

Farming and the environment: Four viewpoints of Austrian farmers

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Abstract - Besides its positive aspects farming also has negative impacts on the environment and on nature (e.g. pesticide and fertilizer leaching). Hence, it is crucial for agriculture and the people involved in the food-sector to work on specific solutions to reduce these negative environmental impacts of agriculture while improving its production capacity. We propose that first and foremost it is reasonable to understand the farmer as the most important agent when it comes to decide how agricultural products are produced. By employing Q methodology we identify four distinct viewpoints among farmers in Lower Austria which differ with regard to the emphasis these farmers place on environmental issues, economic considerations and other aspects like influence of circumstances and different ways to protect natural resources. The results let us conclude that in designing policies and measures which should alter the farmers' behaviour with regard to environmental benign production systems the specific characterisations of the viewpoints should be taken into consideration since they offer insights into different mind-sets of farmers and therefore ways to influence them.

INTRODUCTION

Through the cultivation of monocultures the pressure of pests logically increases which is often followed by increased usage pesticides. Growing concern exists about the health implication of these pesticides. Additionally, the leaching and run off of fertilizers into near watersheds is seen as very problematic in some regions (Wilson and Tisdell, 2001; Tilman et al., 2002). Another point worth mentioning is the growing concern that biodiversity is decreasing even on parcels which are under some form of agri-environmental payment (Kleijn et al., 2001). Thus, modern agriculture faces many challenges especially when it comes to protect natural resources. How the influence of agriculture is shaped and which forms of agriculture do influence the environment in what specific way may still be debated. However, it seems reasonable to understand the farmer as the most important agent when it comes to decide how agricultural products are being produced and agricultural land is being managed. In their analysis on farmers' behaviour the authors conclude that: "No two farmers are identical" (DEFRA, 2008). On the other hand the advantages of a classification seem clear when

Emtage et al. (2006) write: "Developing a landholder 'typology' is one way of avoiding a blanket approach to landholders, and at the same time recognising that it is impossible to have policies and programs tailored to each individual." A classification can be advantageous when it combines multiple dimensions and is also able to show interrelation between several personal and environmental aspects (Emtage et al., 2006). Hence, through our research we wanted to offer farmers the possibility to express their viewpoints holistically by using a perfectly suited method for such endeavour- Q methodology. We were interested in the rationales of the different viewpoints and the resulting typology constructed by these viewpoints.

METHOD

We employed Q methodology to structure the discourse surrounding the topic agriculture and its impact on the environment from a farmer's perspective. Q methodology is a method used to study the attitudes or perspectives of people towards a wide range of possible subjects (Webler et al., 2009). In order to apply the method a specific topic or more precisely the research question has to be selected and the various debates among this topic have to be identified (Watts and Stenner, 2012). However, we assume that this discourse about nature or natural resources and farming is not limited to farmers exclusively but also other people and institution will influence it. In order to cover the breadth of the debate, we interviewed 17 experts from different areas and various distances to practical agriculture. The areas covered are agricultural research, agricultural administration, the chamber of agriculture, NGOs with environmental and economic background, as well as farmers. Based on the interview-transcripts we extracted 250 statements that deal with the topic at hand. In order to reduce this concourse to a manageable Q sample (i.e. a representative sample of any discourse) we decided to use a matrix which was constituted of the topics business, environment and agri-environmental programmes. The other dimension of that matrix was based on the forms any claim can have within a discourse (see Dryzek and Berejikian, 1993): designative, evaluative and advocative. We assigned every statement to one of the nine possible combinations followed by a random selection of four statements from each cell. Through this reduction process we composed a Q sample of 36 statements. The sampling strategy for the P sample (i.e. the participating farmers) was

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grounded on the criteria found to be significantly correlated (positive or negative) with environmentally friendly behaviour of farmers. We succeeded in finding at least one representative of each possible combination of criteria leading to a P sample of 30 farmers. The farmers were asked to rank the 36 statements with regard to the degree of their agreement with the statement and additional data to that Q sorting were gathered. As a result of principle component analysis and varimax rotation we identified four distinct viewpoints within the concourse. The four viewpoints differ with regard to the emphasis these farmers place on environmental issues, economic considerations and other aspects like the influence of circumstances and their viewpoints toward different ways to protect natural resources.

RESULTS

We identified and revealed four distinct social perspectives towards the topic *farming and environment*. The first position is characterized by a very strong environmental attitude which does not allow economic considerations or issues like the specific design of agri-environmental programmes to interfere with their strong focus on these issues. Specific for this viewpoint is the idea that only small family farms are able to protect natural resources in the demanded way. A diverse and environmentally friendly regional agriculture is central for that perspective. The second perspective is characterized in the way that they seem to be mostly influenced by the surroundings and circumstances (i.e. external drivers) in which they produce. It seems that for these farmers primarily the retail sector, consumers and agricultural-policy are to blame for the negative impacts agriculture may have on the environment. They also strongly criticise the design of agri-environmental programmes and their usefulness for nature. The third perspective is very much economically focused and argues that environmental benign behaviour needs to be communicated more strongly so people are informed about which pro-environmental behaviour is already part of modern farming. Besides that, growth, income and specialization play a crucial role in the mind-set of these farmers. For them it is also more important than for others to stick to the regulations from AEP and to behave according to these regulations no matter how useful they may be. The fourth and final viewpoint is to a large extent similar to the first factor but differs especially in the way the circumstances are viewed. In this respect factor four takes the view that consumers and the way environmental friendly behaviour of farmers is communicated to them play a crucial role when it comes to preserve nature. For them an attractive landscape must be preserved mainly in touristic region which points out the strong economic focus which accompanies environmental aspects. Additionally, these farmers do not believe in the merits of technical progress for nature.

INTERPRETATION AND DISCUSSION

The results strongly suggest that environmental concerns are regarded differently by different types of farmers. This is very much in line with recent

publication on farmers' behaviour. Dealing with only one type of farmer and neglecting possible other mind-sets may result in efficiency losses when designing policies meant to alter behaviour. It seems that at least one type of farmers is very much influenced by the circumstances in which he/ she is operating. Hence, neglecting these circumstances when trying to alter behaviour can be problematic. Only the holistic view on the divers mind-sets can offer hints where to address behavioural change. No type thinks for example that endangered species should not be cared upon which seems in line with the results by Davies and Hodge (2007) that there exists a high degree of responsibility among all kind of farmers. It could be especially this stewardship responsibility which must be tackled in order to obtain better results in the area of environmentally friendly farming.

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