

DEVELOPMENTAL RESEARCH ON FARM ANIMAL WELFARE IN EUROPEAN COUNTRIES

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ABSTRACT

The objective of this study was to elucidate the critical state of farm animal welfare research in European countries and to point out toward the potential outcome. The EU Framework for research on farm animal welfare is described and links are given to some recently or ongoing Community-funded research projects having an important animal welfare component. Furthermore, potential stakeholders who should be encouraged to participate in farm animal welfare research are considered and legal and economic issues with a need for further research are discussed. The study concludes by summarizing achievements and future prospects on EU farm animal welfare research.

INTRODUCTION

“In formulating and implementing the Community's agriculture, transport, internal market and research policies, the Community and the Member States shall pay full regard to the welfare requirements of animals, while respecting the legislative or administrative provisions and customs of the Member States relating in particular to religious rites, cultural traditions and regional heritage.” (European Council, 1997). This excerpt from the Treaty of Amsterdam's Animal Welfare Protocol reflects the growing concern of EU citizens about how animals in general, and farm animals in particular, are treated.

The concern stems from ethical considerations, but it is also closely linked to the notion that happy animals are healthy animals and that proper care of farm animals leads to safer, better quality meat, eggs and dairy products (European Commission, 2002).

Is this true? What are the welfare requirements of farm animals? What are the ethics of farm animal welfare? What is the cost of farm animal welfare? How do animal welfare measures affect the competitiveness of EU products? Are consumers willing to pay more for foods produced under 'animal-friendly' conditions? What is the legal framework to support farm animal welfare? What are the training needs on farm animal welfare issues?

To develop sound policies taking animal welfare into account, EU policy-makers need objective answers to these questions. This is where research comes in.

EU FRAMEWORK FOR FARM ANIMAL WELFARE RESEARCH

The European Commission has been supporting animal welfare research since 1994, at the start of the Fourth Framework Programme for Research and Technological Development

(FP4). Under FP4, the research was conducted mainly as part of the Agriculture and Fisheries (FAIR) Programme, with other research projects funded under the Biotechnology (BIOTECH) Programme. Under FP5 (1998-2002), animal welfare was supported within the Quality of Life thematic programme, under Key Action 5 – Sustainable agriculture, fisheries and forestry, including integrated development of rural areas. These projects focused directly on welfare-related research and also on public opinion about animal welfare issues. Projects selected for FP4 and FP5 covered a wide variety of topics: the animal welfare aspects of organic farming; genetic selection of breeds less susceptible to certain health problems; the role of biotechnology; abnormal development linked to embryo manipulation (in vitro fertilisation and cloning); and how to minimise stress and avoid injury on the farm and during transport. Other projects look at animal welfare from a human perspective: consumer attitudes and behaviour, and the ethical, societal, and legal aspects of farming. Beyond the projects leading to direct improvements for animal welfare and food quality, the project on organic farming revealed that, while there is evidence that organic standards have a positive impact on animal welfare, animal health on organic farms is not necessarily better than on conventional farms. The project on consumer opinion was made complex due to the difference between what the public says it wants and actual purchasing behaviour regarding animal products.

More recently, the Sixth Framework Programme (FP6), which has run from 2002 to 2006, included animal welfare research as part of a policy-oriented approach. Animal welfare also had its place under the Food Quality and Safety thematic priority, as well as being open to support aimed at strengthening the European Research Area (ERA). FP6 looked into animal welfare as a part of policy-related research, with the aim of providing healthy food supplies and exploring new fields of research. A major innovation of FP6 is the way European researchers worked together on a selected number of priority research themes in a more integrated way than before and with streamlined administrative procedures. To implement the thematic priorities of FP6, two new instruments have been put in place – networks of excellence and integrated projects. Networks of excellence contributed to the structuring of the ERA by bringing together a critical mass of resources and expertise needed to provide European leadership in a given topic. Integrated projects combined research and non-research activities needed to reach an ambitious research goal.

