

## **SUSTAINABLE POULTRY MEAT PRODUCTION SYSTEMS, STAKEHOLDER-BASED SYSTEM INNOVATION**

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### **Abstract**

“Sustainable poultry meat production systems” is a project within the program "Future Livestock Production Systems" initiated by the Dutch Ministry of Agriculture, Nature management and Fisheries. The aim of this research program is contributing to innovation in animal husbandry systems in The Netherlands and development of sustainable livestock production systems for the future.

Interviews and intensive discussions with stakeholders from the regular and organic meat production chains and from NGO's dealing with animal welfare, environmental issues and nature protection we have enabled us to identify several opportunities for sustainable poultry production systems.

This year (2002) several stakeholders will co-operate to start a short producer-owned production chain. This chain should enable the producers to be responsible again for the quality of their own product. Furthermore, concentrating the whole production process (from the hatching egg to the slaughtered bird) on the farm will increase the quality of the chain and the product. This prevents transport of living animals, cross-contamination at the slaughterhouse, etc. The project should serve as a trigger for the start-up of other sustainable poultry meat production systems. The project will furthermore focus on how to re-establish the communication between the rural producers and the urban consumers.

### **Some long term predictions for global and local developments affecting the Dutch poultry production systems.**

#### *Global consumption:*

The meat consumption in The Netherlands and other European countries seems to have reached its peak. However, the FAO predicts that meat consumption in developing countries will further increase drastically. For poultry meat a 7-fold increase is expected in the next 20 years (FAO, 2001). This development will have an effect on the availability of animal feed on the world market and will probably lead to an increase of animal feed prices. The current Dutch poultry production system is highly dependent on animal feed imports. Increasing prices of animal feed such as soybeans and maize will have an effect on the Dutch poultry export and could furthermore make the use of regionally produced feeds more attractive.

#### *Local production:*

The general view arising from recent publications by agricultural and non-agricultural organisations is that the total number of livestock in The Netherlands will decrease and that livestock production systems will become more extensive in the future. This will amongst others be due to environmental legislation, the increased use of land for non-agricultural purposes (housing, industry, nature, recreation), and consumer demands concerning animal welfare (LTO, 1999; SNM, 2001).

## **Current poultry meat production and consumption in The Netherlands**

In the Netherlands approximately 435 million chickens are kept for meat production per year (PVE, 2000). The total poultry meat production in The Netherlands was fairly constant the past 5 years at around 700 Kton/y. 90-95% of this poultry meat was chicken meat (FAO, 2001). The total meat consumption in The Netherlands is around 90 kg/person per year, approx. 20 kg of this consumption (20-25 %) is poultry meat (FAO, 2001; PVE, 2000). On average the Netherlands produces 60% more poultry meat than we consume (FAO, 2001).

## **Outline of the project**

In 1999 the Dutch Ministry of agriculture, nature management and fisheries initiated the program "Future Livestock Production Systems". The aim of this program is to develop desirable and sustainable livestock production systems for the future. The horizon is the year 2040. To generate these long-term system innovations the program uses the "Sustainable Technological Development-Approach" (the so-called DTO-approach). A desirable vision for the future is generated by a group of stakeholders in this approach. This vision is then used to formulate innovation goals and short term actions necessary to reach this future goal. Information on the DTO-approach can be found on the website [www.on.nl/info-agnw/Innovatie/DTO/DTOKOV.htm](http://www.on.nl/info-agnw/Innovatie/DTO/DTOKOV.htm). Based on analysis of various trends in our society and intensive discussions with a wide variety of stakeholders from both non-agricultural as well as agricultural backgrounds a vision document for the Dutch livestock industry was prepared. This vision document, "Turning point and future of the livestock industry" presents visions of a sustainable animal industry including long-term innovation goals (see: [www.vsys.nl](http://www.vsys.nl)). Important long-term innovation goals include maximal transparency in the chain, significant reduction of pollution and increase of animal welfare and food safety, obtaining products with added value, etc.

