

Why animals on (biodynamic) farms? - an In-farm research approach

INTRODUCTION

Modern farming differs in many ways from the agriculture practised just 100 years ago. With the invention of artificial fertilizer the manure of cows and other farm animals became a waste product. Also the physical strength of animals became negligible compared to that of modern machines. Animal husbandry diverted to focus on production of milk, eggs and meat. Due to changes in ethical values nowadays farm animals are often considered to function controllably at all times like industrial machinery (Rahmann 2003, Baars 2006). In conjunction many farms operate crops exclusively. This common practise on conventional farms is frequently implemented on organic and even biodynamic (bd) farms, as well. Recent statistics show a clear trend for the increase in this type of farm (Willer et al. 2009). Still bd farms differ in many ways from conventional and even organic farms. The bd standards are more demanding than anywhere else, those of the bd association Demeter request animal husbandry explicitly (Demeter International 2009).

In 1924 the Austrian philosopher Rudolf Steiner gave eight lectures on agriculture, which today are perceived as one of the roots of organic farming (Lockeretz 2007). Steiner stated: *Now the plants growing on Earth are not the only things to consider – a certain complement of animal life also belongs to each region on Earth. [...], we cannot disregard the animals, because the best cosmic qualitative analysis, if I may put it like that, takes place in the interaction between the plants and animals of a given area [...].* (Steiner 1924). In organic farming it is common knowledge that keeping cattle on farms has a positive impact because of manure production enhancing soil fertility (Davis and Abbott 2006). In bd agriculture the horn preparations are dealt with as the method of choice to enliven the biological activity in the soil and for plant resilience (Turinek et al. 2009). Biodynamic food production is meant to result in upgraded food quality for humans (). But are animals essential for the so called farm individuality beyond the mentioned reasons?

Nowadays farmers are under repeated pressure, brought up by economic constraints like decreasing milk prices (Schädeli 2009) and the discussion about the methane emission of cows in connection to climate change. As a result, an increasing number of farmers, e.g. in Switzerland back out of organic farming and return to conventional production again or close down completely (Reissig et al. 2009). Especially in mixed farming enterprises like in bd farming the question arises: Why keep animals? At first there are production and economic reasons. Secondly there are reasons like soil fertility. And for bd farms it is because the importance of animals is pointed out in the agricultural course and it is laid down in the standards. But all these reasons come under pressure. Farmers, and especially animal holders are highly devoted to their form of farming. Could, taking closer insights of farms bring out aspects as to why animals are kept? Science is often asked to help solve problems or invent innovations. But science can just as well help to reflect and to bring issues to consciousness and generate not only knowledge of actions but as well knowledge of orientation (Fischbeck 2003) so as to optimize systems e.g. farms, respectively. Agricultural science especially, was always confronted with the task to address its subject – the farm organism – adequately (). The German Research Society DFG stated in its memorandum on agricultural sciences that “agricultural sciences are different to other sciences by including mankind in its methodology” (DFG 2005)¹. Likewise Daston and Galison (2007) in their book about objectivity stated that every scientist is always associated with his research topic, nowadays becoming an expert in trained judgement in his field of research. If farms are understood and looked at as organisms or kind of individualities it might be helpful to investigate them in their inner and outer context. Deeper insights prevent the scientist from conclusions which might work in a laboratory but not under farm conditions. In this context the topos “In-farm research” was brought up (). In comparison to “On-farm research” where experimental field trials are carried out on farm sites to come closer to the specific conditions (Muggli 1994, Fry 2001, Baars 2007), “In-

¹ “In this sense, agricultural science must be seen as a phenomenological science....

Consequently, in all its observations of the natural biotic and abiotic environment, mankind is always seen as an active player and an integral part of the research approach. This reference to humans as active players on the one hand gives agricultural science a distinct process orientation and on the other distinguishes it from related disciplines, for example biology...” p.

farm research” includes the farmers knowledge (Vereijken 1997) in the transdisciplinary research process (Vogtmann et al. 2002) and integrates the scientist temporarily in the farming process.