Coming to date, the European Union Framework Programme 7 (FP7) is the European Union's main instrument for funding research and development in selected priority areas. FP7 will run for seven years from 2007 to 2013 and is grouped into four programmes: Cooperation, Ideas, People and Capacities. For each programme there are specific themes corresponding to the main areas of EU research policy (European Commission, 2006). FP7 highlights animal welfare for livestock species under theme 2 “Food Agriculture and Biotechnology” of the cooperation programme as part of the strategy to develop the knowledge based bio-economy.

PROJECT HIGHLIGHTS

Links are given below to some recently completed or ongoing Community-funded research projects having an important animal welfare component (Sossidou and Szücs, 2007).

The **LAMECOW** project takes a multi-disciplinary approach to reducing lameness and improving dairy cow welfare by assessing existing husbandry systems and studying the biomechanics of bovine hooves.

The **PIGGAS** project aims to provide information on the welfare implications of surgical castration in pigs, in particular taking into account the practice of pig castration in the EU, stakeholders attitudes to this practice and possible alternatives to existing surgical interventions.

COST ACTION 846. The main objective of this COST Action was to develop, standardise and inter-calibrate methods of measuring and monitoring farm animal welfare and to stimulate welfare research. Important benefits of this Action include sharing of practical experience and results by participating countries and the avoidance of duplication of effort. In several European institutes and universities questions related to measurement and monitoring of animal welfare are addressed by a variety of different methodologies and techniques. The adoption of such a synergistic approach means that the whole will be greater than the sum of the parts. It also aimed to stimulate mobility of researchers and technicians between laboratories involved in this Action, especially from countries with a less well established track record in this field and thus enhancing knowledge transfer. Mobility of scientists was facilitated by Short-Term Scientific Missions. This Action created a 'knowledge base' from which European bodies as well as national governments may request advice.

EU FAIR CT98-3678 entitled '*Consumer Concerns About Animal Welfare And The Impact On Food Choice*' coordinated by the Centre for Food Economics Research, Department of Agricultural and Food Economics, The University of Reading. The research identified a series of barriers to purchasing 'animal-friendly' products. The barriers are: lack of information about production methods, lack of availability of products, lack of belief in the ability of individual consumers to make a difference to animal welfare standards, disassociating the product from the animal of origin, and the increased cost of 'animal-friendly' products.

SSPE-CT-2004-502315 project entitled '**Welfare implications of changes in production systems for laying hens**', acronym '**LayWel**', concluded in 2006, is a research project funded by the FP6 European Research Programme and national fundings from different EU countries. The LayWel project studies the welfare implications of changes in production systems for laying hens. The project examines such issues as housing systems, behaviour, physiology and stress indicators, and productivity and egg quality. The general objective of the LayWel project is to produce a series of reports on the welfare of laying hens in various systems, with special focus on enriched cages, and to make the information well known, particularly over all member states of the EU and associated countries. A few highlights of exploitable knowledge from Laywel Working Groups are : a) A scoring system to quantify feather quality, skin lesions and other health characteristics that is important to be able to measure the effect of housing, management and/or treatment on health and welfare of hens, b) Integrated welfare assessment report that is concluded with a list of recommendations that highlights areas for future research and development as well as some of the most important indicators of welfare that should be routinely and frequently monitored on farm. The conclusions in the report are that, with the exception of conventional cages, all systems have the potential to provide satisfactory welfare for laying hens. However this potential is not always realized in practice. Among the numerous explanations are management, climate, design, different responses by different genotypes and interacting effects. For example there was different use of nest-boxes in furnished cages by different genotypes. The design of small furnished cages also had a significant impact on dustbath use, c) Manual of self assessment of welfare of laying hens on farm that provides a tool for farmers to monitor the welfare status of their birds in an objective way, and d) The database comprising results of many studies on

housing of laying hens in various European countries. The data were collected both on commercial farms and in experimental units.

