

The ANIPLAN project: Reflections on the research approaches, methods and challenges *Stephen Roderick & Mette Vaarst*

Introduction

The objective of the ANIPLAN project is to 'investigate active and well planned animal health and welfare promotion and disease prevention as a means of minimising medicine use in organic dairy herds'. The basic idea lying behind this objective is that the active development of plans at the farm level to improve herd health and welfare will enable individual farmers to practically achieve the organic principles with regard to the health and well-being of organically-farmed animals.

To fulfil the objective, the project needs to be carried out in close collaboration with farmers and conducted in real farm situations. This means that the research is being carried out in an environment which is not under control the control of researchers. This, in turn means that there are inevitable methodological issues which will arise during the course of the study. This paper describes some of the issues arising during the first part of the study i.e the setting up of the project and the first year of data collection.

One major challenge for the research team involved in this project is to identify research methods which can describe and document the planning process as well as the disease, production and medicine use on study farms. This documentation will enable the researchers as well as the end-users of the research to evaluate the approach and the effect of animal health and welfare planning on herds. This includes the process of animal health and welfare planning, which can be regarded as an iterative social and individual human development process. The transformative learning process (Vaarst, *ibid.*) leading to a change of perceptions and priorities of those involved should be expected before actual changes are implemented in the herds. Again, there are methodological issues to consider in this respect.

With regard to the research methodology applied, the project moves beyond the traditional approach of measuring change in a set of biological parameters, to one which incorporates a number of research approaches that include social elements and qualitative as well as quantitative data. Thus there are inter- and trans-disciplinary research approaches which require consideration with regard to application and scientific quality.

The aim of this paper is to give a midterm view of the identified research challenges within the project, and to summarise reflections from discussions at the project workshop in Fokhol in Norway and a project meeting in Ghent in October 2008. The paper provides an ongoing discussion document on methodological issues.

Identifying the need for a qualitative research approach to document the process

At the first project workshop, it was agreed that the animal health and welfare planning process was essential and the 'animal health and welfare plan' would be the document resulting from the planning process. It was also agreed that this should be given value only as the written end result of a process, and formulated by the farmer instead of being a summary of 'good advice' given by advisors. The acknowledgement of the importance of the process emphasises a requirement for qualitative research approaches commonly used to document and analyse social processes. Although the project does not have a particular budget for such research activities, the need to include this activity within the current budgetary constraints have been discussed. In the following, a brief overview of some of the considerations is provided. Two major questions were raised in relation to this:

- 1) How to describe and document the planning process? Here, qualitative interviews and following the process by describing which initiatives are taken on the farms etc. are crucial,
- 2) How to measure improvements and the effect of the animal health and welfare planning? Here, a combination of epidemiological analyses and qualitative research methods must be used.

Describing the animal health and welfare planning process

The process involves a) the assessment of the herd situation, b) the dialogue with a person from outside the farm and c) an evaluation. In terms of research methodologies, the following considerations have been discussed and will be included in the final analyses.

a) The assessment of the herd situation

All participating countries have different approaches to data collection, ranging from central cattle data bases to farm records and data from individual dairy companies. In all countries, data from more than one source will be included. One major assessment of the herd situation in this project has been the recording procedure developed within the project 'Welfare Quality'. Issues of time taken to conduct the assessment and the immediate perceptions of relevance and usefulness seen from farmer and advisor point of view have to be included in an analysis of the success of the assessment methods.

A requirement of the assessment is that it must give a relevant and useful picture of the herd situation, and thereby also providing a basis for evaluating whether something has been improved on farm level. The research undertaken should aim at evaluating whether such tools have been proven efficient in achieving this goal.

An ambition of the project is to give advice on data and herd assessments (of routines and animal welfare) which can realistically be used as a basis for dialogue with advisors or fellow farmers in an animal health and welfare planning process. Different templates and formats of reporting have been developed for presentation of the data to the farmers, and the usefulness and success of these approaches to presenting data will be described. This will require country specific case studies and analysis. The feed back from the farmers and the involved advisors and facilitators will form the basis of the advice.

b) The dialogue as part of the animal health and welfare planning process

As illustrated in Vaarst & Roderick (ibid.), the dialogue within farmer groups needs to be adjusted to meet the particular cultural and production environments within each country. The extent to which participating farmers respond to the group discussion process is likely to vary between countries and situations, particularly with regard to the traditions with respect to group discussions and participation. Again, the involvement of farmers in this is highly relevant. Interviews – individual as well as group focus interviews – need to be conducted appropriate to the needs and circumstances in each country and region.

The approach and perceptions of the facilitator of farmer groups is also critical. As an overall collection of different approaches to dialogue in farmer groups, it has been decided that an interview in English will take place with all involved facilitators, and in some cases with experienced facilitators within each of the participating countries.