The herewith presented study tries to give an answer to the question “why keeping animals” as well as to extend the In-farm research methodology.

Choosing agriculture as subsistence or production strategy often goes hand in hand with a differentiated view on agricultural issues and specific topics, as well as interest and enjoyment in working scientifically (Meyer-Glitza 1999, Schumann 2008). A pertinent aim of this study is to support and acknowledge the farmer as an expert on his own farm (Baars 2006). This concept allows farmers to reflect on their work and to think about issues which go unnoticed in daily working life (Fry 2001, Baars 2007). This also signifies to encourage the self-motivation and aplomb in their own achievements (Meyer-Glitza 1999). Interviews offer an opportunity to get close to the farmer’s own experience, thoughts, ideas and philosophy. In addition, the impressions and observations of the scientist himself complement the farmers views.

METHODS

Bockemühl et al. (1984, 1992) and others have developed methods to identify qualities of local areas (Buess 1996, Schubert and Hoffmann 1996, Vereijken, 1997; () 1997) and of animals, especially birds (Zehnter 2008). Recent research on aesthetic examinations on landscapes have used comparable approaches (Wolfart 2006, Schüpbach et al. 2009). However corroborate observations on farms are lacking.

The farms studied were chosen because of their representativeness of specific regions and due to their special awareness of biodynamic questions, therefore the co-operation on the research project was provided for (as requested by Baars 2007, Schumann 2008). Fall and early springtime were chosen as the main investigation periods, because it is a down shifting period on farms and collaboration could be fully ensured. Our selection of farms does not claim to be

over all representative, because of the small number and the fact that every farm is an individuality on its own.

Research was performed on the farms for ten days to provide for an appropriate settling in of the scientist. Working data, farm profiles, and annals were examined to corroborate a clear overview of the farm and its history within the first two days. To get a closer look at the daily work, the animals and the interaction between farmers and their cows the scientist co-worked on the farm for the whole period. Essential for the purpose is the scientist being experienced with farm work, as well. “barn-conversations” with the stockman allowed access to detailed information about the experiences of the practitioners in a natural setting. During labour, the farmers talk more openly about their impressions, ideas, visions and problems. These talks were recorded as a log afterwards and were used as complementary material for the main interview. Within the first three days the farmers were questioned in an one on one interview. Using the episodic method (Flick 1995) 24 issues were discussed, covering three main topics. The first part dealt with the farm and animal husbandry in general, the second included questions about personal experiences, and in the third part the farmer had the opportunity to give views and ask questions about the chosen approach. Later on, interviews were transcribed and evaluated.

On the farm, observations were made at different days and on varied times. The observation included drawn sketches of the location which enabled the scientist to get a closer look on the landscape. A status report (Wolfart 2006), a report on polarities (e.g. animated – inanimated, culture – natural environment), on harmonious impressions (e.g. to view the surrounding as a whole, describing ill-fitting objects which are man-made), and of the atmosphere of the site was made. To grasp the atmosphere of an area reveals its specific mood and helps to elucidate the farms “position” in the picture. Description of the atmosphere was facilitated by three questions. What impression does the place give?, What comes up in me answering the impressions?, What atmosphere is to be experienced in this area? The latter included personal “body sense experiences” (“Leibwahrnehmung” - Schmitz 2007) to get a profound sensational insight in addition to visual and auditive observations.

Over and above the general farm observations, four different modes of scrutiny were selected to evaluate the meaning of animal husbandry for the farm organism. Firstly the farm in general was captured (e.g. size, buildings, proportions, atmosphere on the farm), secondly the farm relating to the animals (e.g. how do the animals influence the farm? does animal husbandry mean a decline or enhance of the farm aesthetics?), thirdly the animals in general (attributes of the cows such as: behavior and body condition), and lastly the animals relating to the farm (e.g. are the animals a mirror of the farm?) were recorded. Personal experiences and impressions complemented a written “farm portrait”. This combination with statements from the interview provides the basis for answers to pertinent questions, like: What particular significance of the animals for the farm organism are connected to the farms? What experiences do the farmers have with their animals? What is the common denominator between the given statements? What conclusions can be drawn for biodynamics, especially animal husbandry? Half a year after the first period of investigation farms were visited again and interviews were replenished. Additionally, the scientist presented the current results of the research to the farm community.

