateway to Internet to the videos specific website and RSS feeds to podcast the videos for cost-free access. Testimonies were placed into their direct context for maximum visual impact. In addition the participants integrated their phone numbers into the clips to make them possible to reach by interested journalists and others to create a network of grassroots ‗reporters' (CTA, 2006).

PV in this case served as an innovative advocacy tool to demonstrate to the public concerned how oil companies are polluting lands and water. The video clips were also shown to the environmental minister and the outcomes of the presentation were promising. After watching the video clips, the minister tried to initiate a meeting between the communities and the leading oil company. Furthermore, he set up an environmental monitoring facility at state level, applying the same PV methodology as in the project. Finally he financed and will host a media centre, where volunteers will have both access to video production facilities and to Internet bandwidth (CTA, 2006).

At the same time a second project was located in the region. The projects aim was to produce TV documentaries with volunteers on the same topic, teaching them how to make a video. This project resulted in a ‗film-about-film', with the main characters locals learning to record digital testimonies. Meanwhile another producer used the developed materials to produce a short documentary for MTV as part of a series on young human rights activists. The video will be distributed over several continents, including Africa, to show how powerful using and sharing video can be (CTA, 2006).

A study from Ghana gives evidence that video used and shared in so-called Video Viewing Clubs (VVCs) is an effective and relatively low cost, interactive training method for providing low literacy populations with skills, information and knowledge on complex technical topics (e.g. integrated crop and pest management). The clubs consist of a group of 20-25 farmers who meet weekly or bi-weekly for several months led, by a trained facilitator. The core elements of this approach are: watching the videos several times in a session, facilitator-led discussions, and production practices supported by an illustrated guidebook, and finally with field demonstration of production practices covered in the videos. This method results in a

high rate of knowledge diffusion and further positive impacts on the farmers‘ perception of changes in their practices. VVCs promote enthusiasm for learning, offer intensive learning possibilities, and broaden the applicability of extension messages (no traditional extensionist necessary) at modest cost – another way to use and share video effectively (David and Asamoha, 2011).

From 2002 to 2007 a ‗from farmer to farmer‘ project under the supervision of Fry was conducted in Switzerland. The project aimed to find new ways to effectively communicate knowledge relevant for soil protection in the Swiss agricultural system. Fry et al. (2009) experienced the great potential of professional video modules used in combination with subsequent discussion with experienced farmers and advisors. In this setting the videos were excellent in terms of stimulating a discussion aiming at change (Schneider et al., 2008; Schneider et al., 2009; Fry et al., 2009).

By developing, but also sharing and using a video, a facilitator plays a key role (Chowdhury and Hauser, 2009; Lie and Mandler, 2009; Chowdhury and Hauser, 2010; David and Asamoha, 2011). Pretty (1995a cited in Bentley et al., 2003) identifies one great constraint for promoting wider use of farmer-to-farmer exchange – the quality of available facilitators.

The facilitator‘s social competencies are of major importance (Chowdhury and Hauser, 2009). Utilising participatory visual techniques (e.g. PV), the facilitator plays a ‗steering key‘ role in directing the process, while in other situations outsider facilitators can play a less active role. Facilitation therefore needs to be done with sensitivity, reflexivity and awareness, in a way that is inclusive of local people, their perspectives and their needs for sustainability (Petheram et al., 2011a). Petheram et al. (2011a) identified the key requirements for facilitators using visual techniques (e.g. video) as flexibility, openness and resourcefulness.

A change in the facilitator‘s attitude is necessary to use the full potential inherent in video, especially concerning PV (Chowdhury and Hauser, 2009). The facilitator needs sufficient quality and ‗mentality‘ to learn a number of issues during the implementation of PV in a specific context. The facilitators need to develop a ‗new professionalism‘ and ‗new capacities‘ to listen and learn more than to take control of the process. In other words, facilitators have rather to learn to ‗speak nearby‘ than to ‗speak for‘ rural people (Chen and Minh-Ha, 1994 cited in Kindon, 2002). When working together with many different actors in different contexts the awareness of their heterogeneity is another major issue. Capitalising on facilitator‘s past experiences can add value to video-based learning sessions (Van Mele et al., 2007) and is only one more reason why the capability of the facilitator is so important.

Additionally to the already mentioned conditions, to develop its full potential video needs systemic support (Odutola, 2003). Building strategic alliances during the process of video production and creating the feeling of shared ownership were key elements for the success of the video project on seed health described above (Van Mele, 2006). Here mobilising intermediaries (research, extension and media) by context-specific networking and the involvement of the local policy makers helped to integrate systemically the outcomes of video projects at different levels (local, national, international) (David and Asamoah, 2011; Chowdhury et al., 2011). There is the assumption that local innovations incorporated in national extension systems will be easily disseminated and adopted by farmers (Van Mele et al., 2007; Zossou et al., 2009a). Additionally the scaling up of ‗ambassadors‘ at global, regional, national and organisational levels is needed (Van Mele, 2006).

There is still little literature on how video stimulates farmer experimentation (Lie and Mandler, 2009; David and Asamoah, 2011), and none specifically raises this issue in the context of the so-called ‗developed‘ world. But looking at the given examples, video and here especially PV show great potential to trigger farmers‘ experiments, in Austria also.

5 Methods

This master‘s thesis is structured in four parts, representing the four major phases of field research conducted during the underlying research project. First, **video recording** was conducted. Four videos about the process of farmers‘ experimentation activities were made at four different organic farms. Second, two **farmers’ video workshops,** were held where the videos were presented to a selected group of organic farmers. Third, a **students’ video lesson** was held in which the videos were used at an agricultural high school to test their adequacy in teaching. Fourth, the results were **disseminated**. An overview of the four parts is given in section 5.2 (*Research design*).

The impulse for this master‘s thesis was given by an FWF (Austrian Science Foundation) funded research project „Organic Farmers‘ Experiments – Learning Local Knowledge in Austria, Cuba and Israel” conducted from 2006 to 2010 (Homepage: Organic Farmers' Experiments). The research project offered a rich pool of literature on the topic of „Farmers‘ Experiments‘, which I studied and elaborated for the present thesis. Additionally a selection of research questions was originated from the project. Elements of the survey questionnaire used during the two farmers‘ video workshops were originally designed for the investigation in Kummer‘s (2011) doctoral thesis „Organic farmers‘ experiments in Austria – Learning processes and resilience building in farmers‘ own experimentation activities”. The survey questionnaire was modified and adapted in agreement with the author. As a result of this approach, parts of this work are comparable with the results of Kummer‘s project.

The Working Group „Knowledge Systems and Innovations, Division of Organic Farming, University of Natural Resources and Life Sciences, Vienna‘, funded the video equipment needed for the PV recording. Additionally a scholarship for Master‘s students offered by the University of Natural Resources and Life Sciences, Vienna supported the research project financially. My supervisors (Christian Vogl, Susanne Kummer) and I jointly developed the methodological approach of the present work. The methodology was discussed and written down in the first concept of the present thesis.

Data for the realisation of the PV recording (see section 5.3) was mainly collected via participant observation and semi-structured interviews with the participating farmers at their farms. I conducted the semi-structured interviews during the video recording, most of the time alone. While shooting the videos, I was assisted by two camera operators (Eva Laber and Martina Grabowski). Each of them was personally trained beforehand and assisted at two out of the four video shootings. The camera operators besides filming, observed the situation, took pictures and provided additional questions to the participants if appropriate. After the shootings we discussed our observations and gave feedback to each other. This procedure enriched my research and helped me to improve my skills regarding the realisation of the PV recording in general, and especially my interviewing skills in particular.

During the farmers‘ video workshops (see section 5.4), data was collected via a survey questionnaire filled in by the farmers participating. Additionally, notes were taken during the group discussions by my assistant Eva Laber (second workshop) and by myself (first workshop). The workshops themselves were organised in collaboration with Bio Austria Styria. During the first workshop, my supervisors assisted me in the organisation and moderation of the workshop, while during the second workshop my assistant undertook this tasks.

I collected, in agreement with the school‘s administrator, the data for the students‘ video lesson (see section 5.5) on farmers‘ experiments during a two-week teaching internship at the LFz Raumberg/Gumpenstein *(Styrian agricultural education and research centre*). The survey questionnaires were filled in by the students themselves after watching two of the four videos elaborated during the video recording.

I regularly exchanged research experiences with my Master‘s colleagues in informal and formal meetings („Graduands Support Group‘ at the university). Supervision of the research

process by my supervisors took place at regular face-to-face meetings, with written feedback and reports during the entire research process.

The results of the research project were widely disseminated via various channels (e.g. YouTube, newspapers, homepages) and in various forms (e.g. videos, articles, folder). A detailed description of the dissemination of the results can be found in section 6.4.

5.1 Research site

The research project building the basis for this master's thesis was conducted in Austria. Austria is located in central Europe, and has about 8.4 million inhabitants in an area of about 83,000 km^2. The Alps dominate the Austrian landscape; about 60% of the land is mountainous. At present there are 187,000 farms in Austria. With an average farm size of about 19 ha, Austria is among the agriculturally smaller-structured countries in the European Union (BMLFUW, 2010).

Austria has a long history of organic farming. The first organic farm was established in 1927, managed according to the methods of Rudolf Steiner, an Austrian researcher and philosopher (bio-dynamic agriculture). Austria was the first country worldwide setting official guidelines on organic farming. In 1983 the Federal Ministry of Health and Environmental Protection issued the first decrees, followed by their inclusion as Chapter A 8 in the Codex Alimentarius Austriacus (Austrian food codex). In 1991 Austria was the first nation to adopt provisions for the organic production of animal products. Between 1990 and 1994, the number of organic farms increased more than eight-fold, encouraged by European subsidies and the engagement of supermarket chains in the organic food trade, reaching its peak in 1999 with about 20,316 farms (14% of total). The remarkable development of organic farming in Austria was also expressed in the establishment of an Austrian organic farmers' organisation (Bio Austria). Currently Bio Austria has approximately 13,000 members (BMLFUW, 2009).

Despite the growth in number of organic farms with, some 20,000 farms at a plateau since 1999, the growth in area of organically managed land is still increasing (Figure 3). Currently about 16% (157,530 ha) of the utilised agricultural area is managed according to organic farming criteria. Therefore, in relative terms, Austria ranks first among the EU countries (BMLFUW, 2009).

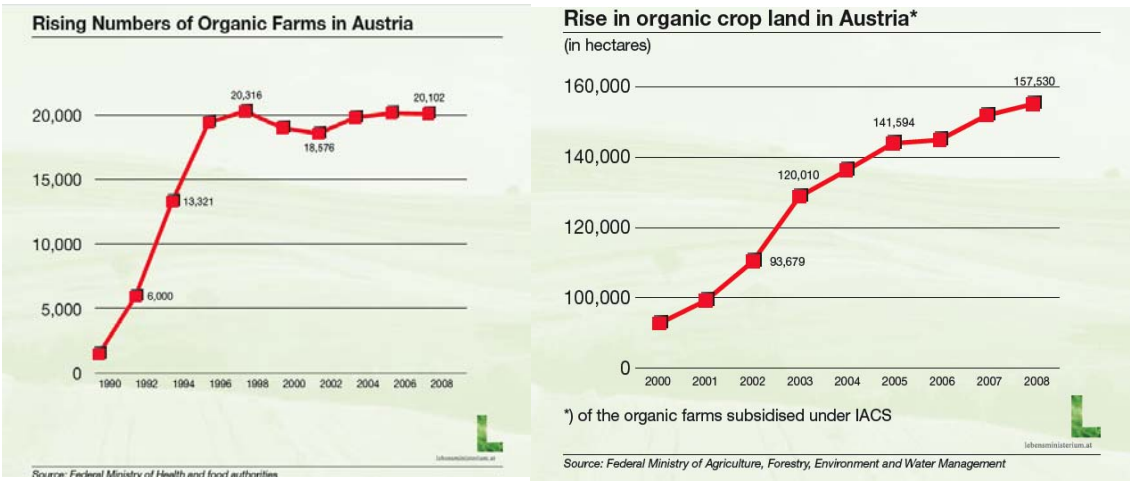


Figure 3: Number of organic farms in Austria between 1990 and 2008 (left); hectares managed organically in Austria between 2000 and 2008 (right) (BMLFUW, 2008)

Austria with its long history of organic farming and high share of organic farmers offered excellent preconditions for the conducted research project. The video recording took place in four different communities in the provinces of Tyrol and Vorarlberg, indicated by the blue marks (Figure 4). The two farmers‘ video workshops were held in the district of Judenburg indicated by the orange circle. Two of the four videos were presented in the students‘ video lesson at the LFz Raumberg/Gumpenstein located in the district of Liezen, indicated by the red mark. A detailed description of the research sites is given in the sections 5.3.1, 5.4.1 and 5.5.1 (Figure 4).

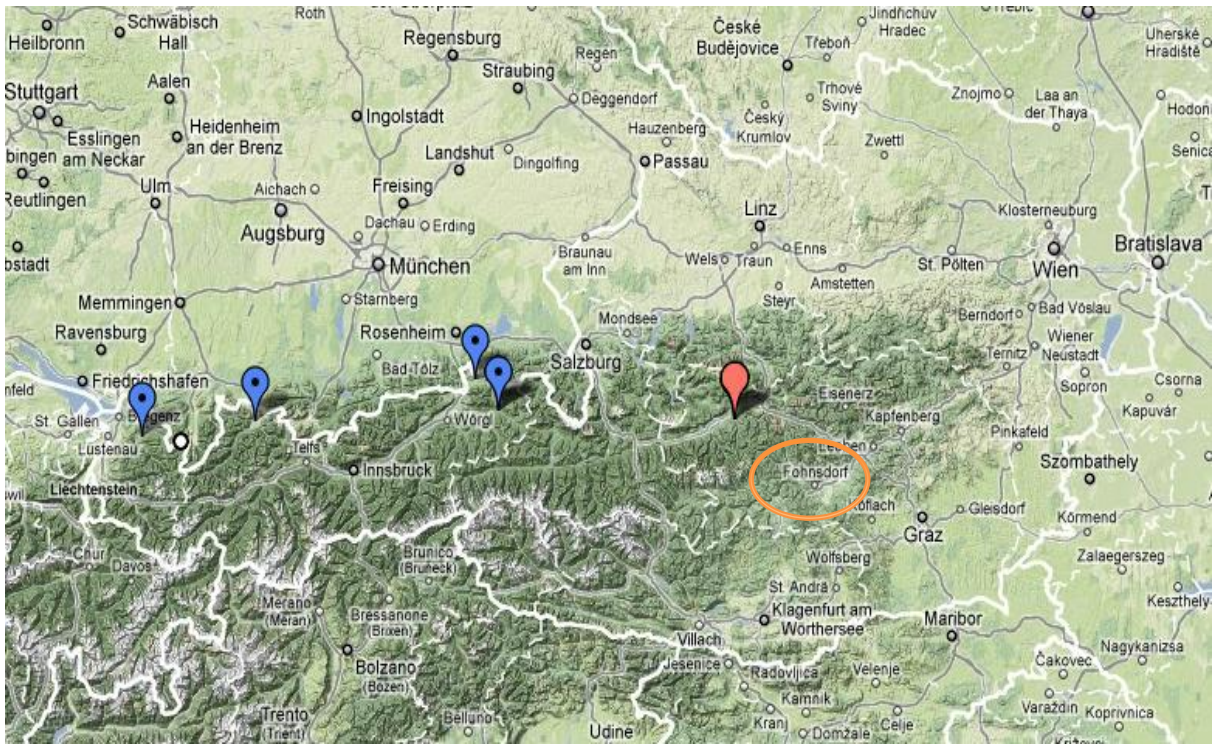


Figure 4: Localisation of farmers participating in the video recording (blue); the region of the farmers' video workshops (orange circle); the school the lesson was held (red)
(Source: Google maps, modified)

5.2 Research design

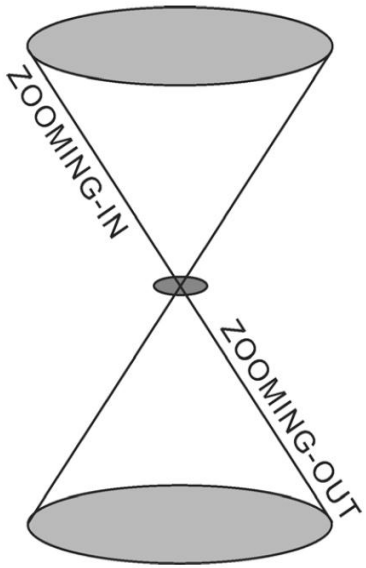
Table 3: Overview of the different phases of the field research in the course of the study

Phase of the field research	Aim	Method	Time period
Literature research	Research of literature on the state of the art regarding the present topic	Literature research in relevant libraries and literature databases	May-August 2010
Preparation of the video recording	Preparation for the video recording in terms of: • Studying relevant methods • Getting familiar with the equipment • Hiring and training camera operators	Organising the framework of the video recording by using tools of project management	July-August 2010
First phase of the video recording	• Select farmers for the video recording • Build rapport with the farmers selected	• Personal discussion about video recording process with potential farmers • Farm walks to identify and pre-select potential farmer‘ experiments. (Participant observation, unstructured interviews)	June-September 2010
Second Phase of the video recording	Elaboration of the videos	Shooting of the videos by applying methods of PV	September-October 2010
		Cutting the footage	October 2010-Februray 2011
Third Phase of the video recording	• Elaborate a questionnaire to evaluate the elaborated videos and the video recording process. • Evaluate the videos and the video recording process by the six farmers participating	• Feedback of experts on questionnaires • Six surveys via survey questionnaire including participant observation to evaluate the video recording	March 2011
Preparation of the farmers‘ video workshops	• Select working groups • Elaborate and discuss the concept of the workshops • Elaborate and pre-test the questionnaire	• Discussion with experts on the schedule of the workshops and the structured questionnaire • Test survey questionnaire with two farmers	April-May 2011

Realisation of the farmers‘ video workshops	• Realise two video workshops with two organic working groups of organic farmers	• 34 surveys via survey questionnaire with organic farmers • Group discussions	May 2011
Preparation of a students‘ video lesson on farmers‘ experiments for agricultural students	• Elaborate the schedule and materials for the lesson • Elaborate the questionnaire	Questionnaire based on the questionnaire used for the evaluation of the videos and video recording process	April 2011
Realisation of the students‘ video lesson on farmers‘ experiments.	• Give a lesson on farmers‘ experiments • Evaluate the videos as educational resources	16 surveys via survey questionnaire with students of a agricultural high school	April 2011
Involvement of interviewees and other stakeholders in the research process and dissemination of results to the interested public	Give interviewees and members of the Austrian organic movement the possibility to get involved in and discuss the research process	Videos and photos given to the farmers participating in the video recording process	March 2011
		Presentation of one of the final videos at a conference of organic movement members	March 2011
		Digital copies of the videos given to advisors for organic farming	May 2011
		Publication of the videos on YouTube	June 2011
		Articles published at homepages and magazines concerned with organic farming and sustainable lifestyle	July-December 2011
		DVD production and launching a homepage about the research project (http://www.biobaeuerlicheversuche.org)	February 2012
		Folder including short research report, plus links to the videos send to the farmers participating during the video recording and farmers‘ video workshops	February 2012
		Presentation of one of the videos at a conference for organic farmers	February 2012

The applied research design can be summarised by comparing it with the ‚zooming-in zooming-out' approach for disseminating sustainable innovations developed by Van Mele (2006) (Table 4).

Table 4: Comparing the research design applied during the course of the research project underlying the thesis to the 'zooming-in zooming-out' approach for disseminating sustainable innovations (Van Mele, 2006, modified)



	Theoretical framework ‚zooming-in zooming-out' approach Van Mele (2006)	**Applied research approach**
	Identifying generic topic of regional relevance	Identifying experimenting farmers conducting innovative experiments.
	Learn about context diversity & conduct participatory research	Visiting pre-selected farmers to specify the farmers' experiments to be selected. Shooting of the scripted PV.
	Develop video programmes with local actors	Development of the videos in collaboration with the participating farmers.
	Test programmes in various contexts & fine-tune them	Testing of the farmer-to-farmer videos in various contexts to fine-tune them.
	Scale-up and scale-out	Application of the videos in participatory workshops. Making the videos available on various platforms.

5.3 Video recording

A scripted PV approach adapted to the conditions of the research was used. Four PVs were developed jointly with Austrian organic farmers, each showing exemplarily one of their experiments. This approach was chosen to unveil the experimentation process that built an experiment foundation. To do so, farmers answered questions concerning their understanding of farmers‘ experiments, revealed their motivation to do experiments, and presented one prototypical experiment per farm in detail. After presenting, the farmers participating in the video recording the finished videos, the videos and the video recording process itself were evaluated by them via survey questionnaire. The final videos aim to enable farmers watching the videos to start experimenting on their own (see section 6.1).

5.3.1 Research site

The PV recording took place in two western provinces of Austria, three organic farms being located in Tyrol and one in Vorarlberg (Table 5). A detailed description of the organic farmers participating in the video recording is given in section 5.3.2.

Table 5: Overview of locations for the PV recording (Sources: webpages of the communities)

Community	District	Province	Altitude a.s.l	Precipitation
St. Johann i. T.	Kitzbühel	Tyrol	659 m	1,400 mm
Rettenschöss	Kufstein	Tyrol	680 m	950 mm
Höfen	Reutte	Tyrol	868 m	1,350 mm
Andelsbuch	Bregenz	Vorarlberg	613 m	2,000 mm

5.3.2 Sample design and selection criteria

For the PV recording a purposive sample was used (Bernard, 2006, pp. 189). The main selection criteria for the video recording were:

1. Farm certified organic;
2. Farmer(s) doing exemplary farmers‘ experiments;
3. Farmer(s)‘ motivation to take part in the video recording;
4. Farms located in mountainous regions of Austria.

First organic farmers recommended by my supervisors, by representatives of the Austrian organic farmers‘ movement (e.g. organic advisors), and by other organic farmers were listed and categorised into six groups. Each group represented one possible area in which farmers‘ experiments were being conducted. In these groups the farmers were ranked to get a clear strategic order for the further selection process (pre-selection). All of the farmers were known for conducting exemplary experiments at their farms. The organic farmers promised to provide examples for farmers‘ experiments suitable for the planned videos. The final list contained contact addresses and general information on 42 organic farms. I took care that the farmers, their farms and the experiments they were conducting showed a maximum variation to guarantee a diversity of videos as outcome of the video recording.

Geographically the selection focused on farms located in mountainous regions of Austria. On the one hand this criterion made it possible to easily use the resulting videos in presentations to groups of farmers in Judenburg, a district located in a mountainous region of Austria. On the other, the criterion was chosen to take into account my personal interest in alpine agriculture.

Four of the six top ranked farmers were contacted via telephone to arrange a personal visit to their farm. Four of the contacted farmers were interested in a personal meeting to discuss the PV recording approach. The motivation of the farmers was personally assessed during the meeting. After the meetings, three farms represented by four farmers (two individual

farmers and one couple) agreed to take part in the video recording. In one case the farmer refused to participate for personal reasons, and a suitable alternative had to be found.

Finally four videos were made, with six organic farmers being involved. In two cases videoing was conducted with a farming couple (Table 6).

Table 6: Characteristics of the farmers participating in the PV recording (n=6)

Characteristics	Anna and Johannes Rass	Silvia &Thomas Kappeler	Anton Fahringer (Junior)	Kaspanze Simma
Gender	Female and male	Female and male	Male	Male
Age	40-50 years	30-40 years	20-30 years	50-60 years
Location	St. Johann in Tyrol	Höfen in Tyrol	Rettenschöss in Tyrol	Andelsbuch in Vorarlberg
Farm land in hectare	26 ha	23 ha	110 ha	13 ha
Number of animals	- 15 cattle; - 15 chickens.	- 24 cattle; - 20 chicken; - 6 donkeys; - 3 goats.	- 55 cattle; - 15 pigs.	- 8 cattle; - 5 chicken; - 2 horses; - 2 sheep; - 1 colony of honeybees.
Main emphasis of farm	Suckling cows	- Suckling cows; - Holidays on farms; - School on farms.	- Dairy farming; - Pig fattening; - Processing and direct marketing of agricultural food products; - Forestry.	- Dairy farming; - Suckling cows; - Processing and direct marketing of agricultural food products; - Forestry.
Farm operation type	Part-time	Part-time	Full-time	Full-time
Field of experimentation	Livestock–Pasture management	Farm concept	Livestock–Housing	Plant production–Fertilisation

5.3.3 Farmers as co-researchers

The participation of the farmers was crucial, and the farmers were recognised as co-researchers and partners in the research project in terms of knowledge generation, knowledge sharing and knowledge transfer. Participatory decision-making, participatory design of the video recording itself and a participatory farmer-centred elaboration of the messages was shown in the final videos.