Measuring improvements over time as a result of the process

The process of making changes within a herd, which may lead to improvement in the herd, is likely to be complex. At the Ghent ANIPLAN meeting in September 2008, an overview of how the process of change is likely to be brought about was developed and is described in Figure 1. The process is likely to be complex.

At the time farmers are interviewed, it is likely that the process of planning and change may only have reached the box 4 stage (farmer starts change), and probably not as far as the box 6 stage (measurable impact on animals). The approach to evaluating the process must take this into consideration i.e that the process is incomplete, and the methodology adopted (both qualitative and quantitative) must take this into consideration.

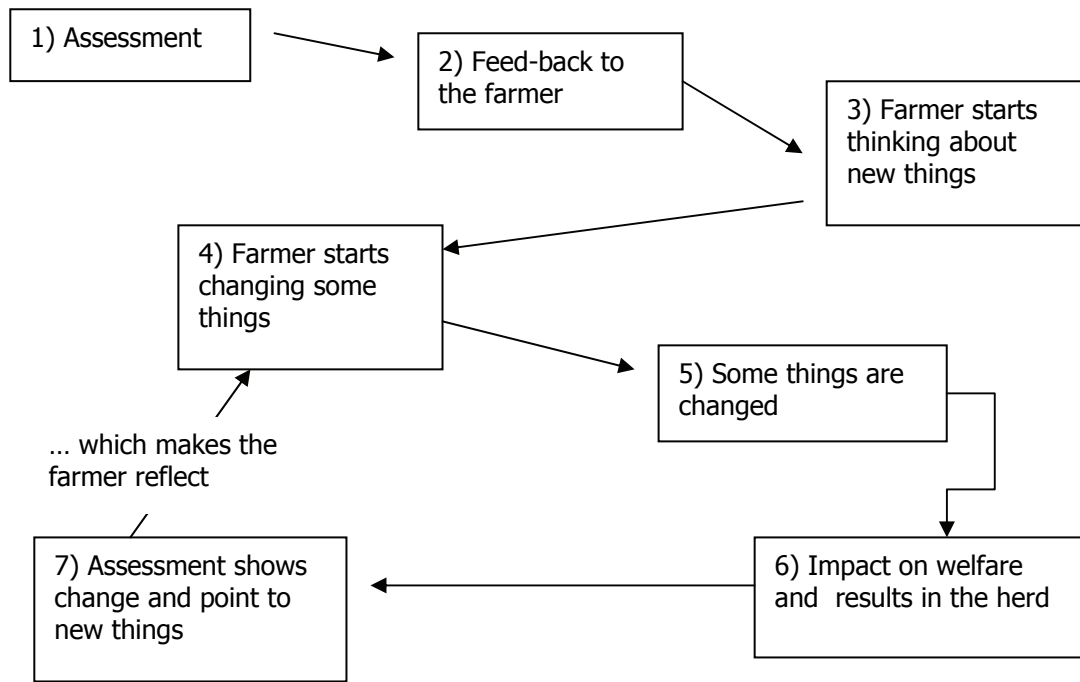


Figure 1. A draft of the process which maybe will be experienced by farmers and in the farms in relation to this project.

Measuring improvements related to the project objective and goal

The aim of the project is to minimise medicine use through improved animal health and welfare as a result of an animal health and welfare planning process. So, measures of the impact of change need to include answers to the following questions:

- Has medicine use been reduced?
- Has animal health and welfare been improved?
- Had the animal health and welfare plan contributed significantly to this?

This requires reliable and uniform data across countries, and the project group has spent much time and had many discussions in order to align the various country specific data and ways of measuring disease related parameters. Researchers from all countries carry out a certain amount of assessments of farm systems and animal based welfare parameters developed within the Welfare Quality project. This provides a source of consistent data for applying quantitative analysis methods and for communication between countries effects that may arise consequent of structural, climatic, geographical, cultural and other factors, as well as identifying common trends and developments.

In Figure 2 below, the various categories of parameters are listed and a simple overview over the research strategy in terms of measuring the situation in each herd at the beginning and end of the intervention (the animal health and welfare assessment) is shown. Application of qualitative research approaches then should enable the research teams to describe the 'things happening in between'. So, the first three categories are likely to be the subject of epidemiological and statistical analyses, whilst the latter two will require a more qualitative research approach.

	First assessment	Things happening in between (the process)	End point
Animal based (incl. milk records + production)	X		X
Medicine	X		X
Resources	X		X
Management	X		X _(shortened)
Expectations	X		X _(shortened)

Figure 2. The categories of quantitative and qualitative parameters and variables in the assessment of change.

In Figure 3 below, an example is shown of the strategy of measuring parameters related to a condition (e.g. mastitis) that may be influenced by the process in the year before the project (year 0) and comparing it to the herd situation after the intervention, when improvements may be expected. In this example, various mastitis related parameters are listed which could be included in an analyses of change in a herd.