The results are subdivided into four categories: objective criteria, subjective criteria, the scientist's observation and core statements from the interviews and barn-conversations. The precision of the objective part is paralleled by a detachment of true inner experience, whereas for the subjective part the opposite is in state.

The farms are located in different landscapes. From glacial depression near the Eifel area (A), over the hilly Windrather Tal (B) in the “Bergisches Land” both densely populated, to the marshlands of the Oderbruch close to the Polish border (C) and the Jura region close to Basel (D). Region A is a classic sugar beet area, with few animals if any and nearly no grasslands. Region B is a typical livestock breeding area with ideal conditions for pasture farming. In region C grazing lands dry up in summer, because of little rain, thus making pasture management difficult to handle. Rather, plant production is the main scope, making the area non typical for animal husbandry. Region D is located in a former fruit growing region suitable for grazing. Grassland was at hand, and in former times used for grass compost processing. Farms A and B are mixed farms with dairy cattle and

direct marketing. Farm C is a mixed farm with beef cattle. Dairy cattle were abandoned because of financial and staff problems. The Goetheanum Gartenpark (D) is a market garden with direct marketing and a small beef herd, introduced only recently (TABLE 1).

RESULTS

All farmers presented at first hand axiomatic motives for keeping cows, e.g. practical reasons such as: “Standards of the Demeter association” (A, B, C), “cows for manure production and farm made preparations” (A, B, C, D) or obvious ones like: “the need of animal products for direct marketing” (A, B). Intrinsic reasons which tell something about the importance of animals for the farm organism were described as follows: “Cows are an important part of the farm individuality” (A, B, C, D), “cows are an important component to develop a farm” (A, B, C, D), “the inner feeling that animals have to be on the farm” (A, B, C), “the farm would be a dead place without animals” (A, B, C), “cows radiate ease and comfort” (A, B, D), “animals influence the expression of a farm (B), “positive effects of animals on humans” (C, D), “enlivenment of the landscape” (C, D), “animals are necessary to advance diversity on the farm” (A), “long term relationship to individual cows, which do not exist with other animal species” (B), and “cows as the main reason for working on the farm” (B). A non axiomatic reason was working with cows as a part of educational programs for pupils and trainees (A). During barn-conversations statements from the interview were confirmed like the obvious respectful treatment of the animals, that revealed the very strong relationship of the stock man with the animals.

Most important was the clue and conclusion of the statements that animals are representing the “soul” of the farm organism, respectively the farm individuality. Having no animals on a farm does not only mean lack of a dispensable supplement, but rather, that a part of that organism is amputated (C). Furthermore, observations show a strong correlation between animal husbandry on farms and the landscape design. Thus, although domiciled in an arable farming area, the farmers established grassland and hedges (A) and thus indirectly improved the floral and faunistic diversity regardless of surrounding conditions (C, D). Cows focus the attention of visitors (A, B, D). They mirror the farms expression respectively of the persons living there being e.g. open minded and curious like

the people on the farm (A, B, D) or on the other hand being more cautious and impetuous (C). By their needs, cows create a unique rhythm onto the farm. Although dairy cattle do not play the leading role on the farms any more, the milking and feeding times still define some daily cornerstones of work (A, B). The main relevance has more and more been set on direct marketing and plant production (A, B, C, D). Another important feature of cows is seen in their peace of mind and its influence concomitant of the atmosphere on a farm (A, B).

