Future(s) for poultry meat production: interaction between industry and research towards appreciated poultry meat production, description of a field experiment

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Poultry meat production in The Netherlands is confronted with increased competition on the world market and diminishing social acceptance of large-scale intensive animal farming systems. Previous successes of the Dutch poultry industry and poultry farmers have been attributed to the strong interaction between government, research institutes and advisory services, and the transfer of knowledge to farmers. This was done in a linear way through the advisory service and the agricultural education system. However, solutions to the current problems in the interaction between society and agriculture are not straightforward any more and cannot be implemented top-down nationwide, but have to evolve from interaction between many partners in the production chain. Therefore, we experimented with an alternative approach to link up poultry farmers and other stakeholders in the poultry meat production chain with each other and with research groups.

The experiment started with a strategic problem orientation, in which several points of view were adopted to identify opportunities for poultry meat production in the Netherlands. In a joint session of chain partners, industry and government representatives and researchers these chances were used to look to the future and to identify ideas for a more sustainable poultry meat production. Participants from the poultry industry adopted a number of them for further development, with the help of researchers where necessary. Principles of sustainable technology development, appreciative inquiry and social learning were incorporated into this approach. This paper describes the experiences with this approach and the lessons learned for future cooperation between poultry producers and research institutions.

Key words: poultry meat production, social learning

Introduction

Worldwide poultry meat production and consumption is increasing. Also the relative position to beef and pork is improving in favour of poultry meat (USDA, 2005; FAO, 2002). In international trade, poultry meat is responsible for larger volumes than beef or pork (USDA, 2005). ‘Industrial’ poultry meat production is more or less uniform throughout the world in terms of technical performance, housing systems, nutritional concepts and genotypes of the birds involved. However, changes occur in production circumstances (e.g. energy availability, infrastructure, knowledge potential, governmental policies, social attitude) in such a way that competitiveness changes quite drastically in favour of non European regions. Industrial poultry meat production successfully has developed in less than 50 years from a ‘by-product’ (or integral part) of egg production to a specialised production system. The increase in technical performance of this production system is extreme. Around 1960 a broiler
weighed about 1.2 kg at 56 days of age and required 2.8 kg of feed per kg of live weight. Current broilers weigh 2.4 kg at 42 days of age and require not more than 1.7 kg of feed/kg live weight. Dutch farmers have always been at the front of this technical development and achieved low cost prices because of this high technical performance, and low feed prices due to a very innovative feed industry, utilising all left-overs from the food processing industry. This, combined with the Dutch trading tradition, and the cooperation between government, research and extension services, created a poultry meat industry exporting about 70% of the production volume. The same occurred for egg production, pork, veal and dairy products. Consequently, The Netherlands is densely populated not only with people but also with animals. This creates problems with spatial planning and environmental pollution, and it also increases the risk of infectious diseases. During the last decade The Netherlands suffered from outbreaks of classical swine fever, foot-and-mouth disease and avian influenza. From the seventies onwards, animal welfare and care for the environment have become issues of public debate. This, and the devastating effects of the diseases, including the killing of large numbers of animals, raised questions whether intensive animal production could continue or had to adapt (Leenstra et al., 2004).

To answer this question and to find directions for solutions, the Dutch government financed a research programme ‘Socially accepted animal production’. In this programme different approaches (field experiments) were used to address the question at two levels:

- Is it possible to stimulate diversity and thereby create more opportunities for accepted animal production systems, and
- Is it possible to fill the gap between society and production chains: what are dilemmas and how can we work together.

The research programme is based on transition management theories (Kemp and Rotmans, 2004): technology, structure and culture have to develop simultaneously and should adapt to each other for a successful change. This can only be achieved in interaction between stakeholders. Separate projects were carried out for laying hens, pork production and dairy cattle (Spoelstra et al., 2002).

In the poultry meat project we used elements from Sustainable Technology Development (Bos and Wolleswinkel, 2002, Weaver et al., 2000) and Appreciative Inquiry (Cooperrider and Whitney, 1999). Proost et al. (2006) describe the methodological background of and lessons learned from the experiment. In this paper we focus on the ideas elaborated in the project and the reflection of the poultry farmers (and their organisation) on the project.

**Description of the experiment**

The project started with the question raised by governmental policy makers ‘should we work on an improved design for outdoor poultry meat production, like we do for laying hens?’ The poultry farmers (board members of farmers’ organisations) felt threatened by this idea. They suspected the government of forcing such a development into experimental conditions. As current Dutch governmental policy is ‘not taking care of, but facilitating ..’ it was eventually agreed that poultry farmers, represented by the chairmen of the broiler, turkey and duck farmers’ organisations, and the research institutes would work jointly on sustainable developments in poultry meat production. They got a two year project, financed by the government.