The farmers were introduced to the storyboard technique (see section 5.3.5.6). The technique enabled them to communicate their ideas concerning the video‘s focus and message with drawings and notes written next to them. Two of the six participating farmers choose the storyboard technique to present, discuss and further elaborate their ideas of how to present their farmers‘ experiment. Two of the six collected their ideas only as written notes before the day of shooting. One farmer spontaneously structured his collected thoughts in the form of written notes only during the discussion directly before the shooting. The remaining farmer avoided written notes altogether and preferred to demonstrate the process of farmer‘s experimentation by showing the process in action.

Each farmer elaborated a clear idea of how to present his/her/their experiment. The ways the ideas were elaborated and communicated were diverse but always resulted in a strong commitment of the farmers during the whole video recording, were all farmers present at each of the farms being videoed during the four video shootings. The ideas created by the farmers served mainly as trigger and were further elaborated and differentiated during the recording of each video. During recording, the interaction between the farmers and the video team enabled the generation of further ideas.

5.3.4 Schedule

The making of the PVs (Table 7) took from August 2010 to March 2011. From August till October the videos were shot and then edited from October 2010 to March 2011. The participating farmers evaluated the videos in March 2011.

After the pre-selection of the farmers (see section 5.3.2) they were first contacted by phone to ask them regarding their general interest to take part in recording a video organised as a PV project. The phone calls to establish first contact were carefully planned beforehand. After a personal introduction the research project was shortly described. The farmers were given information about the context of the research, its aims, the opportunities it offers and the process they had to go through. I carefully noted information about farmers‘ experiments conducted by the farmers. Then the farmers were asked for their interest in a personal meeting at their farms to discuss further details. If the farmer was interested an appointment was made. Directly after the phone call the information collected and first impressions were written down to ensure good preparation for the up-coming personal meeting.

During the first personal meeting, the video recording was explained in detail. Especially the participatory character of the video recording was highlighted. Directly afterwards I asked each farmer to go on a farm walk (see section 5.3.5.2) with me. During these walks I was able to get first impressions of the farmers, their farms and potential farmers‘ experiments they conducted. Apart from facts stated by the farmers, I also could get a good impression of the farmers‘ areas of interest and personality. This was particular important in terms of the collaboration during the video shootings.

After the walk I sat down with the farmer to detect experiments to be selected for the video recording. Then I showed the farmers a short piece of a video showing an example of a similar video project conducted in Switzerland to give them a first impression of the possible outcome of the research project.

The farmers were given a short introduction on how to make a video. The introduction disclosed central elements of the techniques used and also the methodology for recording a

video. This step aimed to empower the participating farmers by using the video recordings‘ participative character.

The video camera was demonstrated to them to make the farmers familiar with the equipment, and the storyboard technique was explained to the farmers as a possibility to present their ideas for the video directly before the video shooting. Afterwards a survey questionnaire was handed out that aimed to collect their socio-demographic data. Finally the date of the shooting was fixed.

Before the shootings took place the equipment needed was organised and studied, the script and schedule for the shootings plus a semi-structured interview guide were elaborated, and two camera operators were trained on the equipment to be used.

Shootings were always conducted according the same work-flow pattern and guided by a set of prepared questions (semi-structured interview guide). Before starting the shooting, I asked the farmers for written permission to use the video and photo material for public presentations. The work-flow and the set of questions provided the framework for the shootings, while the ideas expressed by the farmers defined the videos in detail. The farmers‘ ideas were crucial for the success of the research project, especially also in the sense of meaningful participation. Their ideas were taken into account during every step taken while the recording. The camera operators and I took the role of facilitators in a predefined process that was brought to life by the farmers‘ personalities and innovative ideas. The shooting therefore was a process of interaction with the participating farmers, the camera operators and me. Regular screening of the collected footage gave the farmers control over the process and fostered their engagement. The screenings also served as feedback for the participants in terms of their performance.

After the shooting was completed the footage was edited. During this process, drafts of the videos were presented to Master‘s and Doctoral students in two workshops. The feedback collected was used for further improvement of the videos‘ drafts before presenting them to the farmers for final evaluation.

The last step of the video recording was the evaluation of the videos and the video recording process by the participating farmers. For this, the farmers were personally visited to present to them the outcome of the video recording. After watching their own video, they were asked to evaluate it and to state if changes should be made. After evaluation of their own video, the other videos, too, were shown to them to share the captured knowledge of farmers‘ experiments. Afterwards the farmers were asked to evaluate the video recording process as a whole. Finally the farmers were given a memento of the collaboration, and a predetermined sum of money for the working hours they had missed because of taking part in the video recording.

Table 7: Major features of the PV recording (Chowdhury et al., 2010, modified)

Feature of style	
Topic	Documenting organic farmers‘ experiments, disclosing the research process in their experimentation activities
Content identification	The different farmers‘ experiments were identified through discussion leading to consensus
Script development	Exposé (pre-stage script) developed by myself and completed by the farmers‘ ideas of how to show their experiments
Camcorder operation	Camcorder was handled by trained camera operators
Selection of rough video clips	Clips were selected by myself based on the structure of the exposé and the ideas presented by the farmers
Draft editing	Draft editing was done by myself
Validation of the final editing	Draft video was shown to the farmers to validate the messages(s)
Video shows/ final broadcast	Organised by myself in agreement with the participating farmers

5.3.5 Data collection

To perform the PV recording a set of methods was necessary. The methods used are described below.

5.3.5.1 Participant observation

"Participant Observation is both a humanistic method and a scientific one. It produces the kind of experiential knowledge that lets you talk convincingly, about what it feels like to plant a garden in the high Andes or to dance all night in a street rave in Seattle" (Bernard, 2006, p. 342).

Participant observation therefore involved getting close to the farmers and making them comfortable with my presence. The method allowed observing and recording information about the farmers' lives (Bernard, 2006, p. 342).

Participant observation was done before (first visit), during and after (presentation and evaluation) the shootings of the scripted PVs and therefore was an integral part of the video recording process. Participant observation helped me to detect settings before and during the shootings and to familiarise with the farmers and their farms. Participatory observation was a necessary tool to deepen my understanding of the process of the farmers' experimentation activities, but also to experience the farmers' reactions when they first watched the videos. Above all, participant observation helped to establish rapport (Bernard, 2006, p. 342). Participant observation allowed me to make learning experiences and at the same time helped me to explore the wider context of my study. For example, it helped me to truly understand how a wooden calf igloo is constructed. These experiences helped in completing the final videos by supporting a better understanding of the farmers' ideas. Therefore this tool was additionally important to guarantee the quality but also the authenticity of the final videos.

5.3.5.2 Farm walks

This method can be understood as a modification of the transect walk (Henman and Chambers, 2001). In the case of a transect walk, the researcher walks guided by a skilled local along a predefined transect to be able to describe a specific location by its given resources features and land use. While during a farm walk as I applied it, the researcher walks along the farm guided by the farmer(s) to get a deeper understanding of the farms conditions, to be able to identify farmers' experimentation activities.

Farm walks were conducted during the first visit at the farms as means to enable me to identify farmers' experiments suitable for the video recording. Also this method enabled me to get acquainted with the farm environment, which helped me to prepare properly for the shootings. Based on the farm walks for each farm an observation protocol was elaborated directly after the visits. The observation protocol enabled me to give the camera operators (which could not visit the farms before the actual shootings) information to get familiar with the farms, their farmers and the farmers' experiments.
The farm walk was done usually directly after I introduced the research project and myself and took between one and two hours each. During the farm walk I followed the farmer, openly observed the surroundings and asked for explanations for everything that called my attention. The farm walk was an essential tool not only for identifying the experiments finally selected for the video recording but also to build rapport with the farmers.

5.3.5.3 Unstructured interviewing

Unstructured interviews were part of the whole PV recording process. They were conducted during the first phone calls to establish initial rapport, the first visits at the farms (e.g. farm walks) and also during the shootings and the final evaluation of the video recording by the participating farmers. Again this tool was used not only to build rapport and to better understand the context of the study but also to clarify doubts and to gain insight into the process of farmers‘ experimentation activities. Unstructured interviewing enabled me to communicate freely with the farmers and therefore was an essential tool for supporting the collaboration between the farmers and me during the video recording (Bernard, 2006, pp. 213).

5.3.5.4 Semi-structured interviewing

A semi-structured interview guide was used during the video shootings. The interview conducted firstly aimed to get information about the farmer and his/her farm, went further to ask for context information on the experimentation activities carried out at the farm. Afterwards questions on the process the farmer went through by performing the selected farmers‘ experiment followed, to conclude with questions dedicated to make the farmer explain their experiment in detail. Finally the farmer was asked to state one question he/she/they would like to be answered by science.

The semi-structured interview guide served as the framework for the video shootings and was in tune with the elaborated exposé and the shooting schedule. The interview guide made it possible to realise the final videos in an easy reproducible and recognisable format. The semi-structured interview guide can also be seen as a compromise between high participation by the farmers and the structure needed to shoot each video during one working day. The interview guide allowed the farmers to focus more on how they wanted to present their message and not be disturbed by the need to plan the structure of the final video (Kruse, 2008; Bernard, 2006, pp. 210; Newing, 2011a).

Additionally semi-structured interviews with the farmers participating in the video recording were conducted after the video shooting, in the course of a bachelor thesis (Mayer, 2011) I conducted for a bachelor of education. The used interview guide was aimed to explore the farmers‘ motivation to participate in the video recording, and also the competences they could activate and reinforce during the video recording (see section 6.1.1 and 6.1.2).

5.3.5.5 Structured surveys

Structured survey questionnaires were used to enable the farmers to evaluate the final videos but also the process of the PV recording. After the farmers watched their video they were asked to evaluate it according to a prearranged set of criteria (Bernard, 2006, pp. 251). A Likert scale with four possible answers was given where the farmers could choose between very satisfied, satisfied, not that satisfied and not satisfied. Also open space was given to the farmers to note any kind of change they want to be applied on their video. In addition, the farmers could freely express all other statements concerning the video.

After the farmers were shown the other three videos created during the video recording, they had the chance to evaluate the individual elements of the video recording process itself. Again the same Likert scale was used and open space was given for remarks.

Finally the farmers had to express their level of agreement or disagreement with a set of predefined statements concerning the video recording. Again a 4-point-Likert Scale was given where the farmers could choose between strongly agree, agree, do not quite agree and do not agree at all. The farmers themselves filled in the questionnaire in my presence. This measurement reduced my influence on the final results. If a clarification was needed, I assisted the farmers (Bernard, 2006, pp. 251; Raab-Steiner and Benesch, 2010).

5.3.5.6 Storyboard technique

A modified version of the storyboard technique as described by Lunch and Lunch (2006, pp. 28) was used to give the participating farmers control over the messages they wanted to be delivered by the final videos.

Therefore I explained the storyboard technique to the farmers during the first personal meeting after selecting the farmers' experiment for the final videos. I gave them an already accomplished storyboard as example and additionally sheets with predefined boxes to perform their own storyboard. The farmers were asked to elaborate their story by drawing it into the boxes and by adding instructions for the approaching shooting (Figure 5).

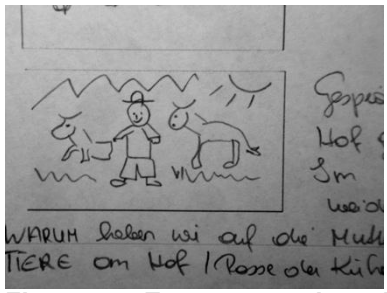


Figure 5: Extract storyboard elaborated by a participating farmer (Mayer 2010)

Even if only one couple definitely completed their storyboard, the method made the participating farmers aware of their active participation during the video recording (see section 5.3.3). The storyboard technique opened the way for meaningful participation, gave the farmers control over their message and gave at least one farmer the chance to express her ideas with pictures (Lunch and Lunch, 2006, p. 28).

5.3.5.7 Disappearing game

A modified version of the disappearing game was applied during two of the four shootings. The disappearing game enables the whole family to engage with the PV recording.

After the method was explained to the members of the family they were asked to stand still like posing for a photograph. Then the scene was recorded for three seconds. After stopping the recording one family member left, while the others stood still. Again the scene was recorded for three seconds. This procedure went on until the last member left, while after him/her the empty space was filmed for five seconds. The footage was shown to the family directly afterwards by playing it forward and backward.

The method showed the participants the power of video but at the very same time brought release by making the participants laugh (Lunch and Lunch, 2006, p.26). The disappearing game turned out to be a good start for an intensive day of shooting and as a result brought special effects to the final videos.

> *"The advantages of the disappearing game: its good fun […]. It shows the magic of video and its ability to manipulate time and play with reality. (Lunch & Lunch, 2006, p.26)"*

5.3.6 Data processing and analysis

The footage of the PV recording was first saved on mini DV tapes and then transferred to an external hard disk for further analysis (Lunch and Lunch, 2006). Final Cut Pro was used as the editing software. While editing the material, I was careful to clarify but not manipulate the messages stated by the participating farmers. The farmers' ideas expressed via storyboard technique, available as notes or expressed verbally, were taken into account in the sense of the meaningful participative character of the video recording.

The data collected during the evaluation of the videos and the video recording process was processed in Excel to be analysed with the methods of descriptive statistics (Bühl, 2010; Raab-Steiner and Benesch, 2010). Written remarks made by the farmers on the survey questionnaires were collected in a World-File and afterwards served to enrich the results.

Data from the semi-structured interviews done for a bachelor thesis (Mayer, 2011) in the framework of this research project was also used. The semi-structured interviews were transcribed with the software ExpressScribe and analysed by using qualitative content analysis.

5.4 Farmers' video workshops

The farmers' video workshops mainly aimed at testing the videos' feasibility to stimulate future farmers' experiments under participating organic farmers (see section 6.2).

5.4.1 Research site

5.4.1.1 Selection research site

The district of Judenburg offered optimal preconditions for the two farmers' video workshops with its superior share of organic farmers (about 19%) and its organic farmers organised in two active working groups. By cooperating with the heads of the working groups and the Styrian organic farmers' organisation (Bio Austria Steiermark) it was possible to reach a reasonable group of interested organic farmers and to use the local facilities required to carry out the workshops. Judenburg was also an area I knew well and required limited funding for travel costs.

5.4.1.2 Geography

The district of Judenburg is located in the northwest part of Styria. Its capital is located 737 m above the sea level. Its whole surface is part of the Alps and because of this high share of alpine areas only 21% of its surface area is permanently populated. Judenburg consists of the alpine landscape of the Niederen Tauern' in the north, the Murtal valley formed by its biggest river in its centre, the Judenburger Becken' in the east and finally the Styrian Randgebirge', a formation of mountains in the south. The arithmetic mean of the last nine years annual precipitation was about 780 mm (mean for the years 2000-2008), while its average annual temperature is about 7.7 °C (Das Land Steiermark, 2011).

Judenburg comprises 24 communities (Figure 6), its surface area of 1,097 km^2 is populated by 44,983 inhabitants. Judenburg's population makes it the eighth biggest district in Styria, even though with 41 inhabitants per km^2 Judenburg does not have half of Austrians average population density. Alike a number of other Styrian districts, Judenburg faces continuing depopulation (Das Land Steiermark, 2011).

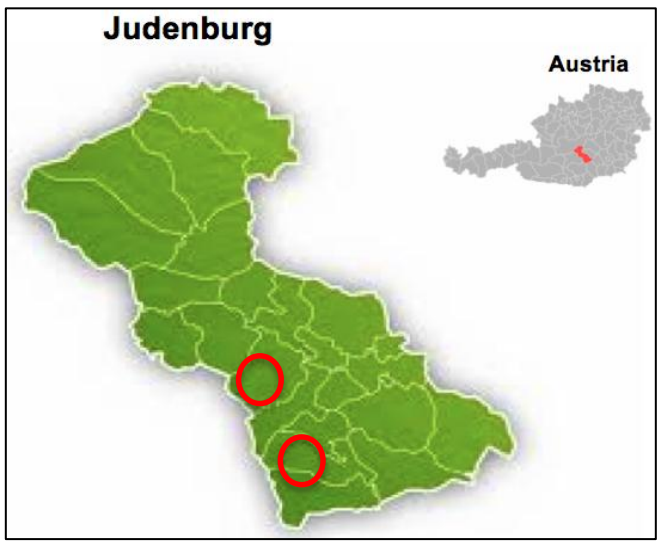


Figure 6: Austria (right upper corner) and the district of Judenburg (left side); red circles indicate the communities where the farmers' video workshops took place (Source: wetter.tv; wikipedia.at, 2011)

5.4.1.3 Agriculture

Altogether 1,365 farms are located in the district of Judenburg, about half of them farming full-time and the other half farming part-time. The number of farms farming full-time is above the Styrian average, which counts only about one third of farms farming full-time (Landwirtschaftskammer Steiermark, 2005). About two third of the farms in Judenburg are located in less favoured areas. About 38% of the farms are less than 20 hectares, whereas about 46% are found between 20 and 99 hectares and only 16% include more than 100 hectares of agricultural land (Figure 7) (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

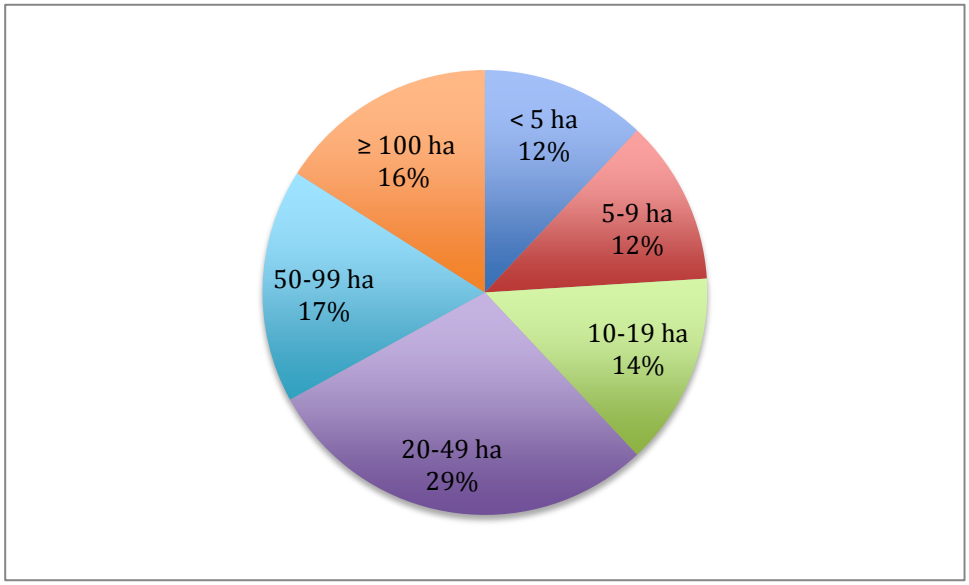


Figure 7: Percentage (100%=1,365) of farms in the district of Judenburg according to the predefined categories of managed agricultural area (Source: districts agricultural advisory organisation, 2009, own figure)

Wheat, rye, triticale barley and oats are grown by the farmers in this district. Next to grain also maize, potatoes, field beans and peas are cultivated (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

2009 about 25,200 cattle were kept in Judenburg, a number that was rising up compared to 2007 where the number was about 18,600. Pigs are the second most common domestic species with about 3,800 individuals. About 1,400 sheep and 400 goats were kept. Horse keeping also plays an important role with about 580 horses in 2009 (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

Located in the district of Judenburg, 23 of farms officially provide holidays services on farms and 188 farms are engaged in direct marketing activities. Three frequently held farmers‘ markets are established in the district (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

5.4.1.4 Organic farming

Altogether 261 farms in Judenburg are certified organic farms. With approximately 19% of farms managed according to organic criteria, Judenburg is located above the Styrian (14%) but also the Austrian average (15%). 223 of the farms are members of Bio Austria and organised into two local working groups (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

The total area managed organically is 6,069 ha, which consists of 675 hectares of arable land and 5,394 hectares of green fields. The local dairy (Obersteirische Molkerei) collects presently 24.2 million litres of organic milk, which is about 14% of the milk collected in total. Just the community of Obdach serves 20% of the whole organic share that is collected. Good conditions to market organic beef meat are given. The largest quantities are sold via the Styrian beef producers‘ society (Erzeugergemeinshaft Steirisches Rind) (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

The districts of Murau and Knittelfeld, two other districts with a share of organic farms above the national average, are located close hand and form an organic friendly environment (Bezirkskammer für Land- und Forstwirtschaft Judenburg, 2009).

5.4.2 Sample design and selection criteria

The sample for the two farmers‘ video workshops was a purposive one (Bernard, 2006, pp. 189) (Table 8). The presumption was to assess the videos' power as a trigger for organic farmers‘ experiments in an environment most promising for their application. Therefore the two active organic farmers‘ working groups located in the mountainous district of Judenburg were chosen to participate in the workshops.

Table 8: Characteristics of the organic farmers participating in the farmers’ video workshops (n=34)

Characteristics	Description	f	%	total f	total %
Gender	Female	11	32%	34	100%
	Male	23	68%		
Age	20-30	1	2.9%	34	100%
	31-40	3	8.8%		
	41-50	13	38.2%		
	51-60	8	23.5%		
	61-70	7	20.6%		
	71-80	1	2.9%		
	No answer	1	2.9%		
Grown up at farm	Yes	28	82.4%	34	100%
	No	6	17.6%		
Year of conversion to organic farming	Before 1994	19	55.9%	34	100%
	After 1994	15	44.1%		
Agricultural education	Yes	20	58.8%	34	100%
	No	14	41.2%		
Farm operation type	Full-time	17	50%	34	100%
	Part-time	17	50%		
Total farmed land	10-20 ha	2	5.9%	34	100%
	21-30 ha	7	20.6%		
	31-50 ha	12	35.3%		
	51- 100 ha	9	26.5%		
	> 100 ha	4	11.8%		

5.4.3 Schedules

5.4.3.1 First video workshop

Two weeks before the farmers‘ video workshop an invitation letter by the organisation of Bio Austria Styria was sent to the members of the organic farmers‘ working group Obdach.

The workshop took place on May 6th 2011 from 19:30 to 21:35 at the restaurant Meier-Zeilinger in Obdach. Altogether 17 persons participated in the workshop. Of them 10 participants were organic farmers, farming in the district of Judenburg (Figure 8).

Figure 8: Setting of the first workshop in Obdach at the restaurant Meier-Zeilinger (Mayer 2011)

After a short welcome speech given by the host and head of the local working group Obdach Franz Richter, Susanne Kummer and I jointly presented the research project. Special care was taken on the definition of the term farmers‘ experiments‘ as the main concept utilised during the evening.

Before the videos were presented the participants were expected to fill in the first part of a survey questionnaire (see section 5.5.4.1).

This was followed by presenting the four videos about farmers‘ experiments in Austria. Next the participants were asked to form pairs to discuss a set of pre-elaborated questions (see section 5.5.4.2).

The pair discussion was followed by a group discussion (see section 5.5.4.3) moderated by Susanne Kummer. During this part of the workshop the questions examined earlier in pairs were discussed among the audience to enable the exchange of the generated knowledge. During the discussion it was shown that it was hard to keep the audience on track. There was much input given by the videos themselves that showed its need to be discussed openly and therefore the second stated question could barely be touched. In continuation the farmers had to fill in the second part of the survey questionnaire (see section 5.5.4.1).

The workshop was ended in the concluding words of Franz Richter as a representative of the working group; Herbert Kain as a representative of the Bio Ernte Styria and Christian Vogl representing organic research. Followed by a lottery where participants who completed the two parts of the questionnaire correctly had the chance to win a culinary package. Finally an organic buffet was opened that served local specialities and organic juices and wines for the participants.

5.4.3.2 Second video workshop

Similarly to first workshop, two weeks before the farmers' video workshop an invitation letter by the organisation of Bio Austria Styria was sent to the members of the organic farmers' working group Judenburg. In addition, a pre-selected group of farmers was personally invited and asked to remind other organic farms of the future event. This measure was taken based on the experiences of the first workshop where many farmers stated that they would have forgotten the workshop (even if they were interested) if somebody would not have reminded them to come.