The project "Sustainable poultry meat production systems" is one of the projects within the program "Future Livestock Production Systems". The aim of this project is to translate the long-term visions and innovation goals, generated for the Dutch livestock industry, to short-term actions for the Dutch poultry meat production systems. The stakeholders were selected from different parts of the whole production chain (from breeder to retailer and from regular to organic production systems) and from organisations dealing with animal welfare, environmental issues and nature protection. Most stakeholders know each other from different poultry production organisations, but the setting within this project was new. These stakeholders and scientists from several Dutch research institutes and universities carry out the project. Researchers co-ordinate the process and organise discussions. A process leader controls the learning process.

Stakeholders were interviewed to give their view on the future. What will be the future of poultry meat production in the year 2040 without intervention and what do we want it to be? How can we create innovation in the poultry meat production chain? Based on the results of the interviews a workshop was organised by a reference panel, which contained several stakeholders. The workshop started with a review about the history of poultry production. The stakeholder then discussed in small groups the problems and possibilities for various parts of the whole chain. The groups changed in composition to discuss different subjects. A video presentation of an innovative pig production system was also showed and after the discussions the innovative ideas were evaluated and selected in a plenary session.

## **Results**

In interviews some stakeholders bring forward the ideas of their company that appear to be contradicted by their own ideas. These were more innovative because they don't have to take into account the practical or economical aspects.

The first part of the discussion in the workshop was to determine the most important problems and the second part to create innovative solutions for that problem. Because each stakeholder was selected to discuss that part of the chain different from the one in which he was directly involved, stakeholders were free to create innovative ideas.

During the workshop representatives from both the regular and organic production chains showed that they have identical problems and possibly identical solutions. Both were satisfied by the fact that researchers are facilitating these actions.

The evaluation in the workshop learned, that stakeholders want a shorter production chain with less transport and better animal welfare. The plan was submitted to the reference panel and the most enthusiastic stakeholder was invited to act as the main stakeholder.

## **Discussion**

The scientists in this project were trained for the Sustainable Technology Development approach but working with it was rather new, for most stakeholders such an approach was completely new.

At the same time that innovative ideas originated the stakeholders again rejected them. Their knowledge of legislation, practical and economic benefits, provided the arguments why the innovation was unsuitable. Therefore a stakeholder had to discuss items from other parts of the chain.

For the researcher this approach sometime was frustrating, because his colleagues were sceptical about the project.  $\beta$  scientists are hardly able to work in a  $\gamma$  science field, which is evident from their social disinterest. They are trained to work with facts, not to contemplate about opinions. Perception by the public is not necessary identical to economic realities. In bilateral contacts the method of Sustainable Technology Development was explained with success.

Some researchers working in the project team feared to loose their customers, because they won't be taken seriously. The discussions about all these problems in the team were open and of good quality. Discussions during the workshop and the contacts with the stakeholders took away most objections.

## **Conclusions and future plans**

The project "Sustainable poultry meat production systems" is currently investigating how the future developments and demands for the Dutch Poultry Meat Industry can be met with innovative sustainable production systems.

Based on interviews and intensive discussions with stakeholders from the regular and organic meat production chains and from NGO's dealing with animal welfare, environmental issues and nature protection we have been able to identify several opportunities for sustainable poultry production systems.

The Dutch Poultry Meat producers will in future have to focus on quality and not on quantity. Optimal animal welfare, food safety and integration of the production industry in the rural setting are essential for achieving a high quality poultry meat production system. High quality sustainable systems require the stakeholders to be aware that good and direct communication between the producer and the consumer is vital. Furthermore, the producer should be responsible for the quality of the product on the consumer's dish. The latter is only possible if the producer regains the control over his own product.

This year (2002) several stakeholders together will start with a short producer-owned production chain. The whole production process (from the hatching egg to the slaughtered carcass) should be concentrated on the farm, thus preventing transport of living animals, cross-contamination at the slaughterhouse, etc. The project should serve as the start-up of other sustainable poultry meat production systems. Furthermore, the project will focus on how to re-establish the communication between the rural producers and the urban consumers.

### **References**

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