In the first period some discussions were needed to pick the right questions and the appropriate research method. The general idea was to address questions of the ‘yes, we would like to do that, but...’ type. The answers to such questions are milestones in a transition process. The three chairmen of the different poultry farmers’ organisations acted as initiators and owners of the overall project.

The first insight was that the sector could be characterised as blocked. The general idea was that production systems were efficient, good and accepted. Nevertheless they were confronted with high competition and difficult economic perspectives. So creativity was needed and a look outside the present sector. There was no need for developing a new housing system. Therefore, in the beginning of the project we chose for the method of Sustainable Technology Development. With this method a large group of stakeholders think about common problems in the perspective of what is required with a
time horizon of 20-50 years (e.g. reduce the environmental burden to 20% of its current level) and identify, by back-casting, the topics to work on.

The first step in this method is strategic problem orientation. This led to 11 position papers, written by scientists, on topics like learning from greenhouse plant production, implications of demographic developments in Europe, techniques to reduce ammonia emission from poultry houses, pros and cons of outdoor runs, further processed products, marketing techniques, etc. Although we asked the authors to interact with stakeholders, this was not really done and the position papers became rather theoretical. Most scientists apparently need specific training before they are able to write a short position paper with involvement of stakeholders. Moreover, a time horizon of 25 years appeared too long for most stakeholders.

Therefore we decided to incorporate elements of Appreciative Inquiry (AI) in the next step. In a 24 h session a diversity of selected and invited stakeholders and a number of experts from research institutes worked on the first three of the four stages generally forming the AI process: discovery (appreciate the best of what is), dreaming (what might be), design (what should be done to co-construct the ideal) and destiny (empowerment, learning and adjustment). Authors of the position papers were asked to make a poster of their work and to formulate the results in three ‘opportunities’ instead of the normal way of formulating problems. These posters were very valuable input in the session, because they set people thinking. A signal from the group was that all future elements important for poultry meat production in the Netherlands were present in the posters, but that it had not been worked out as one future, but more possible futures. This left room for discussion and dreaming.

The participants appreciated the strength of the current Dutch poultry sector. During the dreaming stage lots of ideas emerged, which were discussed and amalgamated. At the end of the 24 h session the group had formulated nine project ideas, of which seven had an ‘owner’ from industry. In this session we used the method of the COCD box (www.coed.org). In the COCD box, project ideas are classified in practicable/not practicable and ordinary ideas/original ideas. Yellow ideas are not practicable in the short term, but original. Yellow ideas are the future red ideas.

\[\text{Figure 1 Filled-in COCD box as a result of the 24h session (original in Dutch)}\]

Among the project ideas all categories of the COCD box (blue: existing idea, practicable; red: new idea, practicable, and yellow: new idea, not (yet) practicable) were present (see Figure 1). Ownership of the ideas was stimulated during the workshop. The ideas without an owner from industry were one yellow and one blue idea.
The ideas

Industry ‘owners’ of project ideas were expected to elaborate on that idea and could ask researchers for assistance. The assistance of scientists was financed by the governmental funds. For real involvement of stakeholders, the rules for the scientists were very strict: they were not allowed to take over and ‘walk away’ with the initiative.

All projects aimed at chicken, although many of the principles could be applied to turkey and duck as well. For duck it was not surprising that no projects emerged, as the duck sector in The Netherlands is tightly integrated, concentrated in a small part of The Netherlands, and has its own specific (restaurant) market.

The project ideas without an owner were:

- webcam chicken: a website were consumers can look by webcam into broiler houses, a known and practicable (blue) idea
- chicken is being seen again: can we achieve that it is normal to see broiler chickens in the countryside or at other locations to restore the contact between producer and consumer (a yellow idea)

The project ideas with an industry owner were:

- sustainable locations for poultry production: identify those locations in The Netherlands where broiler production fits best and transfer farms from unfit locations to the sustainable ones (a red idea)
- covered outdoor runs: a blue idea
- chicken cluster: a group of farmers who combine arable farming with broiler production. They want to close the nutrient circulation in their region, reduce transport and make their philosophy transparent for the general public (a red idea)
- looking for added value (a red idea)
- valorisation of idealistic criteria: how to achieve a reasonable price for animal welfare and environmental measures without enforcing it with laws and taxes (a yellow idea)
- ritual chicken: is it possible to have a broiler farm where people can buy a live chicken and slaughter it on the spot in a humane way (a red idea)
- farmers chicken: a production system in between the standard production and organic or label rouge type of production (a red idea)

Six months and one year after the 24h session reunions between the participants were organised in order to discuss progress and problems.

All the ideas had progressed to some extent. However, progress was not straightforward. Back in day to day business it proved to be difficult to maintain the energy level built up in the 24 h session. Consequently some ideas ‘went in the fridge’, some were incorporated into other initiatives and some project owners reduced the scope of their idea to something they could handle together with their normal activities.