Altogether 26 persons participated in the video workshop. Because 24 of the participants were organic farmers farming in the district of Judenburg, the number of research-relevant workshop participants was more than doubled in comparison to the first farmers' video workshop.

The second workshop took place in May 13th 2011 at 19:30 to 21:35 at the restaurant Stockinger in Furth (Figure 9).

The schedule of the workshop was kept exactly the same to enable the joint analysis of the two workshops' data. Building on the experience gained during the first workshop I was able to moderate the event by myself, assisted by a former study colleague Eva Laber.

The host of the second workshop was Höden Hans, the head of the working group of Judenburg, who opened and closed the evening.

Figure 9: Setting of the second workshop in Furth at the restaurant Stockinger (Mayer 2011)

5.4.4 Data collection

5.4.4.1 Structured surveys

Before the farmers started to fill in the first part of the structured survey questionnaire they were given a short introduction on the research project and were familiarised with the term experimentation by its definition based on findings of the research done by Kummer (2011). The definition was presented by the moderator of the farmers‘ video workshop but it was also integrated in the questionnaire directly before the first question to be answered by the farmers. The following definition was used:

„If we use the terms trial, test or experiment here, we refer to how YOU asses and test, if and how something works or is suitable for your farm. We do not refer to a scientific procedure, but to practical trials conducted on organic farms. What you try or test can be your own idea or something you saw or heard about, a change that you implement, etc.'

After the introduction the farmers were asked directly if they conducted experiments. The farmers were given the advice to go once again through the stated definition and a list of possible areas of farmers‘ experimentation activities, which could be found directly above the stated question. Afterwards the farmers were asked to list the experiments they had conducted so far according to a predefined list of possible areas of experimentation (thematic clusters) based on the findings of Kummer (2011).

After selecting the area of experimentation the farmers were asked to include examples about experiments they conducted. After this exercise the farmers were asked for the frequency they conduct experiments at their farm by offering them three predefined answer categories. The farmers stating their agreement or disagreement according 24 statements concerning their attitude to experimenting completed the first part of the questionnaire.

The second part of the questionnaire began with the question of the relevance farmers‘ experiments had for the farmers present. Following question evaluated the impact of the videos by asking *"By watching the videos were you motivated to conduct experiments on your on farm?",* followed by the question *"Did you get ideas for things that you want to try out at your farm in near future by watching the videos and the following discussion?"* Both questions were stated directly and could be answered by a *"Yes"* or *"No"*. If the farmers answered one of the questions in the affirmative, they were asked to list the experiments they want to conduct in near future according the list of predefined areas of farmers‘ experimentations activities also used in the first part of the questionnaire.

Afterwards the farmers were again asked to state their agreement or disagreement with 24 statements concerning their attitude to experimenting. The repeated exercise aimed to explore the impact the videos had on the farmers‘ attitude to experimenting.

Next the farmers were asked to evaluate the shown videos with a list of predefined criteria followed by the possibility to freely remark further statements about the videos. Again the farmers were asked to state their agreement or disagreement with a set of predefined statements about the videos themselves.

Next the farmers were asked to evaluate the farmers‘ video workshop itself by its individual elements. Like before this was followed by a list of statements concerning the workshop where the farmer stated again their level of agreement. Afterwards the farmers were asked to evaluate the workshop as a whole by choosing between the possibilities *"excellent"; "good"; "not that good"* and "*unsatisfying".*

Finally the farmers completed the questionnaire by filling in their socio-demographic data.

5.4.4.2 Pair discussion

After the farmers filled in the first part of the survey questionnaire and saw the videos they were asked to form pairs with their neighbours to discuss the questions:

- *What relevance do farmers' experiments have for you personally at your farm?*
- *Were you motivated by the videos to try things out at your farm?*
    - *What kind of experiments do you want to try at your farm in the future?*

The pairs had 10 minutes to discuss the questions that were projected on a screen. Meanwhile the moderator walked through the room to keep the discussions active and answered questions if needed. First the discussion was aimed to make the farmers think about what relevance farmers' experiments had to them. Secondly the farmers were intended to become more aware about the impact the videos had on them and additionally to share ideas with their neighbours (social learning). This tool was not directly used to collect data but to prepare the ground for the following steps of the workshop.

5.4.4.3 Group discussion

During the group discussion the ideas the farmers created about the beforehand-discussed questions (see section 5.4.4.2) were discussed openly in the group. None of the farmers was forced to make a remark but activated by the moderator asking for comments. The moderator took care to keep the discussion in balance, so that no arguments were overrepresented and no dominators took the discussion as a chance to be on stage. After five minutes the discussion was stopped. Finally the farmers were asked to fill in the second part of the survey questionnaire.

During the first farmers' video workshop I took notes of the discussion, whereas during the second farmers' video workshop my assistant took notes.

5.4.5 Data processing and analysis

The data of the farmers' video workshops was collected via survey questionnaire (Bernard, 2006, pp. 251; Raab-Steiner and Benesch, 2010). Additionally notes on the relevance farmers' experiments had for the farmers present and the impact the videos as a trigger for experimentation activities had on them were taken during the guided discussion. Furthermore the notes served as data deepening the findings from the survey questionnaires.

The data of the survey questionnaires were processed with the statistical software SPSS. The data was analysed applying univariate and bivariate statistics, since univariate statistics allow for a descriptive and inferential analysis, whereas bivariate analysis describes relations between pairs of variables and tests the significance of those relations. The Wilcoxen test was used to test for differences between the farmers' attitudes to experimenting before and after watching the videos. The Chi-Square was applied to gain information about statistically significant associations at a significance level of $p<0,05$. In cases where the sample was smaller than 5, the Fisher's exact test was used instead. Spearman correlations were used to test the significance of bivariate relations also at a significance level of $p<0.05$ (Bernard, 2006, pp. 549, Bühl, 2010, Raab-Stein and Benesch, 2010).

Data from open questions found in the survey questionnaires were transferred to Microsoft Word to be sorted and categorised and to finally classify the findings that had emerged from the data (Newing, 2011b).

5.5 Students' video lesson

The students' video lesson was aimed to evaluate the feasibility of the videos as teaching resource. (Results presented in section 6.3).

5.5.1 Research site

The lesson on farmers' experiments in Austria was conducted at LFz Raumberg/ Gumpenstein, an agricultural high school in the district of Liezen. The school is among the 13 agricultural high schools in Austria and one of the three existing in Styria.

The school's students can choose between three educational programmes which all lead to a general qualification for university entrance. Organic farming as a subject is part of the studies and embedded in the educational programmes for agricultural marketing and management. In these programmes the subject of Organic Farming is represented with two hours a week in the fifth grade. The students' video lesson was conducted in a graduating class. The students visited the third offered educational programme – the three years education for former agricultural colleague students.

5.5.2 Sample design and selection criteria

Purposive sampling was also applied in the students' video lessons. The videos were presented to 16 students of an agricultural graduation class (Bernard, 2006, pp.189) (Table 9).

Table 9: Characteristics of the students participating in the students' video lesson (n =16)

Characteristics	Description	f	%	total f	total %
Gender	Female	5	31.3%	16	100%
	Male	11	68.8%		
Province	Styria	9	56.3%	16	100%
	Carinthia	4	25%		
	Lower Austria	1	6.3%		
	Upper Austria	1	6.3%		
	Vorarlberg	1	6.3%		
Grown up on a farm	Yes	15	93.7%	16	100%
	No	1	6.3%		
Working experience from a farm	Yes	16	100%	16	100%
	No	0	0%		
Future farmer	Yes	11	73.3%	16	100%
	No sure yet	4	26.7%		
	No answer	1	6,3		

5.5.3 Schedule

The students‘ video lesson took place in April 7th, 2011 during a two weeks teaching internship at the agricultural high school LFz Raumberg/Gumpenstein. Permission was given to conduct the research.

First I gave a 10 minutes presentation about the research project. Special care was taken to clearly define the term organic farmers‘ experiments as the main concept of the lesson. Consequently the students were presented the topics of the four videos to select two favourites. This step was taken because of time constraints. The two videos democratically chosen by the students present were:

- Wooden calf igloo – Anton Fahringer (Junior);
- Soil-life-sensitive slurry fertilisation – Kaspanaze Simma.

After watching the videos the students were asked to conduct a video analysis based on a survey questionnaire and students were given five minutes to answer open questions. Finally after 50 minutes lesson was finished with thanking the students for their active participation.

5.5.4 Data collection

5.5.4.1 Structured surveys

A structured survey questionnaire filled in by the students served as a tool to evaluate the videos as educational resources. First the questionnaire asked for the socio-demographic data of the students. Secondly the students were asked to evaluate the videos according to a predefined set of criteria. The questionnaire involved the same Likert scale as the evaluation of the videos by the farmers participating in the video recording and the farmers participating in the farmers‘ video workshops did. The students were also given open space to do remarks on the videos.

Next the students had to state their level of agreement or disagreement with a set of predefined statements concerning the videos suitability as educational resources on a five-point-Likert Scale. The variation of a Likert Scale was chosen to not only to accommodate the limited time for answering the questions, but also because no student should be forced to create an ‚ad hoc‘ opinion of any topic with such newness and relevance. I hoped to get a more realistic picture of the adequacy of video as an educational resource in addition to a high return rate of properly answered questionnaires.

Lastly the impact the videos had on the students was evaluated by openly asking them what kind of message they take home and if and for what kind of experiments they got ideas by watching the videos (Bernard, 2006, pp. 251; Raab-Steiner and Benesch, 2010).

5.5.5 Data processing and analysis

The data collected during the students‘ video lesson was transferred to SPSS. Because of the small size of the sample, descriptive statistics were applied to analyse the collected data (Bernard, 2006, pp. 549; Bühl, 2010; Raab-Stein and Benesch, 2010).

Data from open questions were transferred to Microsoft Word to be sorted and categorised and to finally classify the findings that had emerged from the data (Newing, 2011b).

5.6 Critical reflection on the methods applied

For the scripted PV recording a purposive sample of organic farmers was selected. Major care was taken to select a group that not only represents the diversity of farmers' experiments, but also the diversity of farmers and farms in Austrian alpine organic farming (see section 5.3.2). I might face criticism for not having a fair share of women participating in the video recording. This was due the fact that the list with suggested active experimenters in Austrian alpine areas recommended to me only contained a minor percentage (7%) of female farmers. Additionally, two possible female participants chose not to take part in the video recording; one directly after the first contact via telephone and the other after the first personal visit at her and her husband's farm. Therefore I could not achieve a gender-balanced sample of farmers – even if I was aiming for one.

The samples selected for the farmers' video workshops and the students' video lesson have also been selected by using purposive sampling (see sections 5.4.2 and 5.5.2). The chosen sampling method in these cases was a result of the video application approach, which aimed to present the videos as true-to-life as possible. This was realised by showing them in institutional settings (local working groups on organic farming; graduation class agricultural high school). As a consequence of the purposive sampling approach, the results of the present thesis are only valid for the groups of informants surveyed during the different phases of the field research. Hence, the results cannot be generalised, even though parts of them have been elaborated by using bivariate statistical analysis (farmers' video workshops). To further improve the validity of results, the selection of the sample of the surveyed students and farmers would have to be based on a none-purposive random sample. Furthermore, a larger sample would be needed to increase the significance of the statistical analysis. Nevertheless the surveys conducted via survey questionnaires can be seen as part of a pilot study for a more extensive research that could not be realised within the framework of this master's thesis.

Another topic for critical reflection is the time needed to conduct a PV recording, but also the dependency on other factors, which came along with this methodological approach. Conducting a PV project is thrilling, fun and promises to have a considerable positive impact on the participants as well as the viewers of the videos, as the project outcomes (Lunch and Lunch, 2006). Factors that easily let you forget the effort connected with the method set – making its application not only worthy but also a challenging task. Preparing and conducting a PV project as well as processing the collected data takes time. Time is needed not only to study the set of methods for PV itself, but also to study the hard- and software required to produce the videos. Time is needed to establish rapport with the participants and for the shootings themselves. But most importantly, time is needed for the post-production of the recorded video material as well as the evaluation of the final videos. Finally, if the videos were produced to be broadcasted (via Internet or other possible media), a reasonable amount of time has to be appointed for the dissemination of the videos themselves.

Next to the time to be invested, also a noteworthy list of factors you are additionally dependent on during the PV recording has to be mentioned. Both the hardware for shooting (e.g. camera, microphone), and the software for editing footage you are dependent on and someone has to supply you with (if you do not want to invest money on your own) are quite pricy. Additionally you are dependent on personal support – in my case e.g. camera operators and musicians for the soundtrack of the videos. But also the personal support of the individuals (in my case farmers) participating in the PV project, who themselves have to invest a considerable amount of time and effort into the project. If you are lucky like me you will get plenty of support from a group of people who believe in your idea and want to help you to realise it. Still you have to be aware of the fact that you are using your social capital – being one of your biggest personal resources. Social capital used in a research project has to be understood as a resource that you have to reinvest in if you want it to be sustainable. All these issues mentioned above are always brought together by the issue of money: money is needed for transport, accommodation, required materials (cassettes, batteries etc.)

and money as a payment for the persons who support you with their time and skills. These are all factors that you have to be aware of before starting a PV project. Only then can PV recording become the thrilling and fun professional experience you are seeking.

Another point that has to be seriously considered before starting PV recording is the level of participation the participants are supposed to have. This is leading to the question of how you can make your wish for a meaningful PV project reality. The chosen scripted PV approach was aiming on developing videos about the process of farmers‘ experimentation in a truly participatory way. However the final videos were right from the start meant for dissemination to a broader public, which made the quality of the videos a major concern. The question of quality but also the limited time and financial resources for the production of the videos made it necessary to find a compromise between highest possible participation of the farmers and the quality of the final videos. The used approach therefore has to be seen as just one possible way to conduct a PV project. The approach was found to be suitable for the research project underlying the thesis – compromising with its conditions. Therefore it is important that future researchers, who are using the methods of PV, consider carefully how to achieve the highest possible meaningful participation while following requirements of their research project – to be able to innovate and not imitate PV approaches.

Finally, I want to discuss the influence the farmers who participated in the video recording have on the impact of the final videos. The produced videos aimed to have an impact on certain behaviour (experimentation activity) of the future viewers. Presenting the videos in the different learning environments revealed that next to the setting the videos are presented in and the message the videos carried, the personality and lifestyle of the person(s) featured as the main character(s) of the videos had major impact on how the video was accepted by the viewers.

Van Mele et al. (2005) stated that video is convincing because farmers see their peers explaining the ‗why‘ and ‗how‘ of a local grounded technology. One of the four videos presented during the farmers‘ video workshops portrayed an organic farmer who utilises a rather self-sufficient, low-tech approach to organic farming. The approach was very much polarising the present group of organic farmers, even though it was presented by one of their peers. The lifestyle and personality of the farmer took the attention away from the actual message of the video and made it hard to keep track in the subsequent discussion. His approach to organic farming was to such an extent different from what parts of the present farmers thought to be ―normal" that it needed to be discussed. Only afterwards the underlying message of the video was realised. Therefore when recording and applying video in the context of organic farming it has to be considered that there is a noteworthy heterogeneity in the peer group of organic farmers. The different personalities and lifestyles defining this heterogeneity within the group make some farmers more and some of them less accepted accounting to the common value system – which is influencing the impact of the video.

5.7 Materials

The most important ‚material' for the conducted research was I myself. The ability to build rapport with the research partners and interviewees, to ask proper questions, listen attentively and to watch carefully enabled me to conduct this research. Furthermore the following items were used during the research project:

Materials for video recording (Figure 10)

- ✓ High definition video camera
- ✓ Spare video batteries
- ✓ Mini DV Tapes
- ✓ Microphone Boom
- ✓ Microphone suitable for Microphone boom
- ✓ High definition earphones
- ✓ Sound wires
- ✓ Camera tripod
- ✓ Spotlights
- ✓ Tools
- ✓ Tape
- ✓ Digital photo camera
- ✓ Laptop
- ✓ External hard drive
- ✓ Editing software
- ✓ Schedule shooting
- ✓ Semi-structured interview guide
- ✓ Survey questionnaire
- ✓ Mementos

Figure 10: Items used for the video shooting (Mayer 2011, Wien)

Materials for farmers' video workshops

- ✓ Beamer
- ✓ Sound system
- ✓ Laptop
- ✓ Survey questionnaires
- ✓ Pens
- ✓ Digital camera
- ✓ Buffet
- ✓ Gift for the lottery

Materials for students' video lesson

- ✓ Beamer
- ✓ Sound system
- ✓ Laptop
- ✓ Survey questionnaires

6 Results

This section is structured into three parts that correspond with the overall objectives of the thesis: Results from the video recording (1), the farmers‘ video workshops (2) and the students‘ video lesson (3). In addition, the dissemination of the results (4) is presented.

6.1 Video recording

6.1.1 Evaluation of the videos

Farmers participating in the PV recording were satisfied with the final videos as a product of the video recording process (n=6). All farmers surveyed were very satisfied with the overall impression of the videos. When evaluating the individual elements of the videos, the answer categories „not that satisfied" and „not satisfied" were not chosen (Table 10).

Table 10: Satisfaction of purposive sampled farmers participating in the video recording, with selected elements of the videos according to frequency (f) and percentage (%), (n=6). The video's elements were predefined answer categories

	Very Satisfied		Satisfied		Not that satisfied		Not satisfied	
Elements videos	f	%	f	%	f	%	f	%
Content	6	100%	0	0%	0	0%	0	0%
Visuals	6	100%	0	0%	0	0%	0	0%
Sound	3	50%	3	50%	0	0%	0	0%
Music	4	66.7%	2	33.3%	0	0%	0	0%
Overall impression	6	100%	0	0%	0	0%	0	0%

Two statements the farmers noted in the survey questionnaire underlined these results:

> *"Very interesting selection of farms. The farms are very creative and really vivid and the shootings really lively and beautiful. For us it was a personal gain to take part" (Female farmer, 40-45 years)*

> *"I am proud for getting the chance to participate in this movie – it is embodying agriculture in all its variation. Thanks!" (Female farmer, 40-45 years)*

Statements given by the farmers during the semi-structured interviews conducted after the video shootings brought further evidence:

> *"[…] like I said I am still surprised in a positive way. I have to say that it has become good." (Male farmer, 40-45 years)*

> *"[…] I have to say that the expectations I had were fulfilled."* (Male farmer, 40-45 years)

The farmers believed that the videos communicated their messages in a genuine way. One farmer stated:

> *"[…] those are we in there. Yes!"* (Male farmer, 40-45 years)

The farmers‘ satisfaction with the videos was also observed while they were watching them. The farmers stated that the pictures met their expectations. The farmers were also satisfied with the content of the videos. Concerning the sound of the videos the farmers mentioned that it was strange for them to hear themselves talking. The participants in general were proud and felt that they were represented truthfully. This was especially exemplified by the actions of the two farmers who directly after watching their video themselves showed it to their children.

6.1.2 Evaluation of the video recording

The farmers were very satisfied with the overall process of the PV recording. Six out of six (100%) expressed this opinion. They were also very satisfied with the individual elements of the video recording. One farmer stated verbally after the evaluation that he was not that satisfied with his own performance during the shooting and therefore could not be very satisfied but was nevertheless satisfied with the shooting itself (Table 11).

Table 11: Satisfaction of purposive sampled farmers participating in the video recording, with selected elements of the video recording process according to frequency (f) and percentage (%), (n=6). The elements of the video recording process were predefined answer categories

	Very Satisfied		Satisfied		Not that satisfied		Not satisfied	
Elements of the video recording	f	%	f	%	f	%	f	%
First contact via telephone	6	100%	0	0%	0	0%	0	0%
First personal contact	6	100%	0	0%	0	0%	0	0%
Shooting	5	83.3%	1	16.7%	0	0%	0	0%
Presentation/evaluation	6	100%	0	0%	0	0%	0	0%
Overall process	**6**	**100%**	**0**	**0%**	**0**	**0%**	**0**	**0%**

The farmers themselves felt actively participating during the video recording e.g. by taking part in important decisions. They felt that they were represented truthfully by the videos as an outcome of the video recording and that the process also encouraged their actions as farmers. The farmers concurred that the videos were suitable for knowledge transfer from farmers to farmers. However, they did not agree on the statement that participating in the video recording was too time-consuming (Table 12).

Table 12: Agreement of purposive sampled farmers with statements concerning their attitude to the video recording according to frequency (f) and percentage (%), (n=6). The statements were predefined answer categories

	Strongly agree		Agree		Do not quite agree		Do not agree	
Statements video recording	f	%	f	%	f	%	f	%
I feel that I was actively participating in the video recording.	3	50%	3	50%	0	0%	0	0%
When the video recording took place I always felt I participated in the important decisions.	4	66.7%	1	16.7%	1	16.7%	0	0%
I feel that the message the video is carrying is representing me authentically	4	66.7%	2	33.3%	0	0%	0	0%
After my participation in the video recording I feel myself encouraged in my actions as a farmer.	4	66.7%	2	33.3%	0	0%	0	0%
In my opinion the video is suitable for knowledge transfer between farmers.	5	83.3%	1	16.7%	0	0%	0	0%

The participation in the video recording was too time-consuming.	0	0%	0	0%	2	33.3%	4	66.7%
The personal benefit through my participation in the video recording is little.	0	0%	2	33.3%	3	50%	1	16.7%

In general the farmers remarked that the video recording was a totally new but joyful experience to them. The farmers emphasised especially the uncomplicated way the contact with the initiator of the research project was established and the positive experiences they gained during the shootings. One farmer noted that he was attracted by the care taken during the video recording. For him the video recording was characterised by its quite time-consuming but interesting and enjoyable character (results elaborated from farmers‘ notes done in the survey questionnaires).

Verbal statements of the farmers additionally enforced the results stated above:

> *“[…] it was amusing, it was simply amusing.” (Female farmer, 40-45 years)*

> *“[…] actually the collaboration happened in an excellent way.” (Male farmer, 20-25 years).*

The participation of the entire family held special importance for two of the participating farmers:

> *”[…] the family has special importance to me […] (Female farmer, 40-45 years).*

The farmers were looking forward to seeing the results of the video recording:

> *” […] it has taken its time till we could arrange this [video presentation] […] I was looking forward to this day.” (Female farmer, 40-45 years).*

In general the farmers emphasised the care that was placed in conducting the PV video recording. The care was expressed in the different steps of the video recording process and its participatory character. The presentation of their own video was especially important to the farmers. The chance to have the final say on the video's message and outlook was also essential to the farmers. The farmers mentioned several times that this step of the process showed appreciation and gave the video recording a special touch. In addition, seeing the videos produced by the other farmers were of great interest to the farmers: they did not only to satisfy their curiosity but the videos also offered them the chance to gain knowledge on other farmers‘ experimentation activities. One male farmer (55-60 years) described the video recording as a ~~„~~*communicative process*” that took its time and appreciated the value of the parties involved. (Results gained by unstructured interviewing and participant observation).

6.2 Farmers' video workshops

6.2.1 Situation of the farmers' experiments

6.2.1.1 Occurrence, frequency and relevance of the farmers' experiments

73.5% (25 of 34) of the farmers surveyed reported at least one activity in the course of their occupation as ‗trying something' on their farm.

The occurrence of farmers' experiments was higher with farmers farming part-time than it was with farmers farming full-time (Fisher's Exact Test: n=34; p=0.017) (Table 13).

Table 13: Association between the occurrence of farmers' experiments and the farm operation type (n=34; percentage (%) and frequency (f) within the occurrence of farmers' experiments categories)

	Farm operation type			
	Full-time		Part-time	
Occurrence farmers' experiments	**f**	**%**	**f**	**%**
Yes	9	52.9%	16	94.1%
No	8	47.1%	1	5.9%

Chi-Square Test (Fisher's Exact Test): p=0.017 *(correlation is significant at p<0.05)*

Nevertheless, in the discussion during one of the two farmers' video workshops conflicting opinions were stated. Farmers argued that especially farming part-time allows no time resources to remain for trying new things. One male farmer declared:

> *"In addition, I cannot experiment; I am already working in two jobs."*

Other present farmers concurred that farmers farming part-time only had very limited time resources at their disposal.

The occurrence of farmers' experiments was not associated with gender (n=34; p=0,449), agricultural education (n=34; p=0.816) or the year of conversion (n=34; p=0.420) (Chi-square Test).