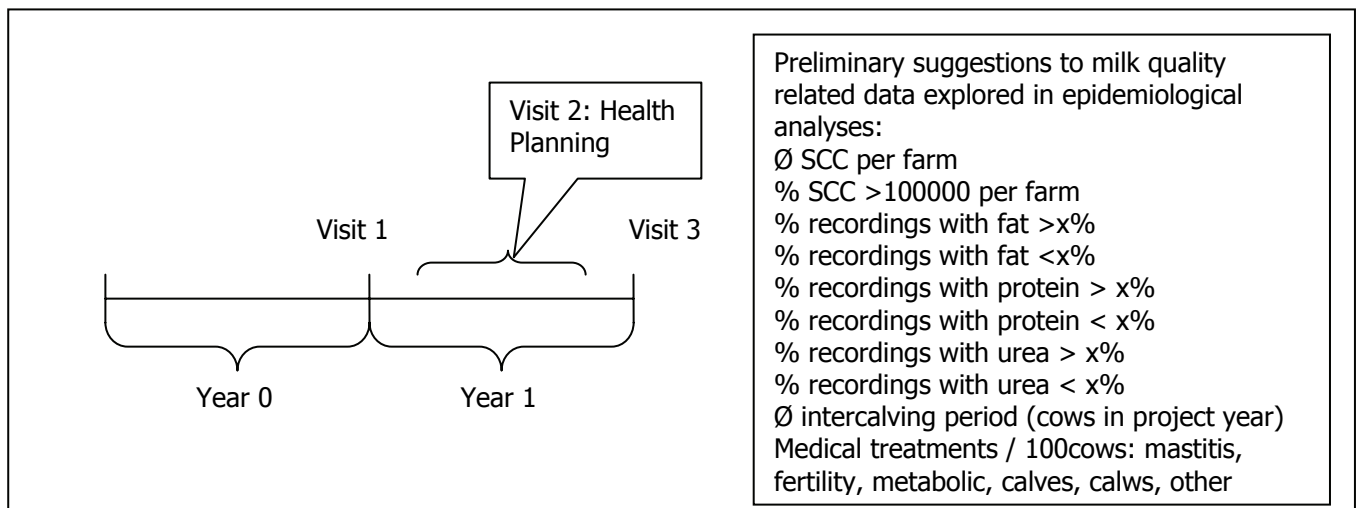


Figure 3. Using mastitis as an example of variables which can be looked at when evaluating change on a farm.

Figure 3 provides perhaps an ideal scenario for measuring change related to a specific parameter. However, limitations related to time need to be recognised. First, for some parameters a period of one year may be insufficient to conclude whether change has taken place. Secondly, there is variation between countries with regard to the start date. In some situations, the health planning process may have started less than one year before the evaluation. Also, in some countries, there is no data available or produced at all from 'Year 0'.

Including farmers' perception of improvement

An analysis of whether things have improved clearly has to include the farmer's own perception and be related to the farmer's own goals. Goals can change because the farmer becomes more and more well-informed or influenced. Such changes cannot easily and comprehensively be measured 'from outside' and effective evaluation will need to incorporate farmer reflections, including first hand experience.

The project 'goal' is minimised medicine use through better animal health and welfare. However, this may not be the primary goal of the participating farmer and hence it is appropriate for the project to consider the broader farm and personal goals of the farmer, and to attempt to evaluate the process and outcome of the project from this perspective. This makes it even more relevant to involve the farmer in the analysis of change, and to adopt the most appropriate research and analysis method to achieve this within the project budgetary and time constraints.

Conclusion

This project includes a broad range of conditions, a range of data resources and a multitude of possibilities with regard to measuring the process and impact of herd health planning. The need for both qualitative and quantitative approaches has been identified. Whilst many of the research and analytical methods that may be used are in common use, their joint application in relation to the project objectives is likely to be an onerous task. There are also methodological constraints to be considered with regard to the relatively short period of time required to evaluate a potentially lengthy process, the variation between countries with regard to the quality of data and the difference in time that project activities have been implemented in the various countries. Consistency of data is also a significant consideration.

Within the ANIPLAN researcher team, there has been agreement to conduct in-depth epidemiological and statistical analyses of health and welfare data, and to evaluate and discuss effects of an active process of improvement aiming at minimised medicine use through improved animal health and welfare. This will be combined with various qualitative research methods as described above, including interviews of farmers individually or in groups, as well as of advisors and farmer group facilitators. What is now required is further clear definition of the quantitative data analysis and a clear set of procedures for achieving this. With regard to the qualitative data, there is a need to establish what research and analysis methods are most appropriate for evaluating the human activity involved in health and welfare planning. A most significant task beyond that is to bring together the outputs achieved from the various approaches and countries so as to meet the overall project objectives. These methodological challenges will be the focus of the next ANIPLAN workshop in Austria during May, 2009.