FOOD-CT-2004-506508 project entitled ‘Integration of animal welfare in the food quality chain: from public concern to improved welfare and transparent quality’, acronym ‘Welfare Quality’, is an EU funded project about integration of animal welfare in the food quality chain: from public concern to improved welfare and transparent quality. This project aims to accommodate societal concerns and market demands, to develop reliable on-farm monitoring systems, product information systems, and practical species-specific strategies to improve animal welfare. Forty institutes and universities (representing thirteen European countries) with specialist expertise participate in this integrated research project. The project started in May 2004 and will take five years to complete. The report derived from the research EU consumers willing to pay for better animal welfare showed, that citizens feel they lack the necessary information to distinguish between products on animal welfare grounds. EU consumers are willing to make an extra effort to buy animal welfare friendly products, even if this means changing where they shop or paying more for goods. Moreover, consumer' concerns about animal welfare when shopping vary widely between European countries. Animal welfare is of considerable importance to European consumers. Nowadays food quality is not only determined by the overall nature and safety of the end product but also by the perceived welfare status of the animals from which the food is produced.

WELFOOD Project is a Leonardo Da Vinci Community Vocational Training Action Project. Its complete title out of which the acronym is form is “Promoting quality assurance in animal WELfare – environment – FOOD quality interaction studies through upgraded e-Learning”. WELFOOD addressed objectives such as improvement and competencies of the skills in vocational training to promote employability and facilitate integration and reintegration in terms of capabilities and knowledge, needed for improved technologies in animal husbandry and food industry. Emphasis was laid on skills in food quality assurance issues related to animal welfare, environment and food quality interactions required by public perception due to their role in food safety and security as well as ethical considerations.

The on-going Leonardo da Vinci Lifelong Learning Programme **WELANIMAL Project entitled “A new approach on different aspects of welfare, environment and food interactions in Central and Southeastern Europe with the use of ICT”** aims to adapt vocational training products and modalities for training of and provision of skills to workers at related sectors in order to meet the consumers’ requirements of environmentally and animal friendly produced animal foods and with the maxim of “from fork to farm” developed by WELFOOD project to Central and Southeastern Europe region according to their characteristics and needs.

The objectives of WELANIMAL project are:

- To transfer vocational training products of WELFOOD project including animal welfare, environmental influences on animal and their welfare, as well as food quality and safety to central and South east Europe, to implement adaptation and to improve welfood project products by estimating differences due to structure of this region
- To evaluate whether life conditions of animals raised in the central and southeast of Europe are met with the requirements of animal welfare;
- To evaluate welfare conditions of animals in European farms by sampling in a large scale;

- To define more global “professional animal welfare” by evaluating the effects of different social, economic, cultural and religious approaches on welfare apprehension;
- To explain the role of healthy and contented animals in the story of ‘from fork to farm’ food production for the quality and healthy food demand of consumers that are ultimate users in the light of the scientific data;
- To support the knowledge on production systems that provide contribution to develop new technologies and assure demanded expert and skilful persons for new technologies;
- To encourage the development of “Humane animal production system” at a platform that covers common ethical and moral values of consumers.

STAKEHOLDERS

Many different stakeholders should be encouraged to participate in farm animal welfare research (Welfare Quality, 2007):

Farmers and the food industry, are obviously key to any future research as they are directly involved in rearing and processing farm animals. They are also essential participants in large-scale trials. High husbandry standards not only can improve animal welfare but contribute to the generation of higher commodity prices. Also, lower welfare conditions are proving costly through harmful effects on the animals’ health, productivity and product quality;

Consumers, because their behaviour when purchasing animal products is critical to animal welfare policy. There is also a link in consumers’ minds between animal welfare and the quality of food while during the recent years there is a growing interest amongst consumers for the environmental sustainability, animal welfare and “ethical quality” of the animal products;

Environmental groups and ‘consumers of the environment’, because agricultural practices have an environmental impact;

Animal welfare groups, because they represent the animals, and their voice can contribute to shaping societal concerns, and because the public trusts them. While animals are obviously passive stakeholders in research, animal welfare groups should be included as representatives of animal interests. The public trusts these groups more than it trusts national, EU or farming/industrial bodies; and

Retailers and caterers, key indicators of consumer trends representing a powerful driving force for animal welfare improvement. Retailers more and more recognise animal welfare as a quality aspect of animal products and a relevant factor in consumer acceptance of the animal product. Thus, supermarkets translate the worries of the consumer into specifications for animal housing and management (including transport). It seems a more general trend that supermarkets want to label and market their products as ‘animal friendly’.