44.4% of the experimenting farmers stated that they try things ‗very often' (defined as ‗frequently during the whole season or year'), 44.4% stated that they try things ‗sometimes' (defined as ‗at least once every year'), and 11.2% stated that they ‗rarely' try things on their farm (defined as ‗not regularly and not every season or year') (n=18). Nine farmers did not answer this question, because they stated beforehand that so far they have not conducted any farmers' experiments on their farms. Additionally seven farmers did not answer the question even when they stated before that they conducted experiments at their farms (Table 14).

Table 14: Frequency (f) and percentage (%) of experimenting among purposive sampled farmers for the two farmers' video workshops in Obdach and Furth (Austria) (n=34)

On your farm you try things:	**f**	**%**
Very often	8	44.4%
Sometimes	8	44.4%
Rarely	2	11.2%
Not answered	16	

The frequency of experimenting did not correlate with gender (n=24; p=0.813), agricultural education (n=24; p=0.484), farm operation type (n=24; p=0.902) or the year of conversion (n=24; p=0.601) (Spearman correlation).

For the majority of the farmers participating in the farmer‘ video workshops farmers‘ experiments were considered to have high relevance on their farms. None of the surveyed farmers mentioned that farmers‘ experiments had ‗no‘ relevance at all for them (Table 15).

Table 15: Frequency (f) and percentage (%) of relevance of farmers' experiments for purposive sampled farmers participating in the farmers' video workshops in Obdach and Furth (Austria) (n=34)

Relevance of farmers' experiments	***f***	***%***
Very high	2	5.9%
High	29	85.3%
Low	3	8.8%
No	0	0%

One farmer stated that agriculture is a driving force for development because of its experimentation activities and the resulting innovations. Especially in the field of agricultural machinery farmers‘ experiments and innovations constantly generate further development. Other farmers present agreed with this statement (Statement group discussion first farmers‘ video workshop).

The relevance of farmers‘ experiments did not significantly correlate with gender (n=34; p=0.114), agricultural education (n=34; p=0.718), farm operation type (n=34; p=0.681) or the year of conversion (n=34; p=0.700) (Spearman correlation).

6.2.1.2 Topics of farmer' experiments

Farmers were experimenting in one to six of the nine predefined thematic clusters, with an arithmetic mean of 2.8 thematic clusters (n=34). Just taking into account farmers who actually did experiment during the course of their occupation the arithmetic mean of thematic clusters experimented in was 3.8 (n=25). The top three thematic clusters were (1) animal husbandry, (2) fertilisation and (3) tools and machinery (Figure 11). The results below represent the percentage of farmers who conducted farmers' experiments according to the predefined thematic clusters (n=34). The results do not refer to the freely stated topics of farmers' experiments as presented in Figure 12.

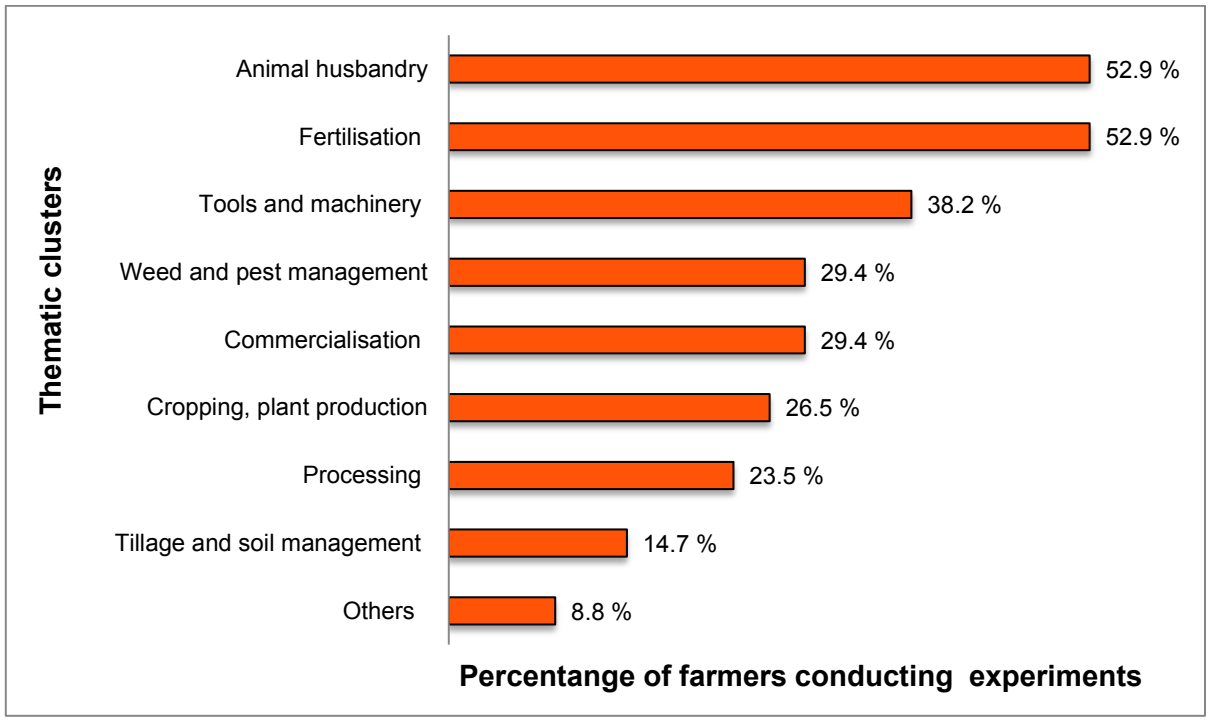


Figure 11: Percentage (100% = 34) of farmers conducting farmers' experiments according to predefined thematic clusters (n=34; predefined answer categories using terms from previously conducted research)

In total, the 34 interviewees mentioned 82 individual experiments (Figure 12). This number does not display the total quantity of experiments carried out at the farms of the surveyed farmers, but only refers to experiments that were noted freely in the survey questionnaire. The number therefore does not allow quantification of experiments on the farms, but gives information about the empirical base of the following results.

Between one and seven topics of experiments were mentioned by the farmers, with an arithmetic mean of 2.4 topics per farmer (n=34). Just taking into account farmers who actually did experiments during the course of their occupation the arithmetic mean of topics per farmer were 3.3 (n=25).

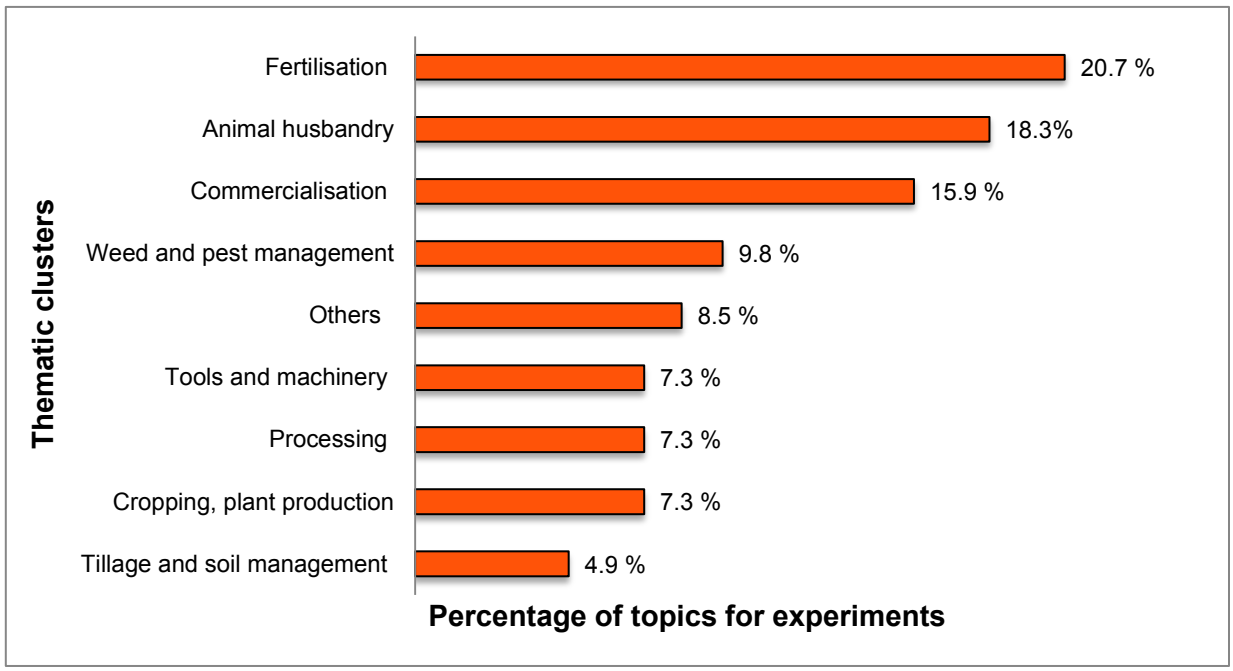


Figure 12: Percentage (100%=82) of topics for farmers' experiments according to predefined thematic clusters (82 experiments noted in the survey questionnaires, n=34)

42.7% of the experiments noted were conducted in the context of fertilisation, weed and pest management, cropping, plant production and tillage and soil management and included:

- Testing different ways of fertilisation e.g., farm manure, slurry or compost and fertilisers containing organic additives;
- Testing of new varieties and crops, including old and rare varieties e.g., old rye varieties;
- Trying different methods of weed control (manly in grassland) e.g., methods for mechanical weed control, biological weed control, further alternatives in weed control like extracts of stinging-needle;
- Testing different tillage approaches e.g., tillage with or without power harrow.

Experiments regarding commercialisation and processing (23.2% of the experiments) included:

- Development of new products, establishment of product ranges e.g., different milk and cereal products;
- Improvement and development of commercialisation activities e.g., trying new marketing channels.

Experiments in the area of animal husbandry (18.3% of the experiments) included:

- Introduction of new species on the farm e.g., turkey hen;
- Implementing new strategies for animal breeding;
- Trying new forms of housing and pasturing e.g., implementation of free range systems;
- Testing of different handling of animals e.g., run-out;
- Trying alternative treatments in animal health care e.g., homoeopathy, effective microorganisms;
- Improvements in the working processes to reduce or ease labour.

Experiments concerning tools and machinery (7.3% of the experiments) included:

- Improving and testing machinery for tillage e.g., harrow;
- Designing and improving tools and machinery for woodwork e.g., machinery for log wood treatment.

A range of further experimentation activities (8.5% of the experiments) were mentioned and included:

- Experiments in the context of timberland;
- Testing of different alternative remedies, preparations and supplements e.g., homoeopathy, effective microorganisms, or testing the lunar influence and farming according to the moon‘s cycle.

6.2.1.3 Attitude towards farmers' experiments

The farmers' expressed a positive attitude towards farmers' experiments (Table 16). Before watching the videos the farmers answered 24 statements about their attitude towards experimenting. Each statement was given in positive and negative wording in order to receive a clear picture about the farmers' attitude. For convenience, the following table only presents the results for the positively formulated statements about the farmers' attitude towards experimenting.

Table 16: Agreement of purposive sampled farmers with statements concerning their attitude to farmers' experiments according to frequency (f) and percentage (%), (n defining 100% given for each statement). The statements were predefined answer categories

	Strongly agree		Agree		Do not quite agree		Do not agree		
Statement about farmers' attitude to experimenting	f	%	f	%	f	%	f	%	n
Farmers' experiments are the opportunity for me to try out new things at my farm.	10	32.3%	20	64.5%	1	3.2%	0	0%	31
Farmers' experiments help me to adapt the farm to the changing conditions.	0	0%	26	89.7%	3	10.3%	0	0%	29
Farmers' experiments are an important part of my self-understanding as farmer.	8	24.2%	23	69.7%	2	6.1%	0	0%	33
Farmers' experiments help me to further develop my farm optimally.	3	9.7%	26	83.9%	2	6.5%	0	0%	31
It is part of farmers' duties to do experiments on their farms.	5	16.1%	23	74.2%	3	9.7%	0	0%	31
Currently I try out many new things at my farm in order to adapt it to my needs.	1	3.3%	17	56.7%	9	30%	3	10%	30
Farmers' experiments help me to find sustainable solutions for my farm.	3	9.4%	25	78.1%	4	12.5%	0	0%	32
Farmers' experiments save me time at the long run.	2	6.7%	20	66.7%	7	23.3%	1	3.3%	30
Farmers' experiments are innovative.	4	14.3%	20	71.4%	4	14.3%	0	0%	28
Farmers' experiments are an important part of the practises of organic farming.	10	32.3%	20	64.5%	1	3.2%	0	0%	31
Farmers' experiments make me more independent.	1	3.2%	19	61.3%	8	25.8%	3	9.7%	31
Farmers' experiments save me money.	4	12.1%	16	48.5%	10	30.3%	3	9.1%	33

The farmers‘ attitude to experimenting was associated with the farm operation type (Chi-square Test: p=0.025; n=30). Hence, while the full-time farmers rather disagree with the statement *“Currently I try out many new things at my farm in order to adapt it to my needs.”*, the part-time farmers rather agree with the statement (Table 17).

Table 17: Association between the farmers’ attitude to experimenting and the farm operation type (n=30; percentage (%) and frequency (f) within farmers’ attitude to experimenting categories)

		Farm operation type			
		Full-time		Part-time	
Statement about farmers’ attitudes to experimenting		**f**	**%**	**f**	**%**
Currently I try out many new things at my farm in order to adapt it to my needs.	Agree	6	40%	12	80%
	Disagree	9	60%	3	20%

Chi-Square Test: p=0.025 *(correlation is significant at p<0.05)*

6.2.2 Videos as a trigger for farmers' experiments

6.2.2.1 Video presentation and discussion as a source of motivation and ideas for farmers' experiments

24 of the 34 farmers (70.6%) reported that by watching the videos they got motivated to perform experiments on their farms. 23 farmers (67.6%) stated that by watching the videos and by participating in the subsequent discussion they got ideas for projects they wanted to try out at their farm in the near future.

The occurrence of motivation to perform farmers' experiments initiated by the videos was not associated with gender (n=34; p=0.320), agricultural education (n=34; p=0.928), farm operation type (n=34; p=1) or the year of conversion (n=34; p=0.285) (Chi-square Test).

The occurrence of concrete ideas and topics for farmers' experiments to be conducted in the near future initiated by the shown videos and subsequent discussion was also not associated with gender (n=34, p=0.730), agricultural education (n=34; p=0.693), farm operation type (n=34; p=0.714) or the year of conversion (n=34; p=0.539) (Chi-square Test).

Farmers wanted to experiment in one to six of the nine pre-defined thematic clusters, with an arithmetic mean of 1.5 (n=34). Just taking into account farmers who were motivated to conduct farmers' experiments in the foreseeable future the arithmetic mean of thematic cluster farmers wanted to conduct experiments was 2.2 (n=24). The top three clusters were (1) animal husbandry, (2) tools and machinery and (3) fertilisation/processing. (Figure 13).

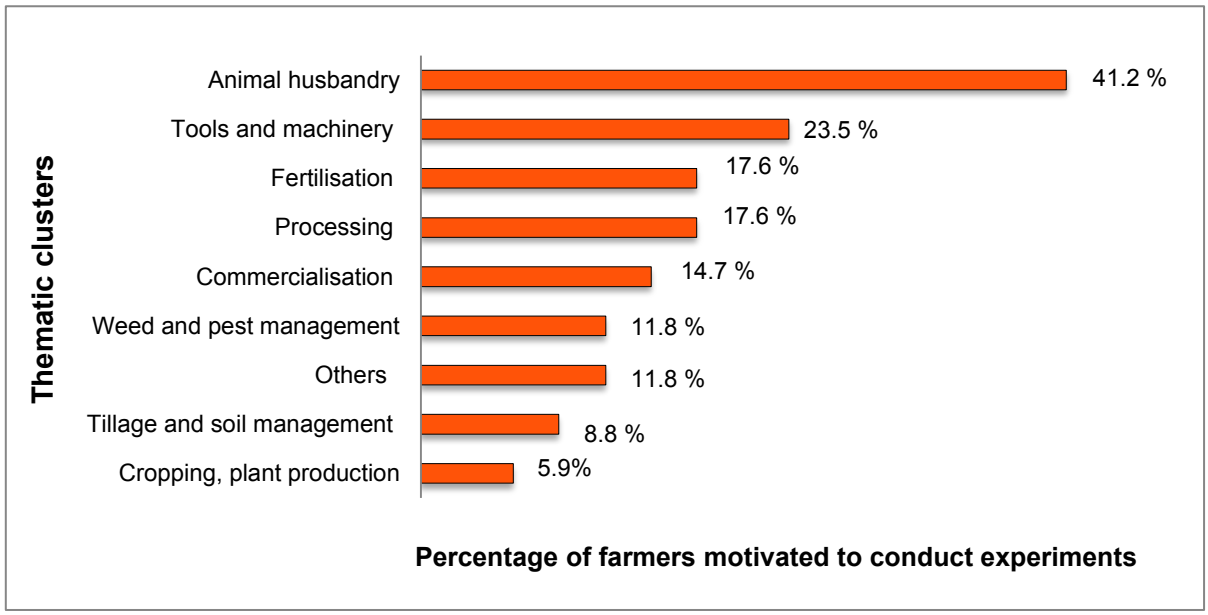


Figure 13: Percentage (100%=34) of farmers motivated to conduct farmers' experiments according to predefined thematic clusters (n=34; predefined answer categories using terms from previously conducted research)

In total, the 34 interviewees mentioned 22 experiments, which they wanted to try in the near future. These ideas for future experiments were motivated by the videos and the subsequent discussion.

Farmers mentioned between one and five topics of experiments, with an arithmetic mean of 0.65 topics per farmer. Just taking into account farmers who were motivated to conduct farmers' experiments in the foreseeable future the arithmetic mean of the topics they wanted to address was 0.9 (n=24) (Figure 14).

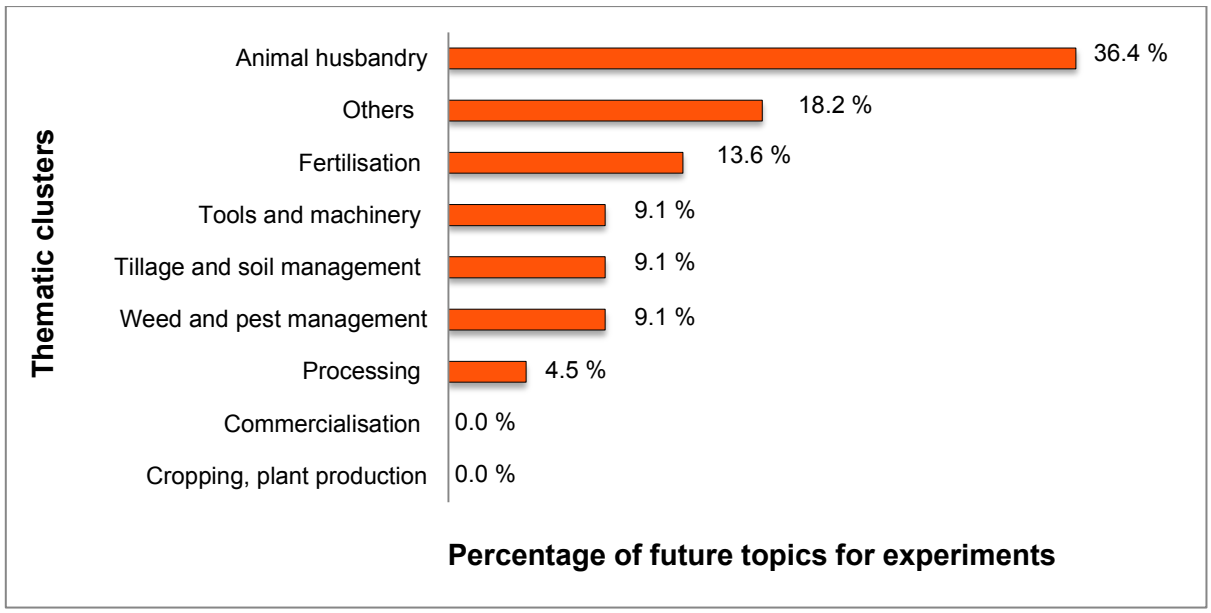


Figure 14: Percentage (100% = 22) of topics for farmers' experiments that the farmers were motivated to according to predefined thematic clusters (22 experiments noted in the survey questionnaires, n=34)

36.4% of the listed farmers' experiments were planned to be conduct in animal husbandry including:

- Trying new forms of housing e.g., „wooden calf igloo";
- Testing of different handling of animals.

Possible future experiments in the area of fertilisation, weed and pest management as well as tillage and soil management (31.8% of the experiments) included:

- Testing different ways of fertilisation e.g., ways to improve farm manure, applying compost and improving the soil by effective microorganisms;
- Trying different methods of weed control e.g., remedies using natural ingredients.

Possible future experiments concerning tools and machinery (9.1% of the experiments) included:

- Improving and testing machinery for tillage e.g., harrowing meadows;
- Testing tools for animal keeping.

One planned experiment was found in the area of food processing (4.5% of the experiments).

Finally, a range of further future experimentation activities (18.2% of the experiments) were found including:

- Experiments in the context of timberland;
- Experiments in a social context e.g., farm holidays or educational activities on the farm.

None of the participating farmers were motivated to experiment in the areas of arable land management and commercialisation.

6.2.2.2 Change in attitude through video presentation and discussion

Regarding the statement *"Farmers' experiments make me more independent."* a significant change in the farmers' attitude to experimenting was detected. Hence, farmers' attitude towards experimenting was higher after watching the videos and the subsequent discussion than it was before (Wilcoxon test: p=0.021). Before 64.5% of the farmers stated to agree with the statement, in contrast to afterwards when 83.4% of the farmers agreed. (Table 18).

Table 18: Change in farmers' attitude to experimenting by the impact of the videos and subsequent discussion (n defining 100 % given for each statement; % within farmers' attitude to experimenting categories)

Statement about farmers' attitude to experimenting		Before videos and discussion		After videos and discussion		Wilcoxon test	
		f	%	f	%	p	n*
Farmers' experiments make me more independent.	Strongly agree	1	3.2%	1	3.4%	0.021	31/30
	Agree	19	61.3%	24	80.0%		
	Do not quite agree	8	25.8%	4	13.3%		
	Do not agree	3	9.7%	1	3.3%		

* Number of farmers answering this question before and after watching the videos.

6.2.3 Evaluation of the videos

The Farmers participating in the farmers‘ video workshops were satisfied with the videos (n=34) (Table 19).

Table 19: Satisfaction of the purposive sample of farmers participating in the farmers' video workshops, with selected elements of the videos according to frequency (f) and percentage (%), (n defining 100% given for each statement). The video's elements were predefined answer categories

	Very Satisfied		Satisfied		Not that satisfied		Not satisfied		
Video elements	f	%	f	%	f	%	f	%	n
Content	18	52.9%	15	44.1%	1	2.9%	0	0%	34
Visuals	13	39.4%	20	60.6%	0	0%	0	0%	33
Sound	4	12.1%	9	27.3%	16	48.5%	4	12.1%	33
Music	6	19.4%	19	61.3%	5	16.1%	1	3.2%	31
Overall impression	**13**	**39.4%**	**20**	**60.6%**	**0**	**0%**	**0**	**0%**	**33**

The farmers were least satisfied with the sound of the videos, with 60.6% of the farmers being 'not that satisfied' or 'not satisfied' with the sound. This may be due to the fact that the audibility of the videos and the acoustics of the room were not optimal.

The overall impression of the videos did not correlate with the factors such as gender (n=33; p=0.220), agricultural education (n=33; p=0.537), farm operation type (n=33; p=0.835) or the year of conversion (n=33; p=0.950) (Spearman correlation).

The farmers participating in the video workshops also demonstrated a positive attitude concerning the impact the videos had on them and the impression the videos made on them (Table 20).