Body sensing of the moods and atmospheres of the farms allowed to recognize features which go usually unnoticed. The following, specific characteristics could be noticed: Farm A presented itself as a two-hearted “oasis”. A “spiral” being calm on the outside, i.e. on the vast extent of the area, where people and animals were mostly absent. Approaching the center of the spiral situated in the farmyard, the atmosphere gets more narrower and lively. In addition farm A exhibited two main centers, two hearts. On the one hand the farm shop where consumers meet and talk to each other and on the other hand the cowshed where consumers get in contact with the animals. Both places play an important role in the farm life, as well as in the public perception. On farm B, the shop and the cowshed play a similar role for the social life and also for consumer attraction but present themselves more like two islands connected by a bridge. This creates a different atmosphere from that on farm A, i.e. a calmer mood. In Farm C the farmyard feels like a “stronghold” being located in a sparse populated area on the edge of the Oderbruch. It seems to say: “we are here and we will stay at any rate”. In contrast the gardenpark as part of the Goetheanum High School shows no typical agricultural features. Animals and the garden and park are experienced as elements of artwork. The animals bring ease and enlivenment into the spiritual, and somehow heavy atmosphere of the High School-park.

DISCUSSION

Since two topics have been addressed in this paper, it is worthwhile to divide the discussion into two sections: The methods developed and applied and the results obtained, respectively.

In contrast to other researches (Capell 1998, Schumann 2008) with “In-farm methodology”, which promoted one day, or three to four days, respectively an

investigation period of ten days on the farms proved to be useful for a number of reasons. First, detailed insights in the farm organisms were possible. Second, the daily co-work with the farmers proved to be essential for confidence building. The scientist was integrated in the best way. A smoothly flow could be guaranteed so the farmers did not feel disturbed in their work. And third, last but not least, for the acquaintance of organismic processes, the due consideration of the dimension of time is mandatory. It would be of interest to investigate, if a longer period would prove to be even more beneficial.

The evaluation of farm profiles and farm annals helps to draft a historical, as well as a current portrait of the farm. However, it is strongly related to the consciousness and dedication to this documentation by the farmers themselves. In particular situations, the visit of archives might allow for a deeper understanding of the not so recent history. Farm annals especially proved to be an appropriate source.

Interviews unravel the personal thinking of the practitioners in a well suited way. Having a conversation on the farm has an appeasing effect on the farmers because they can stay in a familiar environment. Talking about aspects of their work helps the farmer to reflect on them. In agreement with other researchers (Capell 1998, Meyer-Glitza 1999, Schumann 2008) a time frame of 1.5 hours was chosen for the interview to make sure that all aspects can be discussed adequately without exhausting the farmer. The analysis of interviews is an extensive method, but repeated reading and hearing the interviews helps to discover important details. For example, it would have escaped our notice that axiomatic answers can include personal views as well, if we would not have undertaken the repeated listening of selected parts of the interview. Supplementing barn-conversations are very useful as well. In particular, if the animal keeper is an employee and not an entrepreneur on the farm, answers on the same question vary between both considerably. An animal keeper was reluctant to answer questions about his relationship to the animals, during the interview. Later on, in the cowshed he revealed a great pride of ownership, which could not be expressed beforehand.

Using qualitative scientific methods like interviews, requires accepting difficult and incomparable answers. Taking each farm as an individuality helps to solve this problem. Differing answers reflect the conditions on the farms and the

opinions of the farmers. But differences in wording do not always result in differences in meaning. It is a challenge to extract similarities. Especially when talking about their animals, farmers had similar views but used different wordings (e.g. “keep cool”, “to keep one's balance”, “peace of mind” to say that the cows bring ease and comfort onto the farm and also into the farmer’s lives). Only growing expertise of the scientist, in reference to Daston and Gallison (2007) can make these things visible.

Observations and the co-working are the method of choice of the participation research for evaluating the current situation of the farm, and even more its atmosphere and the inner perspective of the farmers. Thus, the adjustment on the surroundings, as well as the fitting of animals and residents into the farm organism is better understood than from a perspective of an outer observer. Working with the animals gives better insights than only walking through a cowshed. The reaction of cows when strangers appear, touch and even milk them, can not theoretically be captured. Co-work allows to assess how a farmer being for example aggressive towards his animals may stimulate a nervous behaviour, whereas an easeful handling can result in the opposite (Spengler 2008). Observations and co-working also allows the scientist to contrast impressions from a personal point of view and to eventually challenge the statements of the farmers. Difficulties can arise from the scientist getting too attached to a farm or a system. The research period is limited for this reason, too. Limitations are also given by the method itself. Training the method beforehand and comparing the results with results of others is necessary.