‘Sustainable locations’ is now part of the Dutch reconstruction plan to reallocate land to farming, nature and industry.

‘Looking for added value’, ‘farmers chicken’ and ‘covered outdoor runs’ were amalgamated in an existing and long-term project to develop a market for this new production system.

For the ‘chicken cluster’ it was decided to reduce the scope for the time being to realising biogas production.

‘Valorisation of idealistic criteria’, a common denominator of all other ideas, was elaborated on in a separate workshop. Leenstra et al. (2006) report on the results.

For ‘ritual chicken’ the existing regulations were found to be too strict and it was decided to shift to exploring other ways of direct contact with consumers, either institutional (hospitals, canteens) or individual (on-farm sale of poultry meat).
Lessons learned

A specific activity of the experiment was a self analysis to learn lessons for the future. The main joint problem appeared to be the continuous pull of ‘business as usual’, day to day survival and the refractoriness of the current system. Although the project management was regularly in contact with the owners of the project ideas, in this (experimental) approach and with hindsight the bond between the project owners and scientists within and across projects was too loose for the required continuous mutual stimulation. Also the ownership was obtained in the highly energetic situation of the 24 h session. A lesson is that real ownership needs more time and attention after the 24 h sessions. Another lesson was that people thought that the ideas from the workshop were very much connected to what was going on at that time. They had the impression that the same method with other people or at another moment might lead to other ideas. So the ideas are to some extent coincidental. Nevertheless the ideas were realistic and opportune.

In evaluating the relationship between stakeholders and researchers it became clear that most stakeholders and/or their organisation have insufficient insight in what a research institute can provide them with. The researchers indeed have to be actively involved in articulating the questions of stakeholders, and they have to display their services (e.g. facilitating meetings, organising projects, network input and technical knowledge) much more clearly.

All participants found the sessions and the project as a whole valuable, and most of them would participate again. In general participants were focused on technology at the start of the project, but experienced during the project the importance of building networks and joint action. Building networks and joint action is an essential element of social learning in innovation processes (Leeuwis, 2004). This shift from technology to network building was probably one cause for the gap between research and stakeholders. The stakeholders expected only technology from the researchers, while, although not fully developed, research also offers support in building the right network and how to operate in it.

In general the gap between poultry producers and consumers has become too large. This was reflected by the difficulty to interest representatives of supermarkets (in The Netherlands about 90% of poultry meat is sold through supermarkets) in contacts with primary producers and other partners in the poultry meat chain and in the project. Up to now most marketing research in poultry meat is quantitative and statistical by nature. Market research giving more qualitative insight in the views of consumers/buyers is required and might be a topic for cooperation in the sector.

Reflections by the chairmen/initiators

The chairmen of the broiler, turkey and duck farmers’ organisations had taken up the role of initiator/owner of the project as a whole. In their evaluation they concluded that on the one hand they felt that as representative of all producers they had to act as a watchdog because of their mistrust in the motives of the government with new developments. They have the impression that if new developments have a positive impact on animal welfare or the environment, these developments will be forced upon them whatever the cost and the consequences for their position in the international market. They were satisfied about the project because it gave them the opportunity to think about the future and to inform themselves on the issues. During the project they realised that it would be more effective to try to communicate at an early stage with policymakers instead of reacting when an action is taken by policymakers. They also noted that stimulation, vision formulation and bringing people together takes a lot of organisation, energy and perseverance.

They very clearly see the dilemma between the interest of an individual, who might go for an innovation, and the interest of the majority of farmers, who ask for stability and not too much change. As individual farmers they like to explore new ideas, as farmers’ representative they have to look for stability and an international level playing field.

Their general view was that for innovation you need a highly committed owner, and this will rarely be a representative of a group. Innovation prospers by variation and diversity, whereas farmers’ organisations need consensus and uniformity. Neither the government nor research institutes can
effectively act as owner of innovation; innovation has to be a bottom-up process (Spoelstra et al., 2006). On the other hand, representatives of groups have a need for timely signals of the consequences of certain developments. In the experiment we focused on the innovation aspect and expected a lot from the projects. With the present knowledge we also had the chance to use the same basic information for further impact and/or scenario analysis. This is a clear lesson learned.

Innovation requires trust between chain partners, research institutes and the government. These three parties need continuous interaction and have to search for an active balance in developments.

Yet, the climate for innovation in poultry farming in the Netherlands is favourable, as the Netherlands are one of the few countries where quite a number of farmers are independent. In most parts of the world broiler farming is characterised by a high degree of integration and farmers get compensation for providing housing and labour on the basis of integration. All decisions with regard to the production system are made by the integrator. The Dutch system of independent broiler farmers is in principle a breeding ground for new developments, provided that (some) farmers are willing to look for alternatives for the current paradigm of ever decreasing cost prices and the accompanying scale enlargement and provided that the government is willing to stimulate individual initiatives in addition to collective actions.

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