Table 20: Agreement of the purposive sample of farmers with statements concerning their attitude to the videos according to frequency (f) and percentage (%), (n defining 100% given for each statement). The statements were predefined answer categories

	Strongly agree		Agree		Do not quite agree		Do not agree		
Statements about the videos	f	%	f	%	f	%	f	%	n
The videos motivated me to try out more at my own farm.	3	9.7%	18	58.1%	8	25.8%	2	6.5%	31
The videos made the meaning of farmers‘ experiments clearer to me.	2	6.3%	25	78.1%	5	15.6%	0	0%	32
The videos did not fit my expectations.	0	0%	6	18.8%	6	18.8%	20	62.5%	32
The videos enriched my knowledge.	4	12.1%	18	54.5%	9	27.3%	2	6.1%	33
The videos had a positive influence on my attitude towards farmers‘ experiments.	3	9.7%	23	74.2%	5	16.1%	0	0%	31
In my opinion the videos carry great potential to encourage sustainable development of rural areas.	5	15.6%	20	62.5%	6	18.8%	1	3.1%	32

The videos are not suitable for sharing knowledge about farmers‘ experiments.	0	0%	4	13.3%	13	43.3%	13	43.3%	30
In my opinion the videos are suitable for knowledge transfer from farmer to farmer.	5	15.6%	23	71.9%	4	12.5%	0	0%	32
After I had seen the videos I felt assured in my actions as a farmer.	5	16.1%	21	67.7%	5	16.1%	0	0%	32
The videos offer an authentic picture of organic farming.	2	12.5%	20	62.5%	8	25%	0	0%	32

In the group discussion after the video presentation, the resonance concerning the videos was positive. In general the videos were appealing to the farmers. The farmers concurred that the videos carry the message of a nature-oriented agriculture and the idea that the individualisation of farms leads towards success. The video about Kaspanaze Simma‘s experiment in both workshops generated a vivid discussion. His mainly self-sufficient low-tech way of farming raised interest and concern at the same time. Notes the farmers added freely on the survey questionnaires underlined these results.

6.2.4 Evaluation of the video workshops

35.3% of the farmers assessed the overall impression of the farmers‘ video workshops as excellent, while 64.7% assessed the workshop as good (n=34).

The overall impression was not in correlation with the factors such as gender (n=34; p=0.407), agricultural education (n=34; p=0.967), farm operation type (n=34; p=0.488) or the year of conversion (n=34; p=0.230) (Spearman correlation).

The farmers evaluated the concept of the framers‘ video workshops with an arithmetic mean of 1.6, the organisation and practise orientation with one of 1.7 and the atmosphere with 1.6 (Table 21).

Table 21: Evaluation of the farmers’ video workshops by the purposive sample of farmers concerning selected elements of the farmers’ video workshops according to frequency (f) and percentage (%), (n defining 100% given for each statement). The workshops’ elements were predefined answer categories

	Excellent		Good		Satisfactory		Sufficient		Insufficient		
Elements farmers’ video workshop	f	%	f	%	f	%	f	%	f	%	n
Overall concept	15	46.9%	15	46.9%	2	6.3%	0	0%	0	0%	32
Organisation	14	43.8%	15	46.9%	3	9.4%	0	0%	0	0%	32
Practise orientation	14	45.2%	12	38.7%	5	16.1%	0	0%	0	0%	31
Atmosphere	15	48.4%	15	48.4%	1	3.2%	0	0%	0	0%	31

The farmers participating in the video workshops also showed a positive attitude concerning the impact the video workshop had on them and the impression the video workshop made on them (Table 22).

Table 22: Agreement of the purposive sample of farmers with statements concerning their attitude to the farmers’ video workshops according to frequency (f) and percentage (%), (n defining 100% given for each statement). The statements were predefined answer categories

	Strongly agree		Agree		Do not quite agree		Do not agree		
Statements about farmers’ video workshops	f	%	f	%	f	%	f	%	n
The event broadened my knowledge.	4	11.8%	23	67.6%	7	20.6%	0	0%	34
The event encouraged me to try out more at my own farm.	0	0%	21	65.6%	11	34.4%	0	0%	32
I would visit a similar educational event again in future.	6	19.4%	22	71%	3	9.7	0	0%	31
The educational event did not meet my expectations.	0	0%	2	6.7%	9	30	19	63.3%	30
I feel that the event did not offer me much.	0	0%	4	12.5%	13	40.6%	15	46.9%	32
I will tell my acquaintances about this event in a positive way.	5	15.6%	24	75%	3	9.4%	0	0%	32
The event was innovative.	8	25%	19	59.4%	4	12.5%	1	3.1%	32

6.3 Students' video lesson

6.3.1 Evaluation of the videos

The students were satisfied with the videos (n=16) (Table 23).

Table 23: Satisfaction of the purposive sample of students participating in the students' video lesson, with selected elements of the videos according to frequency (f) and percentage (%), (n defining 100% given for each statement). The video's elements were predefined answer categories

	Very Satisfied		**Satisfied**		**Not that satisfied**		**Not satisfied**		
Video elements	f	%	f	%	f	%	f	%	n
Content	9	56.3%	7	43.8%	0	0%	0	0%	16
Visuals	11	68.8%	5	31.3%	0	0%	0	0%	16
Sound	2	13.3%	10	66.7%	3	20%	0	0%	15
Music	7	43.8%	8	50%	1	6.3%	0	0%	16
Overall impression	**10**	**62.5%**	**6**	**37.5%**	**0**	**0%**	**0**	**0%**	**16**

The statements the students freely added at the evaluation form expressed that they were concerned about the quality of the videos' sound. This again may be due to the fact that the audibility of the videos and the acoustics of the room were not optimal.

The students participating in the video lesson also showed a positive attitude concerning the impact the lesson had on them and the impression the lesson made on them (Table 24).

Table 24: Agreement of purposive sample of students with statements concerning their attitude to the videos according to frequency (f) and percentage (%), (n defining 100% given for each statement). The statements were predefined answer categories

	Strongly agree		Agree		Neutral		Do not quite agree		Do not agree		
Statements videos	f	%	f	%	f	%	f	%	f	%	n
The videos enriched my knowledge.	2	12.5%	6	37.5%	8	50%	0	0%	0	0%	16
The videos are suitable for class.	3	18.8%	9	56.3%	4	25%	0	0%	0	0%	16
The videos did not meet my expectations.	0	0%	0	0%	3	18.8%	4	25%	9	56.3%	16
I would like to see more of this kind of videos in class.	4	25%	6	37.5%	3	18.8%	2	12.5%	1	6.3%	16
I will tell my acquaintances about this class in a positive way.	1	6.3%	12	75%	2	12.5%	0	0%	1	6.3%	16
The class was boring.	0	0%	0	0%	1	6.3%	3	18.8%	12	75.5%	16
The shown videos encouraged me to try out more at my parents‘ farm.	1	6.7%	10	66.7%	2	13.3%	1	6.7%	1	6.7%	15
In my opinion the videos are suitable for knowledge transfer from farmers to farmers.	8	50%	3	18.8%	4	25%	1	6.3%	0	0%	16

Topics mentioned by the students as being of most interest for them are:

1. **Wooden igloo for calf housing:** Seven out of 16 students (43.8%) mentioned that they wanted to remember this content.
2. **Alternative ways and methods in agriculture:** Six out of 16 students (37.5%) mentioned content out of this category as the message they wanted to obtain e.g., permaculture, self-sufficient agriculture and the general idea of alternative ways of doing agriculture.
3. **Cost reduction:** Three out of 16 (18.75%) stated that they wanted to examine how to reduce and optimise the spending on their parents‘ farms.
4. **No all over application of slurry:** Two of 16 (12.5%) stated that they want to remember this content.
5. **Applications of wood:** One out of 16 (6.3%) wanted to examine different ways to apply wood.
6. **Satisfied farmers:** One out of 16 (6.3%) mentioned that the content to remember was the idea of satisfied farmers who make their living without too many needs.

6.3.2 Videos as trigger for farmers' experiments

By watching the videos 12 out of 16 students (75%) got ideas for experiments they would like to try in the near future at their parents' farm. In total the 16 interviewees mentioned 37 individual experiments. The students mentioned between one to four topics of future experiments, with an arithmetic mean of 2.3 topics per student (Figure 15).

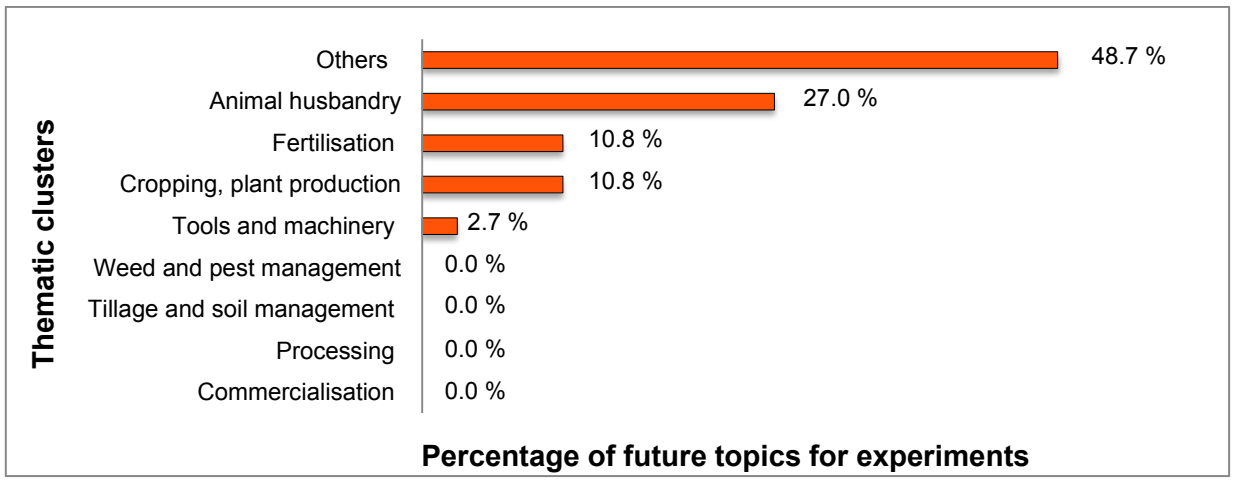


Figure 15: Percentage (100%= 37) of topics for farmers' experiments students were motivated to try out according to thematic clusters (37 experiments noted in the survey questionnaires, n=16)

48.7% of the experiments noted by the students were planned to be conducted in areas not classifiable as belonging to one of the thematic clusters, including:

- Experiments in the field of energy use e.g., ways to save energy and to get energy self-sufficient and alternative energy production such as the application of photovoltaic and wind energy;
- Trying ways to reduce production cost;
- Trying to work more efficiently e.g., optimisation of working processes;
- Application of effective microorganisms;
- Use of wood;
- Attempting horticulture;
- Testing different applications of permaculture.

Experiments regarding animal husbandry (27% of the experiments) included:

- Introduction of new breeds and species on the farm;
- Testing of different feedstuffs and optimisation of feed composition e.g., in egg production;
- Testing of different ways to handle animals e.g., application of horses under the conditions of alpine agriculture;
- Trying new forms of housing e.g., wooden loose housing systems and ~~-~~wooden igloos" for calf keeping.

Experiments in the field of cropping, plant production, and fertilisation (21.6% of the experiments) included:

- Testing of new varieties and crops, including old and rare varieties;
- Testing different ways of fertilisation e.g., farm manure, compost and application of effective microorganisms to improve farm manure.

Experiments regarding tools and machinery (2.7% of the experiments) included designing a cost-efficient concentrate feeding system for the milking parlour.

6.4 Dissemination of results

The research project underlying this master‘s thesis aimed at triggering farmers‘ experiments in Austria. In addition to the project itself, also the further dissemination of the project's results were therefore seen as important results themselves and are listed below.

Disseminating results within the framework of the research project underlying the thesis:

- Development of four scripted PVs (10-16 minutes each) with six organic farmers about the farmers‘ experiments in Austria;
- Two farmers‘ video workshops with organic farmers of the district of Judenburg, where the videos were shown and discussed;
- One students‘ video lesson on farmers‘ experiments in Austria with students of an agricultural high school, where two of the four videos were shown, discussed and analysed.

Disseminating the results beyond the framework of the research project underlying the thesis:

- One participatory workshop at the conference „Bio-Net 2011“ with different representatives of the Austrian organic farming movement. One of the videos was presented and afterwards its content and possible impact was discussed (http://www.bio-net.at/aktuell.html#bionet);
- First steps to disseminate the videos to a broader public:
    - publish the videos at the „Oekoland“ YouTube-channel (http://www.youtube.com/user/oekoland);
    - publish an article about the research project including YouTube-links at the homepage of the national journal „Biorama“ (http://www.biorama.at/bio-baeuerliche-versuche-in-oesterreich/);
    - initiate the publication of articles about the research project in Austrian organic farmers magazines on provincial and national scale, including YouTube-links;
    - initiating the publication of the videos on www.freiland.or.at and www.bio-wissen.at;
    - produce a DVD;
    - launch the homepage www.biobaeuerlicheversuche.org, were the research project and its outcomes are presented and the videos can be watched but also purchased in DVD-format;
    - implement the videos into the organic agricultural advisory system of the province of Styria, where the videos were given to the advisors in the field of organic farming;
- Submission of the research project to TPorganics (http://www.tporganics.eu/) as an example of a successful and innovative educational project in organic food and farming;
- Presentation of one of the videos at the Austrian organic farming conference 2012.

7 Discussion

7.1 Farmers' experiments

Farmers' experiments are related to the natural conditions the farmers are located in and are working with. They vary from region to region (Quiroz, 1999) and are carried out with the available physical and biological resources (Rajasekaran, 1999). In Judenburg, as an alpine district, all of surveyed farmers owned grassland, while only a small number of farmers also owned arable land. This was also expressed in the results, in which the majority of the farmers' experiments showed a direct connection to the grassland-based system from which they evolved. Furthermore, the thematic clusters of experimental topics specified by the farmers (e.g. animal husbandry) reflected the natural conditions the farmers were surrounded (see section 6.2.1.2).

Farmers participating in the farmer's video workshops were found to be experimenting with a broad diversity of topics. In particular, technical experiments, e.g. fertilisation and animal husbandry, were mentioned most frequently (see section 6.2.1.2). The literature also gave evidence that about 75% of experiments conducted by farmers are rather technical (Kummer, 2011; Sumberg and Okali, 1997); experiments in the social or institutional areas are less frequent, because of their greater complexity and the organisational effort needed (Sumberg and Okali, 1997).

Kummer (2011) found that all of the farmers she interviewed reported at least one activity in the course of their occupation as ‚trying something'. When asking the organic farmers to freely list the experiments they had carried out, they mentioned on average 5.4 topics. The results of this study, however showed an interesting lower occurrence of farmers' experiments among the farmers participating in the Judenburg district workshops. By only taking into account the farmers who had already tried out something in the course of their farming, a smaller average number of conducted experiments (3.3 topics per farmer) was recorded (see sections 6.2.1.1 and 6.2.1.2). Are therefore, the organic farmers of Judenburg who participated in the two video workshops less keen on experimenting? And if they were to experimenting which factors would influence their reduced experimental behaviour?

Socio-demographic factors such as gender, agricultural education and year of conversion did not show an influence on the occurrence, relevance and frequency of farmers' experiments among the farmers participating in the workshops (see section 6.2.1.1). This is also underlined by the results found in the literature, where it is stated that farmers' experiments were carried out by farmers of all socio-demographic groups (Hocdé, 1997; Sumberg and Okali, 1997; Critchely, 2000).

Comparing the methodological approaches applied by Kummer (2011) with the current study, one explanation for the reduced occurrence of farmers' experiments can be found. While Kummer (2011) interviewed the farmers personally, in the present work the farmers were surveyed via self-administered questionnaire (see section 5.4.4.1). Even though trained persons in this study were on hand to answer questions and to solve possible difficulties (e.g. no spectacles), the chance that farmers were not aware that they were experimenting or that there were misunderstandings was higher with the questionnaire approach (Bernard, 2006, pp. 255).

But even more influencing seems to be that the motivation to list a large number of experiments is low when there is no direct counterpart to share this information with, one showing direct interest and possibly asking questions for clarification (Bernard, 2006, pp. 255). This is also shown by the fact that the farmers participating in the farmers' video workshops were found to list more experiments according to the pre-defined thematic clusters (to be marked with a cross) as they freely listed concrete individual topics with which they were experimenting (to be written down).

Another phenomena that is worth discussing, was the significantly higher occurrence of farmers‘ experiments with farmers farming part-time compared with those farming full-time (see section 6.2.1.1 and 6.2.1.3). That the farm operation type can influence the farmers‘ willingness to experiment is also supported by the literature. Farmers farming part-time and therefore getting an additional income might show a greater willingness to experiment, as there is more money for agricultural investment (Sumberg and Okali, 1997). However, the influence of part-time work can also be negative as it reduces the time at the fields, and the farmers need also to invest into the future of agricultural production. Contradictory to the findings of this thesis, in the literature the examples of farmers conducting farmers‘ experiments suggest that full-time farmers undertake more experiments (Critchely, 2000).

7.2 Facilitating farmers' experiments

7.2.1 The power of video

In this work, a scripted participatory video (PV) approach was used to visualise the organic farmers‘ process of experimentation. PV showed its potential for stimulating farmers‘ experimentation activities (see section 6.2.2.1 and section 6.3.2) but it was also found to be useful for disseminating farmers‘ experiments (see section 6.4). Furthermore, PV could build the farmers' capacity to experiment, by sharing selected contents of local knowledge. This is in line with the work of Chowdhury et al. (2010) who interpreted scripted PV as a capacity-building tool and its use for disseminating sustainable technologies or local knowledge even across geographical scales.

The current results of the present thesis showed that the farmers participating in the video recording were satisfied with videos as outcomes of a participatory process (see sections 6.1.1). The majority of the farmers participating in the video recording felt themselves as active participants, who had taken part in important decisions during the different steps of developing a video. Through, the videos, they felt themselves to have been authentically represented, and by their participation in the video recording they felt themselves encouraged in their actions as farmers (see section 6.1.2).

The findings also reflect what literature revealed about the nature of PV. PV was found to change the role of the researcher (CTA, 2006); he/she hands over control of the actual process to the people participating (Lunch and Lunch, 2006; Chowdhury and Hauser, 2010), enabling two-way communication that indeed builds trust between the different actors in the video recording (Van Mele et al., 2007). The participants have therefore the feeling that their knowledge is valued, and realise pride and self-esteem through their participation (Lunch and Lunch, 2006; Chowdhury and Hauser, 2010).

In the course of this study, it was thrilling to see if it was possible to create a feeling of meaningful participation among the participants in the PV recording within a remarkably short time. Odutola (2003) stated that just to come on ~~fl~~ying visit" is not enough to achieve meaningful participation. Additionally, it is found in the literature that truly participatory projects are those, which empower people by building skills, interests, and capacities that continue even after the project ends (Pretty, 1995b cited in Odutola, 2003).

The results of the evaluation of the video recording process by the participating farmers underlined that the attempt has been a success (see section 6.1.2). This was supported by additional research I did on the competences farmers were able to gain during their participation in the scripted PV recording. According to Mayer (2011), such enabled farmers to activate and strengthen a comprehensive set of competences.

In addition to the farmers participating, also farmers and students watching the videos were convinced by them. The majority of farmers and students stated that the videos were suitable for knowledge sharing between farmers. Farmers further noted that the videos offered an authentic picture of organic farming and made them feel confirmed in their actions

as farmers. They also agreed that the videos carry great potential to encourage the sustainable development of rural areas (6.2.3 and 6.3.1).

Several authors have stated that farmer-to-farmer video is convincing, and suitable for sharing knowledge and skills effectively, because other farmers see their peers speaking authentically on camera, explaining the ‗why' and ‗how' of a locally grounded technology (Van Mele et al., 2005; CTA, 2006; Chowdhury et al., 2009). Finally the results are also in line with Zossou et al. (2009a), who pointed out that farmer-to-farmer videos have great potential to enhance sustainable agriculture by encouraging local innovations.

7.2.2 Video as trigger for farmers' experiments

In the present study video, was found to trigger farmers' experiments in many ways and from many different angles. Video served to raise awareness, to change attitude, to promote the sharing of knowledge and skills, to motivate and foster fresh ideas, showing its capacity under different conditions and addressing various actors. But is video therefore also transforming farming practices of those who watched, listened to, reflected on, and discussed farmers' experiments?

7.2.2.1 Video to raise awareness

Various authors stated that videos have the power to highlight a specific issue in order to raise awareness among a particular audience (Lunch and Lunch, 2006; Lie and Mandler, 2009). Van Mele et al. (2007), by conducting a post-intervention study six months after exposure to a video, also found that all the women surveyed remembered what they have seen six month previously.

In the course of this study the videos helped to raise awareness of organic farmers' experiments in Austria in various ways:

Firstly, they raised the awareness of the farmers of their role by participating in the scripted PV recording. All the farmers claimed to have been encouraged in their actions as farmers (see section 6.1.2). They were able to exchange knowledge about farmers' experiments with me as facilitator, but also could share their knowledge with the other farmers participating in the video recording during the preview while evaluating the video recording.

Secondly, the videos raised the awareness among the farmers to whom the final videos were shown. The majority of the farmers present during the farmers' video workshops stated that the videos clarified the meaning of farmers' experiments for them, and that they felt ensured in their actions as farmers after watching the videos. In addition, the videos served as trigger for vivid discussions about farmers' experiments (see section 6.2.3).

Thirdly, students at the agricultural high school felt themselves encouraged to try more ideas they had at their home farms, and indicated that they would give their acquaintances positive reports about the video lesson (see section 6.3.1 and 6.3.2).

In addition, the videos were shown to students studying organic farming during previewing sessions in the Master's and Doctorate Seminars at the University of Natural Resources and Life Sciences, Vienna (BOKU). The aim of these sessions was to get feedback to help fine-tune the videos, and to confront the students with the concept of farmers' experiments.

Fourthly, the videos raised the awareness of various other actors (e.g. researchers, journalists, politicians) in the Austrian organic farming movement. Representatives of these groups viewed to one of the videos during the ‗Bio-Net' 2011 – a transdisciplinary conference aiming at furthering the exchange of knowledge within and between the groups of different actors in Austrian organic farming. Finally, e-mails indicating information about and links to the videos were sent to various actors of the organic farming movement of Austria; this led to the publication of articles on the research project in a number of Austria's magazines working on topics in the context of organic farming and sustainable lifestyle (see section 6.4).

Finally, the videos were made available to the interested public active on you tube. To date (January 2012) the four videos have received some 2300 hits, while nine persons pushed the „Like"-button.

The above discussion about the dissemination of the videos highlights their ability to raise awareness under various conditions using different presentation methods and communications channels, emphasising such videos flexibility in application (cf. also Lie and Mandler, 2009).

7.2.2.2 Video to change attitude

The results also provided evidence for the videos' potential to change the attitude of farmers who watched them (see section 6.2.2.2). Also Van Mele et al. (2007) found video changing the attitude of women concerning a specific seed sorting practice that previously had been found tedious. After watching the farmer-centred learning videos, fewer women shared this earlier opinion.

7.2.2.3 Video to share knowledge

The videos also showed their potential to share the knowledge about farmers' experiments from farmers to farmers; farmers participating in the PV recording, farmers watching the videos in the farmers' video workshops but also agricultural students seeing them in class agreed about this potential. Additionally farmers participating in the workshops as well as, students stated that their knowledge had been enriched by watching the videos (see sections 6.1.2, 6.2.3 and 6.3.1).

The videos potential to increase the capacity of farmers in terms of knowledge generation was also noted in literature where studies of development research proved video to share knowledge effectively (Van Mele et al., 2005; Van Mele at al., 2007). Van Mele et al. (2007) found video to perform even better than farmer-to-farmers extension for conveying new scientific knowledge. Farmers who saw the videos retained most of the key concepts. Van Mele et al. (2005) also found that video was even more convincing than being told by a person.

7.2.2.4 Video to motivate and stimulate fresh ideas

Video also showed its power to motivate farmers and students to conduct a divers range of farmers' experiments at their own or their family's farm in the foreseeable future (see section 6.2.2.1 and section 6.3.2).

With both farmers and students it was exciting to see that next to the topics already addressed in the videos, they obtained ideas for many other possible experiments not directly connected with the videos' contents.

This possibly can be explained by three factors: (1) Farmers and students might have had already ideas for experiments they wanted to try in future before watching the videos. The videos hence, helped them to foster these ideas and to make them explicit; (2) It is a result of the exchange of ideas on experiments between the members of the audience. The farmers and the students exchanged further ideas with their colleagues in the subsequent discussions, perhaps finding them to be attractive and being motivated to try them out (social learning); (3) The videos stimulated the creative potential of the audience, whom then could form something „new' out of what they already knew together with the new information.

Van Mele et al. (2007) also proved the video's potential to stimulate the creative power in the rural community. He used it to present to a rural community a wide range of different concepts and found video to establish the preconditions for farmers' experiments and innovations.