Using body sense as an observation method is quite demanding, and difficult without good self control. Also, some places have a strong charisma others do not. To sense the latter shows to be difficult. On the other hand, to actually sense atmospheres with the body was experienced to be a good complementation of other observations. It helped to get a deeper and intimate view of the farm individuality itself, besides it can help to choose the most suitable breed of cow. As shown on farm A representing itself as an oasis, a calm and easy to handle breed of cow was chosen by the first stock man through his observations, i.e. body sensing of the farm organism. However choosing a breed successfully through personal motives still reflects the influence of the farm individuality on the

farmer, an unperceived reciprocal relationship. For example on farm C seen as a stronghold the cow breed “Salers” had a correlation to the somehow challenging situation of keeping cattle at all. Whereas farm B kept just the breed common in the region farm D chose a very rare and robust breed (“Rhätisches Grauvieh”) which was felt to suit best the circumstances of the gardenpark at the Goetheanum.

All farmers had difficulties pointing out their inner reasons for keeping cows on their farms, except for axiomatic ones. Reflections about such obvious matters do not emerge in their daily work life. The only exception were the gardeners at the Goetheanum, who after long discussions had a clearly defined idea, why they only recently wanted to introduce cows to the nursery after more than 80 years without cows. Another reason could have been their close relationship to the Goetheanum and as a consequence, a closer relationship with the idealistic basis of biodynamics.

The investigated farms cling to animal husbandry although questions of financial concern do arise, as shown with farm C. Keeping beef cattle is less intensive in staff and expense than milking cows which results in a different atmosphere with a less intimate relationship between animal and animal keeper, but still allows to animate the farm individuality. All farmers know and appreciate the importance of the animals being on the farm as a source for (their own) well-being. In agreement with findings of Capell (1998) we experienced that economic questions are very important, but do not necessarily interfere with intangible aspects of animal keeping. Additionally, biodynamic farms can partially soften economic problems by using the ability to offer a diverse range of products (A, B) as well as finding niches on the market. Apart from special products these can be ecological niches as well, like the support of renewable energy sources (B) or seminars on landscape design (A, B). The arrangement of such connections helps to get consumers committed to the farms. Having an array of supporters and not just consumers helps to overcome critical financial times for the farmers (A, B).

During the second farm visit farmers reported that being shown aspects of their farm from a non commercial view was helpful and enlightening.

To amplify and underline the results, further research is required. More farms, at least to the number of ten, should be investigated and evaluated. Using the

presented research methods to evaluate other current biodynamic questions, like individual nature conservation methods (Wolfart and Fuchs 2009) could be the method of choice to verify their relevance for agricultural science. Additionally due to the complementing of analytical research the methods used help to develop a sustainability which is first hand independent from economic aspects.

CONCLUSION

In-farm research methodology helps to bring about not so obvious reasons for farm management practices and helps to gain orientation knowledge. Both can help to stabilize the motivation of farmers as to a more authentic public relation. In this study farmers were grateful to have had the possibility to reflect on the farm in a prior non commercial view. Why animals are kept can now be found to have a more profound basis.

If a farm is looked upon as a sort of individuality and is examined in an individual way, astonishingly the research methods become more and more similar, or even compatible to research methods of social science that focus on human individuals and their special features.

Scientists practicing In-farm research methodology should be familiar with practical farming and on their way to becoming experts in distinguishing qualitative aspects of farm organisms. Training in agricultural science should integrate such issues more in the curriculum. Nonetheless scientific evaluation should embrace such methodologies as acceptable complement to analytical science. Sustainable forms of agriculture could be likewise enhanced.

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