ECONOMIC EVALUATION OF FARM ANIMAL WELFARE POLICIES

There are very few studies on the economic evaluation of farm animal welfare and this is due to two fundamental problems in attempting to access the impact of compliance with animal welfare standards. First, the measurement of animal welfare is fraught with difficulties-both theoretical and practical. There is no accepted method for measuring the level of wellbeing of animals. Second, there is a host of interacting factors affecting the welfare of farm animals at any one time.

Maintain higher standards of animal welfare sometimes leads to increased production and transport costs, but there are often only marginally higher. For example, the extra cost of an egg produced from laying hens raised in a barn rather than laying hens raised in battery cage is only 1.3 euro cents, and the extra cost of producing a free-range egg is only 2.6 cents (European Commission, 2005).

Higher production costs can be offset by the reduced incidence of disease, higher yields and better product quality resulting from improved standards of animal welfare. Studies have shown that these costs savings can be as 17% of turnover, with sharp increases during epidemics (European Commission, 2007).

The need to improve production and cut costs is clearly important in livestock farming. Some farmers fear the cost of improving animal welfare will prove prohibitive. However, it is important to take all factors into account when estimating this. Research shows that major welfare improvements can sometimes be achieved at very low expenditure. It may turn out that improving animal welfare seldom entails a net increase in production costs. In addition, improved product quality can make it profitable to invest in animal welfare as farmers can charge more for their animals.

Moreover, animal welfare is an important part of the movement towards sustainable farming. Such farming methods do not exhaust resources and they contribute to rural development. Under the Common Agricultural Policy (CAP), farmers can receive some compensation for the costs of adapting to animal welfare legislation or applying standards that are stricter than the legal minimum. The influence of the CAP on farm animal welfare is explored through examination of two important sectors, dairying and pigs (Winter et al., 1998). In both cases it is concluded that CAP, either directly or indirectly, has encouraged the structural changes in these sectors that account for a deteriorating record of farm animal welfare. However, it is conceded that market and technological factors are also of considerable importance. More research is required to isolate policy influences.

LEGAL FRAMEWORK OF FARM ANIMAL WELFARE

Legislation has been the commonest way of protecting farm animal welfare. Animal welfare has been taken into consideration within the European Union for over 30 years with a growing body of legislation accruing on this issue since the 1970s. Since 1999, the Protocol on Protection and Welfare of Animals of the Amsterdam Treaty has set out new fundamental principles concerning European Union action in this area.

In addition, within recent decades, several comprehensive pieces of animal welfare legislation have been introduced in Europe, many of them constraining the intensive confinement of farm animals. A considerable body of European and national legislation covers animal welfare issues (Eurogroup, 1995).

There are presently no statutory requirements relating to the welfare provenance of animal-based food products. In respect of food labelling this is currently within the competence of the European Commission and any new food related legislation is a matter for discussion between Member States. Statements that are perceived to be linked to animal welfare such as “free range”, “grass fed”, “outdoor reared”, are appearing on a large number of animal based-products. However, there is very few dedicated animal welfare labelling schemes. The main practical problem of supplying information (including labelling) relates to the ability to

provide sound and scientifically based information on the welfare status of animals used to supply particular products. This relates to the whole issue of the on going research on welfare measurement and the importance of welfare outcomes.