Zossou et al. (2009a) further stated that farmer-to-farmer video has great potential to enhance sustainable agriculture by encouraging local innovation. In a related study she found that video even did better in stimulating innovation than hands-on training workshops. Additionally she stated that video was better in conveying local innovations than farmer-to-farmer extensions (Van Mele et al., 2007). Zossou et al. (2009a) indicated that video that shows how farmers implement new ideas will encourage more farmers to experiment with new technology. The results of this study confirmed the statements in the literature that showed the power of video to stimulate the creative potential of its viewers.

7.2.2.5 Video to change practices

Video has shown its potential to raise awareness, change attitude, share knowledge and also to motivate and stimulate fresh ideas. Finally there is still one exciting and essential question to ask: *„Has video the power to change the practices of farmers and students in the sense of increasing their experimentation activities?'*

Unfortunately this question cannot be answered from the current study. Further work is needed to assess the final impact of the videos. There is the need to bring evidence for the power of video, not only to state its potential. Post-intervention studies, to explore the impact the videos had on the farmers and their farms, are the key.

Fortunately literature brings hope and is documenting some promising results. There is proof that video can definitely change the practices of those who watched: Van Mele et al. (2007), by doing a post-intervention survey six months after exposing farmers to farmer-centred learning videos on seed sorting, found that all of the women studied remained aware of the practices that were taught. However the issues taught were not convincing to all of them, and so only a relatively small percentage (24%) of the women definitely adopted the practices.

But Van Mele et al., (2005) had previously found evidence that video is able to change practices. In that case 40% of the women that saw farmer-to-farmer videos on seed management changed their practices in seed drying. Comparing the video intervention to farmer-to-farmer extension, the level of experimentation on the topic among the farmers exposed to video was found to be much higher.

Additionally Chowdhury et al. (2009) brought evidence that video changed the practices of local woman in Bangladesh. The results of the studies showed that a video intervention led to the ability of the women to produce quality seed, resulting in yield increases of 5 to 15%; furthermore, the seeds could be sold at double the price.

Even if the results found in the literature may raise hopes that video will be able to transform practices, video alone is not able to do so. Next to the message a video carries (Bentley, 2009), a video‘s success also depends on how profitable and functional the issues shown are (Van Mele et al., 2005). Furthermore, their success also depends on the institutional environment and the economic conditions of the countries in which the videos are used, and finally on the conditions of the farmers and their farms where the actual change is supposed to happen (Schneider et al., 2008).

Even if the power of video to trigger farmers‘ experiments in Austria is not yet proven, it would surely be worth looking ~~-be~~hind the curtain" to see what kind of innovative practices we can find among those who watched, listened, reflected and discussed.

7.2.3 Sharing and using video

In the present study video showed its potential to share knowledge and skills effectively to change attitude and practices. Video was studied in the context of adult education by applying it in farmers‘ video workshops with integrated discussions (pair and group), but also in the Austrian agricultural school system, using video as the basis for a lesson on farmers‘ experiments. In addition, first experiences of how video can be used to reach a broad

audience were gained. Reason enough to take a closer look and to discuss the results obtained.

7.2.3.1 Farmer-to-farmer video in adult education

The farmer-to-farmer videos embedded in a farmers‘ video workshop with integrated pair and group discussion applied in the context of agricultural adult education were found to be convincing by the participants (see section 6.2.4).

Literature also provides evidence for the successful application of comparable approaches to use and share video in the context of the so-called ‚developing‘, but also the so-called ‚developed‘ world. Some approaches like the Video Viewing Clubs (VVCs) (David and Asamoah, 2011) (see section 4.2.3) are rather formal; others such as workshops with integrated subsequent discussion as found in the Swiss ‚Farmers-to-Farmers‘ project (Schneider et al., 2008) are rather informal.

In the Swiss example, video‘s potential to provide a good climate for discussion leading to intensive debate could be shown. Such discussions were found to occur especially in settings with a small number of participants. Schneider et al. (2008) recorded that, in addition to an embedding of the videos in an adequate event, the successful use of video depends on the presence of a practical, experienced person to enable constructive discussion.

Video in the settings described above proved its potential to build capacity and also to initiate discussion on new issues, setting of a social discourse. These are qualities that video applied in the farmers‘ video workshops did also provide.

7.2.3.2 Farmer-to-farmer video in school

The farmer-to-farmer videos when applied in the Austrian agricultural school system persuaded. In the context of the school, the videos showed their potential to raise awareness and built capacity on the topic of organic farmers‘ experiments (see section 6.3.1).

Allenbach (2007) and Schneider et al. (2008) were also able to apply farmer-to-farmer videos successfully in agricultural schools. In their study, such videos on sustainable tillage practices were used in Swiss schools for basic agricultural education. In this context, video was found to be an authentic tool, catalysing knowledge transfer and reflection. At the same time video, provided a good basis for subsequent discussion. Videos also showed particular potential as sensibiliser for important issues in the context of sustainability. However, it was pointed out that the videos alone did not support social learning. To stimulate this process video needed room for discussion with a group of diverse actors (Allenbach, 2007; Schneider et al., 2008).

Video alone cannot develop its full power in education if not embedded into reasonable methodological approaches (e.g. video-analyses and subsequent discussion). This is also in line with Bentley (2009), who stated that the impact of an extension depends on the message that needs to be transferred, but also on the method used to do so. Video here needs to be integrated into a firm concept. The support of a person(s) facilitating a video is crucial (Chowdhury and Hauser, 2009; Lie and Mandler, 2009; Chowdhury and Hauser, 2010; David and Asamoha, 2011).

7.2.3.3 Farmer-to-farmer video goes public

In addition to the application of the videos in the two learning environments, mentioned above, they were applied in the context of university and one was shown to various relevant actors of the Austrian organic farming movement in an inter- and transdisciplinary setting. Furthermore, the videos were also widely disseminated via Internet (YouTube) (see section 6.4).

Video therefore has much higher inherent potential than ‚just being a trigger' to initiate experimentation amongst organic farmers in Austria. Video enriches the public discourse about agriculture and was bringing the farmers' perspectives into the ‚arena' (Lunch and Lunch, 2006).

Until now videos full potential is not explored, to be able to unfold it there is a need for what Odutola (2003) calls ‚robust systemic support'. To use video's full power the support of all relevant actors (farmers, advisors, researchers, politicians) is necessary, combining video with an elaborated and concentrated dissemination strategy, using all of what modern society can offer to unleash its inherent potential.

8 Conclusion

The findings of this study undertaken in Austria underline the importance farmers' experiments have for organic farmers and revealed the potential of video to trigger experimentation activities among organic farmers. Video showed its capability to go even further than „just' to stimulate local experimentation: it provided a means to convince different actors in the fields of agriculture (e.g. those involved in advisory, research, media and policy areas, as well as agricultural students, even an interested public) of the value of farmers' experimentation and the use of video to provide meaningful, well-elaborated information on organic agriculture.

To explore video's full potential „robust' systemic support is needed, the various actors have to pull together to unleash video's full power. The positive impact on agricultural students that the videos had, tempting them also to become involved in such experimentation, emphasises video's power to motivate.

Further action is needed:

- to document the broad diversity of organic farmers local innovations;
- to study exhaustively how to design a meaningful participatory video project under the conditions of the so-called „developed' world;
- to study how to apply video most effectively to stimulate farmers innovative potential;
- to study ways to disseminate such videos among all actors most effectively;
- to study the impact farmer-to-farmer video had on the viewer's practices of experimentation.

Indeed, to fully assess the impact the videos had on the practices of farmers and students experimentation activities post-intervention studies are needed. There is still little literature on how video stimulates farmers' experimentation (Lie and Mandler, 2009); even less can be found on facilitating it by applying video. This thesis is therefore a contribution to the research on the use of video to further farming development, hoping it will cause the concept to spread, and to motivate others to engage in this recent and adventurous field of studies.

9 Summary

Farmers‘ experiments and innovations have been an integral part of the development of the world‘s agricultural systems. Testing new methods and technologies, as well as experimenting and innovating, were common elements in the daily life of farmers. Through experimentation farmers gained practical experience and built up local knowledge, this process forming the basis of agricultural evolution.

Farmers‘ experimentation has also played an essential role in the development of organic farming. Until the 1990s, organic farmers were not offered much support in terms of consultancy or agricultural extension programmes, and they were mainly ignored by the scientific community. The farmers had to develop organic farming individually through experimentation, but this brought continuous innovation. Despite the considerable experimental potential within the organic farming movement, these developmental efforts were seldom recognised by most institutional research.

Farmers‘ experiments contribute to the creation of new knowledge and form the precondition for innovation. Facilitating farmers‘ experimentation activities is of major interest for the principal actors in organic farming. Innovative farmers are few, and getting other farmers to be similarly innovative is an important challenge to enhance local agricultural systems. Therefore facilitating participatory communication that triggers local innovation, and enabling a wider audience of users to benefit is one of the key challenges in agricultural development.

Currently there are not enough methods for conveniently documenting and disseminating farmers‘ experiments. Video is an especially eligible tool, because video can be used in many ways to record and enhance communication between the various actors in the agricultural system. Video can trigger experimentation and innovation among farmers. In particular, farmer-to-farmer videos developed in a truly participatory process seem to fulfil this promise.

An understanding of how to stimulate innovation among farmers is crucial for attaining sustainable agriculture. This study explored video as a participatory method to capture the research process of organic farmers‘ experimentation. Four videos were developed with six organic farmers in a scripted, participatory video recording process. Subsequently the farmers themselves evaluated the videos, and also the process they had evolved in. Data from participant observation and semi-structured interviews enriched the data deriving from recording the videos.

This project also studied the situation of organic farmers‘ experiments in the Austrian mountainous district of Judenburg. It investigated the topics of farmers‘ experiments, uncovered the attitudes farmers had to experimenting, and the factors influencing their experimentation activities. Finally it explored the potential of video to trigger farmers‘ experiments under different learning environments (farmers‘ video workshops and a students' video lesson).

During two farmers‘ video workshops with integrated pair and group discussions, the videos were shown to a total of 34 organic farmers. In these workshops, survey questionnaires were used to collect data on the situation of farmers‘ experiments in the research area, to assess the impact the videos had on the farmers, and to evaluate the videos and the workshops in terms of the setting they were applied in.

The videos were also shown to 16 students of an agricultural high school in the setting of a regular lesson. Again survey questionnaires were used in the lesson to assess the videos' impact and to evaluate them.

For data analysis, qualitative data were analysed by qualitative content analysis, while quantitative data were analysed using univariate and bivariate statistical methods and tests.

The farmers surveyed had a positive attitude to farmers‘ experiments. Results of the two farmers‘ video workshops indicated that such experiments had high significance for 85% of

the participating organic farmers. It was noted that farmers conduct experiments on a wide range of topics (82 farmers‘ experiments). The occurrence of farmers‘ experiments was significantly higher among farmers farming part-time than among those farming full-time (*Fisher’s Exact Test: p=0.017*). The farmer-to-farmer videos stimulated 71% of the participating farmers to consider conducting experiments at their farms in the future.

Videos were found to raise awareness, change attitudes and share knowledge, and they also proved to be successfully applicable in both adult and student education. The results from the students‘ video lesson indicate that, after watching the videos, 75% of students developed ideas for experiments they would like to try in the near future at their parents‘ farms. The videos additionally proved to be a trigger for vivid discussions in various farming forums, and they enabled social learning in settings with various actors who also play a role in the field of agriculture, typically persons involved in the advisory, research, media and policy areas, persuading them of the value of farmers' experimentation as well as of the use of video to provide meaningful, well-elaborated information on organic, sustainable agriculture.

To explore video's full potential ‚robust‘ systemic support is needed, and the various actors in organic agriculture have to pull together to unleash video's full power. The positive impact on agricultural students that the videos had, tempting them also to become involved in experimentation, emphasises video's power to motivate.

However, to assess the impact video has had on the practices of farmers and students experimentation activities, post-intervention studies would be urgently needed.

10 Literature

Allbach S. (2007): Beitrag des Filmes Von Bauern für Bauern zur Konkretisierung von Nachhaltigkeit über Wissensaustausch- und Lernprozesse – Potentiale und Limitationen zur Förderung von bodenschonenden Anbausystemen. Thesis University of Bern, Bern.

Aristizàbal, A., Salazar, L.F., E. & Mejìa, H.M., M, C.G. (2002): Cambios en la adopciòn de los componentes del manejo integrado de la broca del cafè, Hypothenemus hampei (Coleoptera: Scolytidae), a través de metodologías participativas con agricultores. Revista Colombiana de Entomología (Colombia) 28, 2, 153-160. Quote and bibliographic data taken from: Bentley, J.W. (2009): Impact of IPM Extension for Smallholder Farmers in the Tropics. In: Peshin, R. & Dhawan, A.K. (Eds.), Integrated Pest Management: Dissemination and Impact, Springer Science+Business Media B.V., s.l., 333-346.

Bentley, J.W., Boa, E., Van Mele, P., Almanza, J., Vasques, D. & Eguino, S. (2003): Going public: A new extension method. International Journal of Agricultural Sustainability 1, 2, 108-123.

Bentley, J.W. & Baker, P.S. (2005): Understanding and getting the most from farmers' local knowledge. In: Gonsalves, J., Becker, T., Braun, A., Campilan, D., Chavez H.D., Fajber, E., Kapiriri, M., Rivaca-Caminade, J. & Vernooy, R. (Eds.), Participatory research and development for sustainable agriculture and natural resource management. A sourcebook. Volume 1: Understanding participatory research and development. International Potato Center-Users' Perspectives With Agricultural Research and Development, Laguna, Philippines International Development Research Centre, Ottawa, Canada, 58-64.

Bentley, J.W. (2006): Folk experiments. Agriculture and Human Values. 23, 4, 451-462.

Bentley, J.W. (2009): Impact of IPM Extension for Smallholder Farmers in the Tropics. In: Peshin, R., Dhawan, A.K. (Eds.), Integrated Pest Management: Dissemination and Impact,.: Springer Science+Business Media B.V., s.l., 333-346.

Berkes, F. (1993): Traditional Ecological Knowledge in Perspective. In: Inglis, J. T. (Eds.), Traditional Ecological Knowledge. Concepts and Cases. International Program on Traditional Ecological Knowledge, International Development Research Center, Canadian Museum of Nature, Ottawa, Ontario, Canada, 1-9.

Bernard, R. (2006): Research methods in anthropology - Qualitative and quantitative approaches. 4th Edition. Alta Mira Press, Oxford, United Kingdom.

Bezirkskammer für Land- und Forstwirtschaft Judenburg (2009): Tätigkeitsbericht 2009. Unpublished script, s.l.

BMLFUW (2009): Organic farming in Austria. Bundesministerium f r Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (BMLFUW), Vienna, Austria.

BMLFUW (2010): Gr n er Bericht 2010. Bericht ber die Situation der österreichischen Land- und Forstwirtschaft. Bundesministerium f r Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (BMLFUW), Vienna, Austria.

Braden, S. (1999) Using Video for Research and Representation: Basic Human Needs and Critical Pedagogy. Journal of Education Media, 24, 2, 117-129.

Bunch, R. (1991): People-centered agricultural improvement. In: Haverkort, B., de Kamp, J.V. & Waters-Bayer, A. (Eds.), Joining farmer's experiments. Intermediate Technology Publication. London, United Kingdom, 23-48.

Bühl, A. (2010): PASW 18: Einführung in die moderne Datenanalyse. 12. aktualisierte Aufl.. Verlag Pearson Studium, München, Deutschland.

Chen, N. & Minh-ha, T. (1994): Speaking nearby- In: Taylor, L. (Eds.), Visualizing theory - Selected essays from V.A.R. 1990-1994 Routledge, London, United Kingdom, 433-51. Quote and bibliographic data taken from: Kindon, S. (2002): Participatory video in geographic research: a feminist practice of looking? Royal Geographical Society, Area (2003) 35.2, 142–153.

Chowdhury, A. H. & Hauser, M. (2009): Assessment of scripted and scriptless participatory video on usefulness for local seed innovation system in Bangladesh. Unpublished scientific article, University of Natural Resources and Life Sciences, Department of Sustainable Agricultural Systems, Working Group Knowledge Systems and Innovations, Vienna, Austria.

Chowdhury, A. H., Van Mele, P. & Hauser, M. (2009): Contribution of farmer-to-farmer video to food security: evidence from Bangladesh. Journal of Sustainable Agriculture. 2011; 35,4, 408-435.

Chowdhury, A. H., Hambly Odame, H. & Hauser, M. (2010): 'With or Without a Script? Comparing Two Styles of Participatory Video on Enhancing Local Seed Innovation System in Bangladesh', The Journal of Agricultural Education and Extension, 16, 4, 355-371.

Chowdhury, A. H. & Hauser, M. (2010): The potentials of participatory video. Does participatory video enhance learning for local innovation?. In: N.N. (Ed.), Proceedings of the Innovation and sustainable development in Agriculture and Food, Montpellier, France.

Chowdhury, A. H., Van Mele, P. & Hauser, M. (2011): Contribution of Farmer-to-Farmer Video to Capital Assets Building: Evidence from Bangladesh. Journal of Sustainable Agriculture, 35, 408-435.

Connell, J. (1991): Farmers experiment with a new crop. In: Haverkort, B., Van de Kamp J. & Water-Bayer, A. (Eds.), Joining farmer‘s experiments. Intermediate Technology Publications. London, United Kingdom, 217-220.

Critchley, W.R.S. (2000): Inquiry, initiative and inventiveness: farmer innovators in East Africa. Physics and Chemistry of the Earth, Part B: Hydrology, Oceans and Atmosphere. 2000, 25, 285.

CTA. (2006): Film making farmers. ICT Update: A Current Awareness Bulletin for African, Carribean and Pacific (ACP) Agriculture 34, 1-12.

Das Land Steiermark (2011): http://www.bh-judenburg.steiermark.at (30.08.2011).

David, S. & Asamoah, C. (2011): Video as a tool for agricultural extension in Africa: a case study from Ghana. International Journal of Education and Development using Information and Communication Technology 7, 1, s.p..

Ferreira, G. (2006): Participatory video for development in remote aboriginal communities. PhD Thesis. University of Guelph, Canada. Quote and bibliographic data taken from: Petheram, L., Stacey, N., Campbell, B. M. & High, C (2011b): Using visual products derived from community research to inform natural resource management policy. Land Use Policy, 29,1, 1-10.

Fry, P., Jäger, M. & Schneider, F. (2009): Zusammenfassung des Workshops „Von Bauern für Bauern – ein handlungsorientierter Projektansatz für nachhaltige Bodennutzung“. Unpublished presentation: ETH Zurich, Zurich, Schweiz [10. Wissenschaftstagung Ökologischer Landbau].

Harris, U. S. (2005): Video for Empowerment and Social Change: A Case Study with Rural Women in Fiji. In: Papoutsaki, E. & Harris, U.S. (Eds.), South Pacific Islands Communication: Regional Perspectives, Local Issues, AMIC, s.l., 186-205.

Haverkort, B. (1991): Farmer‘s experiments and participatory technology development. In: Haverkort, B., de Kamp, J.V. & Waters-Bayer, A. (Eds.), Joining farmer‘s experiments. Intermediate Technology Publication. London, United Kingdom, 3-16 .

Hendrickson, J., Sassenrath, G. F., Archer, D., Hanson, J. & Halloran, J. (2008): Interactions in integrated US agricultural systems: the past, present and future. Renewable Agriculture and Food Systems, 23, 4, 314-324.

Henman, V. & Chambers, R. (2001): Participative rural appraisal. In: Gijbers, G., Janssen, W., Hambly Odame, H. & Meijerink, G. (Eds.), Planning agricultural research. A sourcebook. CABI Publishing, Wallingford, United Kingdom and New York, United States of America, 291-299.

Hocdé, H. (1997): Crazy but not mad. In: Waters-Bayer A., Van Veldhuizen, L., Ramirez, R., Johnson, D.A. & Thompson, J. (Eds.), Farmers' research in practice. Intermediate Technology Publications. London, United Kingdom, 49-66.

Hoffmann, V., Probst, K., & Christikch, A. (2007): Farmers and researchers: how can collaborative advantages be created in participatory research and technology development. Agriculture and human values, 24, 355-368.

IFOAM (2005): Principles of Organic Agriculture , http://www.ifoam.org/about_ifoam/principles/index.html, (15.01.2012).

Kindon, S. (2002): Participatory video in geographic research: a feminist practice of looking?. Area, 35, 2, 142–153.

Kindon, S. (2009): Participatory Video. In: Thrift, N., Kitchin, R. & unspecified (Eds.), International Encyclopedia of Human Geography, Elsevier, s.l., 96-101.

Kruse J. (2008): Reader – „Einführung in die qualitative Interviewforschung". http://www.soziologie.uni-freiburg.de/kruse (15.05.2010).

Kummer, S., Ninio, R., Leitgeb, F., Vogl, C.R. (2007): Organic farmers' experiments and innovations: a debate. In: Zollitisch, W., Winckler, C., Waiblinger, S., Haselberger, A. (Eds.), Sustainable food production and ethics. Wageningen Academic Publishers, Wageningen, The Netherlands, 512-514.

Kummer, S., Ninio, R., Leitgeb, F., Vogl, C.R. (2007): Organic farmers' experiments and innovations: a debate. In: Zollitisch, W., Winckler, C., Waiblinger, S., Haselberger, A. (Eds.), Sustainable food production and ethics. Wageningen Academic Publishers, Wageningen, The Netherlands, 512-514.

Kummer, S.; Leitgeb, F.; Vogl, C. R. (2008): Changes as triggers and as results of farmers' experiments: Examples of organic farmers in Austria. In: Dedieu, B. & Zasser-Bedoya, S. (Eds.), Empowerment of the rural actors: A renewal of Farming Systems perspectives. INRA SAD 2008, 8th European IFSA Symposium, Clermont-Ferrand, France, 413-422.

Kummer, S. (2011): Organic farmers' experiments in Austria Learning processes and resilience building in farmers' own experimentation activities. Doctoral Thesis, University of Natural Resources and Life Sciences, Vienna, Austria.

Landwirtschaftskammer Steiermark (2005): http://stmk.agrarnet.info/ (30.08.2011).

Leitgeb, F., Sanz, E., Kummer, S., Ninio, R. & C.R. Vogl (2008): La discusión académica sobre experimentos de agricultores (farmers' experiments) – una síntesis // Academic discussion about farmers' experiments – a synthesis (Spanish and English). Pastos y Forrajes, 31, 1, 3-23.

Lie, R. & Mandler, A. (2009): Video in Development. Filming for Rural Change. Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, The Netherlands and Food and Agriculture Organization (FAO), Rome, Italy.

Lunch, C. (2004): Participatory Video: Rural People Document their Knowledge and Innovations. IK Notes, 71, 1-4.

Lunch, N. & Lunch, C. (2006): Insights into Participatory Video: A Handbook for the Field. Insight, s.l., United Kingdom.

Lunch, C (s.a.): Participatory Video & ICT4D. http://insightshare.org/resources/article/ict4d (01.10.2011).

Mak, S. (2001): Continued innovation in a Cambodian ricebased farming system: farmer testing and recombination of new elements. Agricultural Systems, 69,137-149.

Mayer, P. (2011): Audio-visueller Wissenstransfer – Auswirkungen von Videoprojekten auf bäuerliche Protagonisten. Unpublished Bachelor Thesis, Hochschule für Agrar- und Umweltpädagogik Ober St. Veit, Vienna, Austria.

Newing H. (2011a): Qualitative interviews and focus groups. In: Newing H, Eagle C, Puri R., Watson C.W (Eds.), Conducting Research in Conservation: Social Science Methods and Practise. Routledge, London, United Kingdom.

Newing H.(2011b): Processing and analysing qualitative data. In: Newing H, Eagle C, Puri R., Watson C.W (Eds.), Conducting Research in Conservation: Social Science Methods and Practise. Routledge, London, United Kingdom.

Odutola, K. A. (2003): Participatory use of video: A case study of community involvement in story construction. Global Media Journal, 2,2.

Padel, S. (2001): Conversion to organic farming: A typical example of the diffusion of an innovation?. Sociologia Ruralis, 41, 40-60.

Padel, S. (2005): The process of conversion to organic farming at the farm level. Unpublished working paper, Institute of Rural Sciences, University of Wales, Aberystwyth, United Kingdom.

Pant, L.P. & Hambly Odame, H. (2009): The Promise of Positive Deviants: Bridging Divides between Scientific Research and Local Practices in Smallholder Agriculture. Knowledge Management for Development Journal, 5, 2, 160-172.

Petheram, L., High, C., Campbell, B. M. and Stacey, N. (2011a): Lenses for learning: visual techniques in natural resource planning. Journal of Environmental Management, 92, 10, 2734-2745.

Petheram, L., Stacey, N., Campbell, B. M. & High, C (2011b): Using visual products derived from community research to inform natural resource management policy. Land Use Policy, 29, 1, 1-10.

Pretty, J. N. (1991): Farmers' extension practice and technology adaptation: agricultural revolution in 17th-19th century Britain. Agriculture and Human Values, 8, 132-148.

Pretty, J. (1995a): Regenerating Agriculture. Policies and Sustainability and Self-Reliance. Joseph Henry Press, Washington D.C., United States of America. Quote and bibliographic data taken from: Bentley, J.W., Boa, E., Van Mele, P., Almanza, J., Vasquez, D. and Eguino, S. (2003): Going Public: A new extension method. International Journal of Agricultural Sustainablity, 1, 2, 1008-123.

Pretty, J. (1995b) Participatory learning for sustainable agriculture. World Development, 23 8, 1247-1263. Quote and bibliographic data taken from: Odutola, K. A. (2003): Participatory use of video: A case study of community involvement in story construction. Global Media Journal, 2, 2.

Quiroz, C. (1999): Farmer experimentation in a Venezuelan Andean group. In: Prain, G., Fujisaka, S. & Warren, M.D. (Eds.), Biological and cultural diversity. The role of indigenous agricultural experimentation in development. Intermediate Technology Publications, London, United Kingdom.

Raab – Steiner E. & Benesch M. (2010): Der Fragebogen – Von der Forschungsidee zur SPSS/PASW – Auswertung. 2. Aktualisierte Auflage, Fakultas Verlags und Buchhandels AG, Vienna, Austria.

Rajasekaran, B. (1999): Indigenous agricultural experimentation in home gardens of South India: conserving biological diversity and achieving nutritional security. In: Prain, G., Fujisaka, S. & Warren M.D. (Eds.), Biological and cultural diversity. The role of indigenous agricultural experimentation in development. Intermediate Technology Publications, London, United Kingdom.

Rhoades, R. & Bebbington, A. (1991): Farmers as experimenters. In: Haverkort, B., de Kamp, J.V. & Waters-Bayer, A. (Eds.), Joining farmer‘s experiments. Intermediate Technology Publication. London, United Kingdom, 251-253.

Richards, M. & Suazo, L. (2006): Learning from success: revisiting experiences of LEIT adoption by Hillside farmers in Central Honduras. In: R. Tripp, (Ed.), Selfsufficient agriculture: labour and knowledge in small-scale farming. Earthscan Publications. Sterling, United States of America.

Rogers, E.M. (1995): Diffusion of innovations. 5th ed, Free Press, New York, United States of America.

Saad, N. (2002) Farmer processes of experimentation and innovation. A review of theliterature., CGIAR systemwide program on participatory research and gender analysis.

Scheuermeier, U. (1997): Let‘s try it out and see how it works In: Waters-Bayer, A., Van Veldhuizen, L., Ramirez, R., Johnson, D.A. & Thompson, J. (Eds.), Farmers‘ research in practice. Intermediate Technology Publications. London, United Kingdom, 31-38.

Schneider, F., Allenbach, S., Rist, S. & Fry, P. (2008): Das Projekt Von Bauern – f r Bauern–aus transdisziplinärer.VBB-Bulletin, 11, 11-15.

Schneider, F., Fry, P., Ledermann, T., & Rist, S. (2009): Social Learning Processes in Swiss Soil Protection—The ‗From Farmer - To Farmer‘ Project. Human ecology, 37, 4, 475-489.

Shaw, J. & Robertson, C. (1997): Participatory Video: A Practical Approach to Using Video Creatively in Group Development Work. Routledge, London, United Kingdom.

Stolzenbach, A. (1997) The craft of farming and experimentation. In: Waters-Bayer, A., Van Veldhuizen, L., Ramirez, R., Johnson, D.A. & Thompson, J. (Eds.), Farmers‘ research in practice. Intermediate Technology Publications. London, United Kingdom, 39-47.

Stolzenbach, A. (1999): The indigenous concept of experimentation among Malian farmers. In: Prain, G., Fujisaka, S. & Warren, M.D. (Eds.), Biological and cultural diversity. The role of indigenous agricultural experimentation in development. Intermediate Technology Publications, London, United Kingdom.

Sumberg, J. & Okali, C. (1997): Farmers‘ experiments. Lynne Rienner Publisher, Inc., Colorado, United States of America.

Sumberg, J.; Okali, C. & Reece, D. (2003): Agricultural research in the face of diversity, local knowledge and the participation imperative: Theoretical considerations. Agricultural Systems, 76, 739-753.

Uccellani, V., Rosales, M.C. (1992): Training videos: the next best thing to being there? Development communication report, 77, 12-13.

Van Mele, P., Zakaria, A. K. M. & Bentley, J. W. (2005): Watch and Learn Video education for appropriate technology. In: Van Mele, P., Salahuddin, A. & Magor, N. (Eds.), Innovations In Rural Extension: Case studies from Bangladesh. CABI Publishing, 1th edition, Cambridge & Oxfordshire, United Kingdom, 77-88.

Van Mele, P. (2006) Zooming-in Zooming-out: A Novel Method to Scale up Local Innovations and Sustainable Technologies. International Journal of Agricultural Sustainability, 4, 2, 131-142.

Van Mele, P., Zakaria, A.K.M., Begum, H.A., Rashid, H.A. & Magor, N.P. (2007): Videos that Strengthen Rural Women‘s Capability to Innovate. Communication for Development and Social Change, 1, 3, 273-293.

Van Mele, P. (2008): Multiple Approaches to Enhence Communication between Rice farmers, Rural Services Providers and Scientists. Outlook on Pest Management, 19, 6, 260-263. Quote and bibliographic data taken from: Chowdhury, A. H., Hambly Odame, H. & Hauser, M. (2010): 'With or Without a Script? Comparing Two Styles of Participatory Video on Enhancing Local Seed Innovation System in Bangladesh', The Journal of Agricultural Education and Extension, 16, 4, 355-371.

Van Mele, P., Wanvoeke J. & Zossou, E. (2010): Enhancing rural learning, linkages, and institutions: the rice videos in Africa, Development in Practice, 20, 3, 414-421.

Witteveen, L., & Enserink, B. (2007): Cultural Issues in Making and Using the Visual Problem Appraisal –Kerala‘s Coast”. Knowledge, Technology, & Policy, 19, 4, 94-118. Quote and bibliographic data taken from: Chowdhury, A. H. & Hauser, M. (2010): The potentials of participatory video. Does participatory video enhance learning for local innovation?. In: N.N. (Ed.), Proceedings of the Innovation and sustainable development in Agriculture and Food, Montpellier, France.

Witteveen, L., Enserink, B., & Lie, R. (2009): Mediated Participation: Using Filmed Narratives in Complex Multi-stakeholder Settings. The International Journal of Public Participation, 3, 1, 32-62. Quote and bibliographic data taken from: Chowdhury, A. H. & Hauser, M. (2010): The potentials of participatory video. Does participatory video enhance learning for local innovation?. In: N.N. (Ed.), Proceedings of the Innovation and sustainable development in Agriculture and Food, Montpellier, France.

Zigta, A. & Waters-Bayer, A. (2001): Outwitters of water: outstanding Irob innovation in northern Ethiopia. In: Reij, C. & Waters- Bayer, A. (Eds.), Farmer innovation in Africa. Earthscan Publications, London, United Kingdom, 144-154.

Zossou, E., Van Mele, P., Vodouhe, S. D., & Wanvoeke, J. (2009a): The power of video to trigger innovation: rice processing in central Benin. International Journal of Agricultural Sustainability, 7, 2, 119-129.

Zossou, E., Van Mele, P., Vodouhe, S. D., & Wanvoeke, J. (2009b): Comparing farmer-to-farmer video with workshops to train rural women in improved rice parboiling in central Benin. Journal of Agricultural Education and Extension, 15, 4, 329-339.

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Appendices

Invitation farmers' video workshops (German)

Bäuerliche Versuche in Österreich

Lernen aus bäuerlicher Erfahrung

Bäuerliche Versuche waren und sind ein zentraler Bestandteil der biologischen Landwirtschaft in Österreich. Fünf Bäuerinnen und Bauern stellen in vier Kurzdokumentationen ihre innovativen und „einfach genialen – genial einfachen" bäuerlichen Versuche vor. Sie zeigen auf ihren Höfen welches Potential in ihren eigenen Ideen steckt, was nötig war um diese umzusetzen und welche Erfahrungen sie damit gemacht haben. Ein besonders anregender Filmabend!

Freitag, 06 . Mai.2011, 19.30-21.30 Uhr
Gasthof Maier-Zeilinger in Obdach

Programm:

- **Begrüßung durch den Regionalleiter Franz Richter**
- **Kurze Einleitung in den Ablauf der Veranstaltung**
- **Filmschau: „Bio-bäuerliche Versuche in Österreich"**

  Selbstschließendes Weidetor: Johannes Rass aus St. Johann in Tirol stellt sein selbstschließendes Weidetor vor. Eine „einfach geniale" Erfindung die ihm 2009 Platz drei beim Bio-Austria-Tüftlerpreis eingebracht hat.

  Hölzernes Kälberiglu: Anton Fahringer (Junior), ein junger und innovativer Bauer aus Rettenschöss in Tirol präsentiert seine ganz spezielle Kälberbehausung und zeigt, dass Funktionalität, Ästhetik und Tiergesundheit Hand in Hand gehen können.

  Bodenlebenschonende Jauchenutzung: Kaspanze Simma aus Andelsbuch in Vorarlberg berichtet über eine Art der Jaucheausbringung, die das Bodenleben schont und auf ungewöhnliche Art und Weise erfrischend anders ist.

  Ganzheitliches Hofkonzept: Silvia und Thomas Kappeler erzählen über ihr Hofkonzept und zeigen, dass Nebenerwerb nicht der Hofaufgabe gleich kommt. Innovativ, vielfältig und offen – so ist ihre Form der Landwirtschaft.
- **Geleitete Diskussion zum Thema bäuerliche Versuche in Österreich**
- **Gemütlicher Ausklang bei einem Bio-Buffet**

Ihm Rahmen der Veranstaltung werden wir Sie auch zum Thema bäuerliche Versuche befragen (kurzer Fragebogen). Ihre Meinung ist uns wichtig, daher kommt es unter den TeilnehmerInnen der Befragung auch zur Verlosung eines Geschenks.

Information:
E-Mail: mayer_philipp@gmx.at
Tel.: 0650/4189334
Anmeldung nicht erforderlich.

Veranstaltet in Kooperation mit Bio Ernte Steiermark & dem Institut für ökologischen Landbau der BOKU Wien

Survey questionnaire farmers' video workshops (German)

Datum: 06.05.2011

Bäuerliche Versuche in Österreich

Ist es möglich über Videos bäuerliche Versuche anzuregen?

Liebe Bäuerinnen! Liebe Bauern!

Im Rahmen meiner Diplomarbeit an der *Universität für Bodenkultur Wien* habe ich mich gefragt ob es möglich ist über Videos bäuerliche Versuche anzuregen. Zur Beantwortung dieser Frage werden die am heutigen Abend erhobenen Daten aufbereitet und in meiner Diplomarbeit präsentiert.

Um dieses Ziel zu erreichen ist es von Bedeutung, dass Sie diesen Fragebogen vollständig und nach bestem Wissen ausfüllen. Jede Antwort ist wichtig und trägt einen entscheidenden Teil zum Gelingen dieses Projektes bei. Darum bitte ich Sie herzlichst um ihre Hilfe und Mitarbeit.

Ich ersuche Sie um eine rasche und aufrichtige Beantwortung der Fragen. Dabei möchte Sie ausdrücklich darauf hinweisen, dass es bei der Beantwortung weder richtig noch falsch gibt. Es ist einzig und allein Ihre Ansicht die zählt.

Ihre Daten werden ausschließlich anonym verarbeitet und vertraulich behandelt.

Der Fragebogen gliedert sich in drei Abschnitte:

- Der **erste Abschnitt** soll zeigen ob Sie bäuerliche Versuche auf Ihrem Betrieb durchführen. Weiters soll ihre gegenwärtige Einstellung zum bäuerlichen Versuchen aufgezeigt werden.
- Der **zweite Abschnitt** dient dazu festzustellen ob sich durch die Videopräsentation und die darauffolgende Diskussion bei Ihnen Ideen für bäuerliche Versuche ergeben haben. Zusätzlich soll dargestellt werden welche Wirkung die vorgestellten Videos auf Sie hatten. Anschließend kommt es zur Bewertung der Videos und der Fortbildungsveranstaltung an sich.
- Im **dritten Abschnitt** werden Sie noch gebeten einige Daten zu Ihrer Person und Ihrem Betrieb zu nennen. Diese ermöglichen es mir die Fragebögen aussagekräftig auszuwerten.

Ich möchte Ihnen im Vorhinein für Ihre Mithilfe bei der Beantwortung der Fragen danken und wünsche Ihnen viel Freude beim aktiven Mitwirken am heutigen Abend.

Herzlichst!

(Philipp Mayer)

Bei Rückfragen scheuen Sie sich nicht mich zu kontaktieren!

Adresse: Sechshauserstraße 91/10, 1150 Wien; Mobile: +43(0)650/4189334; E-Mail: mayer_philipp@gmx.at

Nr:_____ Datum:_____

Fragebogen zur Wirkung von Videos zu bäuerlichen Versuchen

Erster Abschnitt

Definition: Was sind bäuerliche Versuche?
Wenn wir die Begriffe „Ausprobieren", „Versuchen" oder „Experimentieren" verwenden, meinen wir damit, wie SIE überprüfen und testen, ob und wie etwas funktioniert, und ob dies für Sie und Ihren Betrieb passend ist. Gemeint ist also nicht ein wissenschaftlicher Versuch, sondern wie Versuche in der Praxis von Biobäuerinnen und Biobauern auf ihren Betrieben durchgeführt werden. Was Sie versuchen oder ausprobieren, kann eine eigene Idee sein, oder etwas, das Sie gesehen oder von dem Sie gehört haben, eine Veränderung, die Sie auf Ihrem Betrieb durchführen, und vieles mehr.

Im Folgenden zähle ich Ihnen verschiedene Arbeitsbereiche auf in denen Sie möglicherweise etwas ausprobiert haben:

- *Ackerbau*
- *Bodenbearbeitung*
- *Düngung*
- *Unkraut- oder Schädlingskontrolle*
- *Geräte und Maschinen*
- *Tierhaltung*
- *Verarbeitung*
- *Vermarktung*
- *Weitere* (z.B.: Arbeitseinteilung, Homöopathie, EM, Präparate, Arbeiten nach Mondphasen)

1 Probieren Sie auf Ihrem Betrieb verschiedene Dinge aus, oder haben Sie das früher gemacht?

*Bei der Beantwortung dieser Frage kann es nützlich sein die **Definition** zum bäuerlichen Versuchen und/oder die **Arbeitsbereiche** in denen etwas ausprobiert wird bzw. wurde nochmals durchzugehen.*

- ❑ Ja, ich probiere Dinge auf meinem Betrieb aus/ich habe Dinge ausprobiert.
- ❑ Nein, ich habe auf meinem Betrieb keine Dinge ausprobiert (entsprechend der gegebenen Definition).

Falls NEIN, gehen Sie bitte zu Frage **4** (Seite **2**).

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2 In welchen Arbeitsbereichen wurde bereits etwas ausprobiert?
Bitte kreuzen Sie zutreffende Arbeitsbereiche an und nennen Sie Beispiele für Versuchsthemen.

	Arbeitsbereich	**Versuchsthemen** (Die Nennung mehrere Versuchsthemen pro Arbeitsbereich ist möglich!)
❑	*Ackerbau*	_____
❑	*Bodenbearbeitung*	_____
❑	*Düngung*	_____
❑	*Unkraut- oder Schädlingskontrolle*	_____
❑	*Geräte und Maschinen*	_____
❑	*Tierhaltung*	_____
❑	*Verarbeitung*	_____
❑	*Vermarktung*	_____
❑	*Weitere:* _____	_____

---

3 Auf Ihrem Betrieb probieren Sie Dinge:

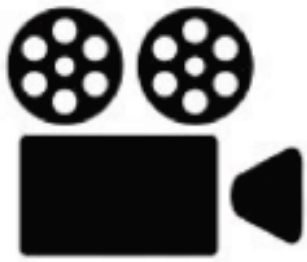
- ❑ Sehr oft (regelmäßig und mehrmals im Jahr)
- ❑ Manchmal (zumindest einmal im Jahr)
- ❑ Selten (nicht regelmäßig, nicht jedes Jahr)

4 *Bitte kreuzen Sie an inwieweit folgende Aussagen auf Sie zutreffen.*

	Trifft sehr zu	*Trifft zu*	*Trifft eher nicht zu*	*Trifft nicht zu*
1. Bäuerliches Versuchen ist für mich die Möglichkeit auf meinem Betrieb etwas Neues auszuprobieren.	❑	❑	❑	❑
2. Neues das ich auf meinem Betrieb einführe hat von Beginn an zu 100% zu funktionieren.	❑	❑	❑	❑
3. Bäuerliches Versuchen hilft mir dabei meinen Betrieb an sich ändernde Rahmenbedingungen anzupassen.	❑	❑	❑	❑
4. Sind auf meinem Betrieb Änderungen nötig so liefern mir Beratung und wissenschaftliche Forschung dazu Lösungen.	❑	❑	❑	❑
5. Bäuerliches Versuchen ist ein wichtiger Teil meines Selbstverständnisses als Bäuerin/Bauer.	❑	❑	❑	❑
6. Bäuerliches Versuchen spielt für mich keine Rolle.	❑	❑	❑	❑
7. Bäuerliches Versuchen hilft mir dabei meinen Betrieb optimal weiterzuentwickeln.	❑	❑	❑	❑
8. Bäuerliches Versuchen wirkt sich hinderlich auf meine betriebliche Entwicklung aus.	❑	❑	❑	❑
9. Es gehört zu den Aufgaben einer Bäuerin/eines Bauern Dinge auf ihrem/seinem Hof auszuprobieren.	❑	❑	❑	❑
10. Es ist nicht die Aufgabe einer Bäuerin/eines Bauern, etwas auszuprobieren. Das wird von anderen durchgeführt.	❑	❑	❑	❑
11. Ich probiere gegenwärtig viel Neues auf meinen Betrieb aus um ihn auf meine Bedürfnisse hin abzustimmen.	❑	❑	❑	❑
12. Ich muss nichts Neues ausprobieren, da alles gut läuft so wie es jetzt ist.	❑	❑	❑	❑
13. Bäuerliches Versuchen hilft mir dabei nachhaltige Lösungen für meinen Betrieb zu finden.	❑	❑	❑	❑
14. Wissenschaft und Technik liefern mir nachhaltige Lösungen für meinen Betrieb.	❑	❑	❑	❑
15. Bäuerliche Versuche sparen mir auf Dauer betrachtet Zeit.	❑	❑	❑	❑
16. Bäuerliches Versuchen ist zu zeitaufwendig.	❑	❑	❑	❑
17. Bäuerliches Versuchen ist innovativ.	❑	❑	❑	❑
18. Bäuerliches Versuchen ist rückständig.	❑	❑	❑	❑
19. Bäuerliches Versuchen ist ein wichtiger Teil der Praxis biologischer Landwirtschaft.	❑	❑	❑	❑
20. Bäuerliches Versuchen ist kein wichtiger Teil der Praxis biologischer Landwirtschaft.	❑	❑	❑	❑
21. Bäuerliches Versuchen macht mich unabhängiger.	❑	❑	❑	❑
22. Bäuerliches Versuchen macht mich abhängiger	❑	❑	❑	❑
23. Bäuerliches Versuchen spart Geld.	❑	❑	❑	❑
24. Bäuerliches Versuchen ist zu teuer.	❑	❑	❑	❑

Hier endet der erste Abschnitt des Fragebogens. Lenken Sie nun Ihre volle Aufmerksamkeit auf die vier Videobeiträge die in Kürze folgen werden. Nach den Videobeiträgen und einem Murmelgespräche mit ihrem Sitznachbarn geht es dann mit Abschnitt zwei und drei des Fragebogens weiter.

Viel Vergnügen!



Nr:_____ Datum:_____

Zweiter Abschnitt

1 Welchen Stellenwert hat bäuerliches Versuchen für Sie persönlich auf ihrem Betrieb?

❑ sehr hohen ❑ hohen ❑ niedrigen ❑keinen

2 Wurden Sie durch die gezeigten Videos motiviert bäuerliche Versuche auf ihrem Betrieb durchzuführen?

❑ Ja, durch die Videos wurde ich motiviert bäuerliche Versuche auf meinem Betrieb durchzuführen.

❑ Nein, durch die Videos wurde ich nicht motiviert bäuerliche Versuche auf meinem Betrieb durchzuführen.

3 Ergaben sich durch die Präsentation der Videos und die darauffolgende Diskussion Ideen für Dinge die Sie gerne in absehbarer Zeit auf ihrem Betrieb versuchen bzw. ausprobieren möchten?

❑ Ja, durch die Sicht der Videos und die darauffolgende Diskussion haben sich Ideen für Dinge ergeben die ich gerne auf meinem Betrieb versuchen bzw. ausprobieren möchte.

❑ Nein, durch die Sicht der Videos und die darauffolgende Diskussion haben sich keine derartigen Ideen ergeben.

Falls NEIN, gehen Sie bitte weiter zur Frage **5** (Seite **2**).

4 In welchen Arbeitsbereichen möchten Sie motiviert durch Videos und Diskussion in absehbarer Zeit etwas versuchen bzw. ausprobieren?

Bitte kreuzen Sie zutreffende Arbeitsbereiche an und nennen Sie Beispiele für Versuchsthemen.

	Arbeitsbereich	**Versuchsthemen** (Die Nennung mehrere Versuchsthemen pro Arbeitsbereich ist möglich!)
❑	*Ackerbau*	_____
❑	*Bodenbearbeitung*	_____
❑	*Düngung*	_____
❑	*Unkraut- oder Schädlingskontrolle*	_____
❑	*Geräte und Maschinen*	_____
❑	*Tierhaltung*	_____
❑	*Verarbeitung*	_____
❑	*Vermarktung*	_____
❑	*Weitere:* _____	_____

5 Hat sich ihre Einstellung zu bäuerlichen Versuchen geändert?

Bitte kreuzen Sie an inwieweit folgende Aussagen auf Sie zutreffen.