ACHIEVEMENTS AND FUTURE PROSPECTS

Results of the majority of projects as well as continued attention paid by the public indicated the need for the further improvements in the concept of animal welfare and for a new approach in relation to the social role and character of animal production. This requires intensification of research in areas related to animal welfare. In the first place, there is a need for standards for animal welfare based on sound scientific evidence and research data. The need for standards in this field is evident both in intensive and in extensive systems. Development of standards for animal welfare requires more intensive basic and applied research in a number of fields such as animal genetics (e.g. interaction between genotype and environment, genetics of adaptability), animal physiology, ethics, animal health and management, production systems. On the other hand, there is a need for the establishment of reliable methods of measuring animal welfare at the farm level and at the level of an individual animal. A balanced welfare assessment system has to satisfy public, industry, political and scientific concerns before it can be widely accepted. There is a clear need for the harmonised, comprehensive and reliable welfare assessment and product information systems. Moreover, scientists studying animal welfare generally agree that the best approach to assessing welfare is to integrate research studies across disciplines, using several different methodologies. A holistic approach to evaluating welfare, using all the available science, results in a more complete assessment.

Further research work will need to be carried out to reinforce a full implementation of the 3Rs (Replacement, Reduction and Refinement) in all areas of animal use, ensure coherence between Directive 86/609/EEC and legislation requiring animal experiments, as well as examining in more detail the mutual acceptance of data and mutual recognition agreements as a means of reducing the numbers of animals used in experiments.

The influence of climate change and variability on livestock production systems and farm animal welfare is expected to be larger in the future and especially in marginal areas, mainly due to the strong link with local environment and the scarce access to technologies and financial support. Decision makers in animal farming will need advanced methods of investigations to improve predictions of climate variability and projections of climate change, as a basis to develop integrated projects for livestock and, more generally, agriculture adaptability. The research should be based on the study and identification of genes associated with the acclimation of domestic animals to thermal stress. Breeding programs to increase resistance particularly to heat stress should be planned. New disciplines, like agroclimatology, will be crucial to furnish readily available inputs for integrating weather variability effects useful for short and long-term livestock adjustment strategies.

Impact of feed processing in animal nutrition has also been in the focus of the current research in this field. The problem remains relevant also for the future research programmes.

The future of farm animal welfare and food quality will undoubtedly be based on a mutual development of legislative and market forces. Animal welfare labels should be subject to EU legal definition. Producers and retailers should provide animal welfare information on labels. Information should be clear, accurate and credible so as to avoid consumer confusion (e.g. over 'farm fresh' eggs). These definitions, and measures for inspection and enforcement,

should be a significant part of the public information campaign. Some of technical norms and requirements will have to be imposed by EU regulations, together with standards to be adhered to and methods of measuring animal welfare.

Impact of the above adaptations on costs of production and the economy of animal industry and on global competitiveness of the EU animal production should be monitored and analysed using existing tools and methods as well as new ones to be developed by related scientific disciplines and research. In addition, research devised to address cost need to take into account that although consumers say they are willing to pay, invariably they do not. The cost of improved animal welfare may need to be viewed as the cost for a public good which, although paid for by the taxpayer, is subsumed under general agricultural financial support rather than differentiated product prices. This requires redefining EU agricultural policy to provide incentives and rewards for farmers to convert to higher standards of animals' welfare without passing on direct costs to consumers, which may only serve as barriers to purchase.

Research has shown that both farm animal welfare and food quality improves when the people who care for, transport and handle the animals are well trained, have a positive attitude towards their jobs and the animals, treat the animals with care, and are attentive to their needs. It is therefore important to educate and inform these professionals. New and improved knowledge of factors determining animal welfare will have the direct and immediate implementation in production technologies. It should be disseminated to producers and farming community so as to contribute to the introduction of necessary adaptation of production methods, including changes in production systems.

Moreover, consumers and the general public should be continuously and in the appropriate manner kept informed on new knowledge as well as on production technologies applied and measure undertaken by producers and legislators to ensure animal welfare. Increased awareness of the European consumers on specificity, safety and quality of animal products The realities of modern animal production need to be communicated in a way that takes into account the role of various stakeholders – producers, manufacturers, distributors, retailers, exporters and consumers – and addresses their respective roles in animal welfare standards.

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