	Trifft sehr zu	*Trifft zu*	*Trifft eher nicht zu*	*Trifft nicht zu*
1. Bäuerliches Versuchen ist für mich die Möglichkeit auf meinem Betrieb etwas Neues auszuprobieren.	❑	❑	❑	❑
2. Neues das ich auf meinem Betrieb einführe hat von Beginn an zu 100% zu funktionieren.	❑	❑	❑	❑
3. Bäuerliches Versuchen hilft mir dabei meinen Betrieb an sich ändernde Rahmenbedingungen anzupassen.	❑	❑	❑	❑
4. Sind auf meinem Betrieb Änderungen nötig so liefern mir Beratung und wissenschaftliche Forschung dazu Lösungen.	❑	❑	❑	❑
5. Bäuerliches Versuchen ist ein wichtiger Teil meines Selbstverständnisses als Bäuerin/Bauer.	❑	❑	❑	❑
6. Bäuerliches Versuchen spielt für mich keine Rolle.	❑	❑	❑	❑
7. Bäuerliches Versuchen hilft mir dabei meinen Betrieb optimal weiterzuentwickeln.	❑	❑	❑	❑
8. Bäuerliches Versuchen wirkt sich hinderlich auf meine betriebliche Entwicklung aus.	❑	❑	❑	❑
9. Es gehört zu den Aufgaben einer Bäuerin/eines Bauern Dinge auf ihrem/seinem Hof auszuprobieren.	❑	❑	❑	❑
10. Es ist nicht die Aufgabe einer Bäuerin/eines Bauern, etwas auszuprobieren. Das wird von anderen durchgeführt.	❑	❑	❑	❑
11. Ich probiere gegenwärtig viel Neues auf meinen Betrieb aus um ihn auf meine Bedürfnisse hin abzustimmen.	❑	❑	❑	❑
12. Ich muss nichts Neues ausprobieren, da alles gut läuft so wie es jetzt ist.	❑	❑	❑	❑
13. Bäuerliches Versuchen hilft mir dabei nachhaltige Lösungen für meinen Betrieb zu finden.	❑	❑	❑	❑
14. Wissenschaft und Technik liefern mir nachhaltige Lösungen für meinen Betrieb.	❑	❑	❑	❑
15. Bäuerliche Versuche sparen mir auf Dauer betrachtet Zeit.	❑	❑	❑	❑
16. Bäuerliches Versuchen ist zu zeitaufwendig.	❑	❑	❑	❑
17. Bäuerliches Versuchen ist innovativ.	❑	❑	❑	❑
18. Bäuerliches Versuchen ist rückständig.	❑	❑	❑	❑
19. Bäuerliches Versuchen ist ein wichtiger Teil der Praxis biologischer Landwirtschaft.	❑	❑	❑	❑
20. Bäuerliches Versuchen ist kein wichtiger Teil der Praxis biologischer Landwirtschaft.	❑	❑	❑	❑
21. Bäuerliches Versuchen macht mich unabhängiger.	❑	❑	❑	❑
22. Bäuerliches Versuchen macht mich abhängiger	❑	❑	❑	❑
23. Bäuerliches Versuchen spart Geld.	❑	❑	❑	❑
24. Bäuerliches Versuchen ist zu teuer.	❑	❑	❑	❑

6 Wie zufrieden waren Sie mit den einzelnen Elementen der Videos?

Bitte Zutreffendes ankreuzen.

	Sehr zufrieden	Zufrieden	Weniger zufrieden	Nicht zufrieden
1. Inhalt	❑	❑	❑	❑
2. Bilder	❑	❑	❑	❑
3. Ton	❑	❑	❑	❑
4. Filmmusik	❑	❑	❑	❑
5. Gesamteindruck	❑	❑	❑	❑

7 Möchten Sie zusätzlich noch etwas zu den Videos anmerken? Falls ja finden Sie hier Raum:

_____

_____

_____

_____

8 Inwieweit treffen die folgenden Aussagen zur Wirkung der Videos Ihrer Meinung nach zu?

Bitte Zutreffendes ankreuzen.

	Trifft sehr zu	*Trifft zu*	*Trifft eher nicht zu*	*Trifft nicht zu*
1. Die Videos haben mich motiviert selbst mehr auf meinem Betrieb zu versuchen.	❑	❑	❑	❑
2. Die Videos haben mir die Bedeutung bäuerlichen Versuchens bewusster gemacht.	❑	❑	❑	❑
3. Die Videos haben mich nicht angesprochen.	❑	❑	❑	❑
4. Die Videos haben mein Wissen bereichert.	❑	❑	❑	❑
5. Die Videos haben meine Einstellung zum bäuerlichen Versuchen positiv beeinflusst.	❑	❑	❑	❑
6. Ich sehe in den Videos ein großes Potenzial nachhaltige Entwicklungen im ländlichen Raum anzuregen.	❑	❑	❑	❑
7. Die Videos sind nicht dazu geeignet Wissen zu bäuerlichen Versuchen zu vermitteln.	❑	❑	❑	❑
8. Ich bin der Meinung, dass die Videos zur Wissensvermittlung von Bauern für Bauern geeignet sind.	❑	❑	❑	❑
9. Nachdem ich die Videos gesehen habe fühle ich mich in meinem Handeln als Bäuerin/Bauer bestärkt	❑	❑	❑	❑
10. Über die Videos wird biologische Landwirtschaft auf authentische Art und Weise dargestellt.	❑	❑	❑	❑

9 Wie gut hat Ihnen die Fortbildungsveranstaltung gefallen?

Bitte bewerten Sie die Fortbildungsveranstaltung mittels Schulnoten von 1 bis 5.

_____ Gesamtkonzept der Veranstaltung (Aufbau, roter Faden, Inhalte).
_____ Organisation (Termine, Dauer etc.)
_____ Praxisbezogenheit
_____ Atmosphäre
_____ Sonstiges (bitte anführen): _____

10 Inwieweit treffen die folgenden Aussagen hinsichtlich der Fortbildungsveranstaltung zu?

Bitte Zutreffendes ankreuzen.

	Trifft sehr zu	*Trifft zu*	*Trifft eher nicht zu*	*Trifft nicht zu*
1. Die Veranstaltung hat mein Wissen erweitert.	❑	❑	❑	❑
2. Die Veranstaltung hat mich dazu angeregt selbst mehr auf meinem Hof zu versuchen.	❑	❑	❑	❑
3. Ich würde eine Fortbildungsveranstaltung dieser Art wieder besuchen.	❑	❑	❑	❑
4. Die Veranstaltung entsprach nicht meinen Vorstellungen.	❑	❑	❑	❑
5. Ich hab das Gefühl wenig von dieser Veranstaltung mit nach hause zu nehmen.	❑	❑	❑	❑
6. Ich werde meinen Bekannten von dieser Veranstaltung im positiven Sinne berichten.	❑	❑	❑	❑
7. Die Veranstaltung war innovativ.	❑	❑	❑	❑

11 Die gesamte Fortbildungsveranstaltung beurteile ich als:

❑ sehr gut ❑ gut ❑ weniger gut ❑ ungenügend

Dritter Abschnitt

12 Zur Person

Geschlecht ❑ Frau ❑ Mann

Geburtsjahr _____

Aufgewachsen:

Bitte Zutreffendes ankreuzen.

❑ in der Region (Umkreis 30 km) ❑ außerhalb der Region (Inland) ❑ im Ausland

13 Sind Sie auf einem landwirtschaftlichen Betrieb aufgewachsen?

❑ Ja
❑ Nein

14 In welchem Jahr haben Sie begonnen als Bauer zu arbeiten?

Im Jahr _____

15 In welchem Jahr haben Sie auf Bio umgestellt?

Im Jahr _____

16 Haben Sie eine landwirtschaftliche Ausbildung gemacht?

❑ Ja
❑ Nein

17 Bitte geben Sie Ihren höchsten Ausbildungsabschluss an:

❑ Pflichtschulabschluss
❑ Lehrabschluss
❑ Fachschulabschluss
❑ Meisterprüfung
❑ Matura
❑ Akademie (Diplom)
❑ Universitätsabschluss

18 Erwerbsform

❑ Vollerwerb
❑ Nebenerwerb
❑ Hobbybetrieb

19 Landwirtschaftliche Flächen

Gesamtfläche mit Wald (inkl. Pachtflächen)	_____ha
Ackerland	_____ha
Grünland	_____ha
Wald	_____ha
Sonstige (bitte anführen): _____	_____ha
Sonstige (bitte anführen): _____	_____ha

20 Tierhaltung

Rinder	_____ Stück
Schweine	_____ Stück
Schafe	_____ Stück
Ziegen	_____ Stück
Hühner	_____ Stück
Bienen	_____ Völker
Sonstige Nutztiere (bitte anführen): _____	_____ Stück
Sonstige Nutztiere (bitte anführen): _____	_____ Stück

21 Betriebszweige und Tätigkeiten am Betrieb:

Wenn am Betrieb vorhanden bitte ankreuzen.

- ❑ Ackerbau
- ❑ Waldwirtschaft
- ❑ Milchwirtschaft
- ❑ Fleischerzeugung
- ❑ Legehennen
- ❑ Tierzucht
- ❑ Imkerei
- ❑ Obstbau
- ❑ Gemüsebau
- ❑ Weinbau, Weinwirtschaft
- ❑ Verarbeitung

22 Sonstige Tätigkeiten am Betrieb

Wenn am Betrieb vorhanden bitte ankreuzen.

- ❑ Direktvermarktung
- ❑ Landwirtschaftliche. Lohnarbeit (z.B. auf Maschinen Ingbasis)
- ❑ Urlaub am Bauernhof
- ❑ Catering, Buschenschank /Heurigen oder ähnliches
- ❑ Schule am Bauernhof
- ❑ Betreutes Wohnen (für Menschen mit besonderen Bedürfnissen, alte Menschen,…)
- ❑ Alternative Energiegewinnung (Biogas, Photovoltaik,…)
- ❑ Kurse und Seminare am Bauernhof
- ❑ Sonstige (bitte benennen): _____

Dieses Blatt wird vom restlichen Fragebogen getrennt aufbewahrt um die Anonymität der befragten Person sicherzustellen!

Sind Sie daran interessiert, die Ergebnisse der Befragungen zu erhalten?

❑ Ja ❑ per Post ❑ per Mail
❑ Nein

Falls NEIN *müssen Sie keine Personendaten anführen.*

Personendaten

Name: _____

Adresse: _____

Telefonnummer: _____

Email: _____

Homepage: _____

Vielen Dank für ihre Mitarbeit! ☺

Dissemination of results (German)

Workshop Knowledge Transfer – Bio-Net 2011

BIO-NET 2011

Neue Ideen für die biologische Landwirtschaft

Mit 30 Dingen, die die Bio-Welt verändern.

„BODENKRÜMEL"

03/03/2011
9.30–19.00 Uhr
Kardinal-König-Haus
Kardinal-König-Platz 3
1130 Wien

FiBL

bio net LFI

BIO-NET 2011 NEUE IDEEN FÜR DIE BIOLOGISCHE LANDWIRTSCHAFT

Die Biologische Landwirtschaft ist, wie die meisten Bereiche der modernen Gesellschaft, vor allem eines: wissensintensiv. Dafür braucht es neue Formen des Austauschs und der Vernetzung. „Bio-Net 2011" bietet deshalb ein neues, experimentelles Forum für Bio-Gespräche zwischen allen, die in und mit der Bio-Landwirtschaft arbeiten. Das LFI und FiBL Österreich laden Bio-Interessierte ein, ihr Wissen und ihre Erfahrungen rund um die Themen Boden, Pflanze, Tier, Mensch und Wissensaustausch mit anderen zu teilen, zu diskutieren und durch neue Sichtweisen zu erweitern.

Teil 1 der Veranstaltung wirft am Vormittag einen österreichischen und einen internationaler Blick auf den Stand der Bio-Forschung. Dazu referieren ExpertInnen aus Österreich, Tschechien und der Schweiz. Teil 2 (auch ohne Teil 1 besuchbar) stellt am Nachmittag am „Schwarzmarkt Bio-Wissen" wichtige Bio-Dinge, die Leben und Arbeiten in der Biologischen Landwirtschaft zur Zeit prägen, in den Mittelpunkt der Gespräche.

LE 07-13

PROGRAMM

01. DER STAND DER BIO-FORSCHUNG

Moderation: Reinhard Geßl, FiBL Österreich

08.30	Registrierung/Möglichkeit für Morgenkaffee
09.30	**Einleitung und Eröffnung:** Reinhard Geßl | FiBL Österreich, Symposiumsleiter **Begrüßung:** Alois Posch | Lebensministerium
10:00	**Bio-Wissen für die Zukunft – Von einer Forschungsvision zu einer Forschungsagenda für den Biolandbau** Urs Niggli | FiBL Schweiz **Forschungsvision 2025 für die biologische Land- und Lebensmittelwirtschaft** Jiri Urban | Technology Platform for organic food and farming; tschechischer Vizelandwirtschaftsminister a. D. **Bio-Landwirtschaftsforschung 2010 in Österreich** Elfriede Fuhrmann | Lebensministerium **Bauernblick und Forscherblick** Christa Groß | Bio Austria
12.00	Mittagspause mit Buffet

02. DER STAND DER DINGE

Kann auch ohne Teilnahme am Vormittag besucht werden.

13:00	Anmeldung (unbedingt erforderlich)
13.30	**Schwarzmarkt für Bio-Wissen I – „Bio-Dinge, die die Welt verändern"** Nehmen Sie Platz zu einem Zwiegespräch der besonderen Art. Ein Programmpunkt zum spielerischen Erfahrungsaustausch von ForscherInnen, BäuerInnen und anderen Bio-ArbeiterInnen. 30 ExpertInnen präsentieren 30 Dinge, die zurzeit die Bio-Welt prägen
15.30	**Schwarzmarkt Bio-Wissen II – Werkstattgespräche** In 1,5 stündigen Werkstattgesprächen präsentieren Ihnen 5 „ExpertInnen" 5 spannende Entwicklungen zu den 5 Themen Boden, Pflanze, Tier, Mensch und Wissensaustausch.
17:00	Zusammenfassung und Diskussion
18.00	Kleine Bio-Sause (Bio-Buffet und Musik)
19.00	Ende der Veranstaltung Bio-Net 2011

DIE THEMEN

BODEN

Der Regenwurm wurde in der Schweiz zum Tier des Jahres 2011 gewählt. Nicht weiter verwunderlich, pflegt und bearbeitet er doch eines unserer kostbarsten Güter: den Boden. Die langfristige Sicherung der Bodenfruchtbarkeit zählt zu den Grundprinzipien des Biolandbaus. Dementsprechend sind effiziente Ressourcennutzung, Humusaufbau und Bindung von Kohlenstoff, Nährstoffmobilisierung und Verbesserung der Nährstoffkreisläufe Tier – Boden – Pflanze, reduzierte Bodenbearbeitung... einige der Themen, die Bio-Forschung und Bio-Praxis gleichermaßen beschäftigen.

PFLANZE

Ob Nahrungsgrundlage für Bodenleben, Tier und Mensch, Ausgangsprodukt für die Bildung von Nähr- und Dauerhumus oder „Stickstofflieferant" – Pflanzen sind wesentliche Pfeiler eines geschlossenen Kreislaufsystems am Bio-Betrieb. Entsprechend umfangreich sind auch die Fragen für die sich „Feld-ForscherInnen" (also WissenschafterInnen genauso wie Bio-BäuerInnen und Bio-Bauern) interessieren. Ihr gemeinsames Ziel ist es, für die Praxis umsetzbare Lösungen zu aktuellen Schlüsselproblemen zu finden.

TIER

Die „Kuh ist ein Klimakiller", das „Schwein frisst das Soja der Armen" und die „Hennen übertragen die Grippe". Das sind böse Schlagzeilen, für die unsere Nutztiere nichts können. Dafür erfahren die Bienen im Moment die verdiente Aufmerksamkeit und steigen in der Liste der wichtigsten Nutztiere stetig nach oben. Themen wie Kastrationsverbot, 100 % Bio-Fütterung, Auslauf für Kälber oder auch Anbindehaltung beschäftigen BäuerInnen wie ForscherInnen. Zu den schwierigsten Fragen gibt es meist überraschend einfache Lösungen.

MENSCH

Lebensmittel sind mehr als die schön verpackte Form von Wasser, Nährstoffen und Kalorien. Die Berücksichtigung des gesamten Produktionsprozesses vom Feld/Stall bis auf den Teller, die vergleichende Forschung zu biologischen und konventionellen Lebensmitteln und ihrem gesundheitlicher Einfluss auf Tier und Mensch, die Risikoabschätzung neuer Technologien, der Ausbau von Qualitätssicherungssystemen und dynamischer Analysemethoden sind Konsequenzen eines ganzheitlichen Bio-Qualitätsbegriffs.

WISSENSAUSTAUSCH

Während BäuerInnen wissen wollen, ob und unter welchen Bedingungen „es" funktioniert, fragen WissenschafterInnen nach Theorien und Konzepten. Die verschiedenen Sicht- und Arbeitsweisen führen dennoch oft zu ähnlichen Ergebnissen. Die Weiterentwicklung der Bio-Landwirtschaft braucht das Zusammenspiel verschiedener Wissensformen. Lässt sich die Kluft zwischen Forschung und Praxis überwinden, indem wir „Wissens-Dingen" und ihren konkreten Praktiken folgen? Und brauchen wir generell neue Formen des Austauschs?

„SCHWARZMARKT BIO-WISSEN": DAS WISSEN DER BIO-DINGE

Der Biolandbau ist Wissen, Technik und Praxis aber auch eine ökologische Philosophie und Vorreiter einer nachhaltigen „materiellen Kultur". Als solcher ist er wissensintensiv und für den Austausch zwischen verschiedenen AkteurInnen oft zu komplex. Nicht so beim „Schwarzmarkt für Bio-Wissen". Hier stehen einfache, für die Bio-Landwirtschaft aber entscheidende Dinge im Mittelpunkt. Ob eine Hand voll Boden, ein Spaten, Gemüsesaatgut, Pflanzenstärkungsmittel, Homöopathikum, Mikroskop, Fotoapparat, Plattenwaage... alles ist möglich, alles ist erlaubt. Hier wird auch nicht getrennt in TheoretikerInnen und PraktikerInnen, Wissende und Nicht-Wissende. Ziel des spielerischen Erfahrungsaustauschs ist es, das Wissen, das in Bio-Dingen steckt, gemeinsam zur Sprache zu bringen. Woher stammen sie? Was „machen" sie und wie verändern sie die landwirtschaftliche Praxis? Wie funktionieren sie und was ist neu an ihnen? Nehmen Sie Platz zu einem Zwiegespräch der besonderen Art. In wechselnden Dialogen von etwa 10 Minuten werden anhand innovativer Objekte, Materialien oder Technologien verschiedenste Aspekte der Biologischen Landwirtschaft beleuchtet.

SCHWARZHÄNDLERINNEN DES BIO-WISSENS GESUCHT!

Haben Sie selbst ein „Bio-Ding", das Ihre Arbeit in oder mit der Bio-Landwirtschaft in der letzten Zeit wesentlich geprägt hat? Beschreiben Sie (ohne großen Ernst) die Biographie/Geschichte dieses Bio-Dings im beiliegenden Formular, schicken Sie es an uns und melden Sie sich als Expertin an. Im Schwarzmarkt für Bio-Wissen können Sie wechselnden GesprächspartnerInnen die Geschichte Ihres Dings in Zwiegesprächen erzählen.

DIE EXPERTINNEN

Die fünf Schwerpunktthemen von „Bio-Net 2011" werden jeweils von einer Expertin oder einem Experten betreut, die oder der auch einen der Workshops am Nachmittag leitet:

- → **Markus Danner,** Bio Austria Salzburg (Thema Boden)
- → **Andreas Surböck,** BOKU, FiBL Österreich (Thema Pflanze)
- → **Werner Hagmüller,** LFZ Raumberg-Gumpenstein (Thema Tier)
- → **Claus Holler,** Bio Austria (Thema Mensch)
- → **Susanne Kummer,** BOKU (Thema Wissensaustausch)

DIE ZIELGRUPPEN

Angesprochen sind alle Menschen, denen die Biologische Landwirtschaft ein wichtiges Anliegen ist und die diese aktiv weiterentwickeln wollen, z. B. Bio-BäuerInnen, Bio-BeraterInnen, Bio-ForscherInnen, Menschen aus der Bio-Verarbeitung und dem -Handel, InteressensvertreterInnen, JournalistInnen oder interessierte KonsumentInnen.

ANMELDUNG UND INFORMATION

Online-Anmeldeformular und Informationen: www.bio-net.at
Anmeldeschluss: 25. Februar 2011 – Anmeldung ist auch vor Ort möglich.
Teilnahmegebühr für Mittagessen, Pausenverpflegung und Abendbuffet EUR 35,– Die Zahlung erfolgt in bar vor Ort.

Bio-Net 2011 wird finanziell unterstützt von Bund, Ländern und der EU

Article Biorama

VIDEO-DOKUMENTATION – LOKALES WISSEN LERNEN: BIO-BÄUERLICHE VERSUCHE IN ÖSTERREICH

In Anlehnung an das international-vergleichende Forschungsprojekt Organic Farmers' Experiments – Learning Local Knowledge in Austria, Israel, and Cuba—wurde im Herbst 2010 des Videoprojekte Bio-bäuerliche Versuche in Österreich – Lokales Wissen lernen—von Philipp Mayer (Student Masterstudium Ökologische Landwirtschaft) aus der Taufe gehoben. Vorrangiges Ziel war es bio-bäuerliche Versuche zu dokumentieren, um Einblicke in die Versuchstätigkeit von Biobäuerinnen und Biobauern zu erlangen. Während der spannenden und oft abenteuerlichen Dreharbeiten eröffnete sich dem Videoteam die Perspektive auf eine experimentierfreudige, innovative, selbstbestimmte und offene Landwirtschaft, tief verwurzelt in den Regionen des ländlichen Raums aber immer bereit für einen Blick über deren Grenzen. In vier kurzen Dokumentationen werden innovative bäuerliche Versuche präsentiert. Jeder ist für sich einzigartig und als Anpassung an sich ändernden Rahmenbedingungen einer bewegten Zeit zu verstehen. Gleichzeitig eröffnen die Videos aber auch authentische Einblicke in die landwirtschaftliche Lebensweise und zeigen dabei welche überraschende Vielfalt an Zugängen diese zulässt – Landwirtschaft neu erleben lernen.

Article BIO AUSTRIA – Die Fachzeitschrift für Landwirtschaft und Ökologie

SPLITTER

Foto: Theurl

0 % Fütterung

terung von Bio-Schweinen und Bio-lügel. Die bisherige Regelung über Zukauf von 5 % konventioneller termittel bei Schweinen und Geflü- läuft mit Jahresende 2011 aus. Laut prünglichem Fahrplan der EU-Bio- ordnung sollten ab Jänner 2012 an -Schweine und Bio-Geflügel 100 %

Lokales Wissen

Philipp Mayer, Student der Ökologischen Landwirtschaft an der Universität für Bodenkultur Wien, hat vier Videodokumentationen über innovative bäuerliche Versuche gemacht. Zu sehen sind folgende Beiträge:

- Silvia und Thomas Kappeler, ganzheitliches Hofkonzept
- Kaspanaze Simma, bodenschonende Jauchewirtschaft
- Anton Fahringer, spezielle Kälberbehausung
- Johannes Rass, selbstschließendes Weidetor

http://www.biorama.at/bio-baeuerliche-versuche-in-oesterreich/
***Rückmeldungen:** mayer_philipp@gmx.at oder posten Sie gleich unter den Videobeiträgen Ihre Kommentare.*

Article www.biowissen.org

Bio-Wissen.org

Kaum zu glauben! Als es schon niemand mehr zu hoffen gewagt hat, beschert uns der Sommer unter Aufbietung all seines Könnens doch noch einmal ein Stelldichein. Es gilt also, die wahrscheinlich letzten heißen Sonnentage im Freien zu genießen. Doch auch auf die kommende Herbstsaison können wir uns getrost freuen, denn abgesehen von bunten Blättern flattert demnächst auch neues Bio-Wissen ins Haus

Die erfolgreichen „Bio-Wissen"-Plakate gehen in die nächste Runde und widmen sich diesmal den Kernkompetenzen des Biolandbaus. 4 Plakate zu den Schwerpunktthemen Boden, Klimaschutz, Biodiversität und Gentechnik informieren in gewohnt umfassender und pointierter Manier darüber, was Humus und CO_2 miteinander zu tun haben, wie viel Erdöl für die Produktion mineralischer Stickstoffdünger notwendig ist, warum im Biolandbau die Grüne Gentechnik konsequent abgelehnt wird und was Biodiversität mit dem Empire State Building zu tun hat.

Um die Wartezeit zu verkürzen, steht das aktuelle Plakat zu Bio-Obst nun zum Download bereit. >> will wissen

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Bio-Wissens-Dinge: Biobäuerliche Versuche – eine Videodokumentation

Am „Schwarzmarkt für Biowissen" (Infos zur Veranstaltung) wurde sie bereits präsentiert, nun ist die Videodokumentation „Biobäuerliche Versuche in Österreich – Lokales Wissen lernen", die Philipp Mayer im Rahmen seines Masterstudiums an der Universität für Bodenkultur realisiert hat, auch online abrufbar. Vorrangiges Ziel war es, biobäuerliche Versuche zu dokumentieren, um Einblicke in die Innovationsfreudigkeit von Bio-BäuerInnen zu erlangen. Dabei lernte das junge Filmteam experimentierfreudige, innovative, selbstbestimmte und offene Menschen kennen, die, tief verwurzelt in den Regionen des ländlichen Raums, einen oft überraschend offenen Blick über deren Grenzen zeigten. Die Videodokumentationen präsentieren nicht nur innovative bäuerliche Versuche, sondern eröffnen zusätzlich authentische Einblicke in die bäuerliche Lebensweise und zeigen, welche Vielfalt an Zugängen diese zulässt: >> will sehen