Welfare Quality
Science and society improving animal welfare

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Welfare Quality
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Introducing the Welfare Quality Project

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Introduction

The main thrust of the Welfare Quality project is to provide practical science based tools and strategies to improve the welfare of farm animals.

Since the early 1970's, there have been major changes in agricultural animal production (c.f. Blokhuis *et al* 1998). Farms have become highly specialised, production has intensified and there have been striking increases in the numbers of animals per farm and in productivity. Housing systems and management practices have also changed profoundly with increased mechanisation and other technological developments. In a nutshell, despite offering welfare benefits such as increased hygiene and minimal risk of predation, animal production has become increasingly industrialised, with quantity often taking precedence over quality and attention being focused primarily on supply, price and competition. Growing public awareness of these changes means that, together with food safety and environmental pollution, animal welfare now plays a major role in all discussions about animal production.

Unfortunately, while these changes were taking place, cultural, attitudinal and commercial barriers hampered constructive communication between farmers and the people who ultimately eat what is produced; this resulted in a mismatch between public perception of the way animal products are produced, and the realities of modern animal production (Buller and Morris 2002).

Recent crises such as BSE, swine fever, foot and mouth disease and avian influenza, have further increased awareness that animal production is more than just an industry. A frequent and worrying question is whether or not animal production has become unsustainable for people, animals and the environment alike. Indeed, a growing ethical concern related to production processes can be identified as a major trend in European food consumer behaviour (Steenkamp, 1996).

Welfare improvement

As a basis for the Welfare Quality (WQ) project three routes to improved animal welfare in Europe were identified (see Figure 1). These routes are not mutually exclusive and, in practice, all three routes can be followed in parallel and can strengthen each other. By supporting all three routes Welfare Quality will enable stakeholders and policy makers to apply the Welfare Quality results in the most effective way, accommodating specific production, market or political circumstances.

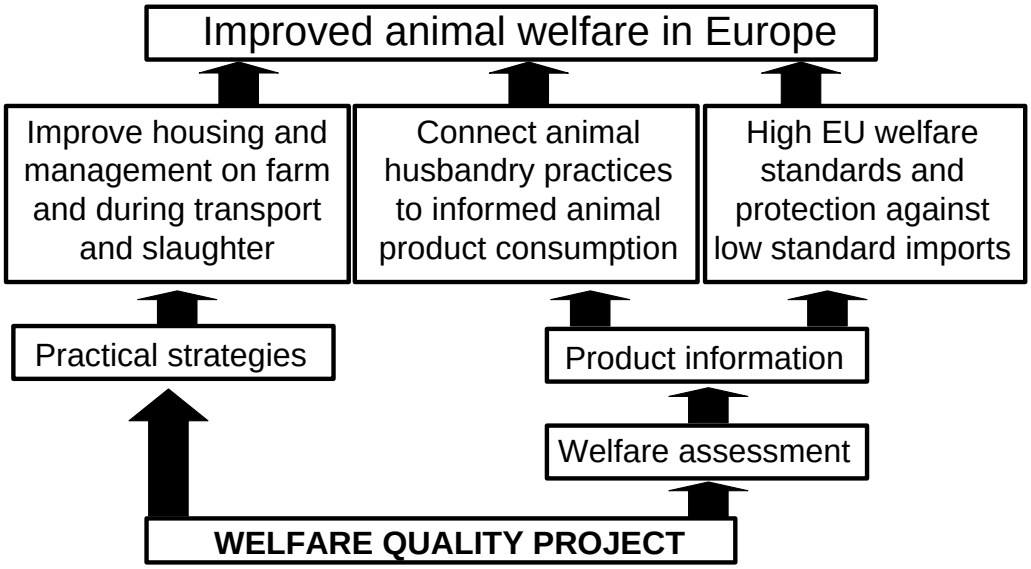

Figure 1. The Welfare Quality project supports three routes to improve animal welfare

The first route relies on improving animal welfare by defining innovative, knowledge-based, practical species-specific strategies that can be applied directly on the farm, or elsewhere in primary production (e.g. breeding companies).
By developing a reliable, standardized welfare monitoring system and underpinning the spread of understandable information, the second route will make animal husbandry practices more transparent and thereby help consumers to make informed choices about the products they buy. Such improved transparency relies on clear marketing strategies, and the main players here are the consumers, the retailers and the food service sector.
The third route involves EU regulations to improve farm animal welfare by ensuring better conditions of housing, transport, slaughter etc.

Practical strategies
Modern farming systems mean that many animals (particularly poultry and pigs) are kept in very barren and monotonous conditions. This is likely to cause boredom, depression, fear, pathological anxiety and the development of disturbed and/or damaging behaviours (Mench 1994, Zulkifli & Siegel 1995; Jones 1997; 2001). Furthermore, farming practice has often changed too rapidly, and frequently, for the animals' biology and behaviour to evolve appropriately and at the same pace (Faure et al. 2003). Moreover, breeding programmes often focussed mainly on production characteristics and neglected relevant welfare-related traits.
Welfare is determined by the animals' characteristics as well as their housing and management. Indeed, it is increasingly recognised that selective breeding is a powerful tool for alleviating welfare problems (Jones, 1997; Grandin, 1998; Faure et al. 2003) and that appropriate environmental enrichment, including positive human contact, can dramatically enhance welfare (Mench 1994; Hemsworth & Coleman 1998; Jones 2001). Welfare Quality therefore addresses both genetic and environmental strategies in order to provide practicable and affordable welfare improvements.

Informed animal product consumption

Earlier EU RTD projects (Consumer Concern about Farm Animal Welfare and Food Choice (EU-FAIR-98-3678, 1998-2001) and Quality Policy and Consumer Behaviour towards Meat (EU-FAIR-CT96-0045, 1996-1999) revealed a lack of transparency in the market for animal products and the increasing demand for correct and reliable information about the way in which animal-based food products are actually produced (Miele and Parisi 2000; Harper and Henson 2000).This 'lack of transparency' was recently illustrated by the results of a European survey (European Commission, 2005) which concluded that "it is difficult for consumers to identify products sourced from animal welfare friendly production systems".

The above RTD projects also revealed a growing market for food products that are perceived as more 'animal-friendly', e.g. free-range eggs and organic meat (Miele 1999; Harper and Henson 2001; Miele and Parisi 2001).

Welfare Quality will provide consumers with sufficiently transparent information to make reasoned judgements about the 'welfare history' of the animal products available on the shelves.

A thorough knowledge of consumer concerns and behaviour is hugely important in defining the kind of information consumers need and in developing effective strategies for communicating that information. Welfare Quality incorporates these requirements in the research effort.

Retailers and the food service sector are major players in the implementation of communication strategies on animal welfare. Welfare Quality therefore investigates how retailers in selected European countries view welfare issues, their role in incorporating welfare concerns in the supply chain, and the scope for expanding retailer-led welfare initiatives.

Moreover, Welfare Quality will also identify potential barriers to the development of animal friendly products faced by producers.

EU animal welfare regulations

In recent years, recommendations of the Council of Europe and EU Directives are becoming increasingly stringent. For instance, whereas a minimum standard for the size of individual calves' crates was formulated in 1991, such crates were actually prohibited for calves over two months of age six years later (EC Directive 91/629 and 97/2). A similar trend was seen in the Directives on laying hens, e.g., the most recent EU Directive (1999/74/EC) banning the conventional battery cage as from 2012.

Animal welfare must also be considered in relation to the international (global) dimension of the trade in animals and animal products. The European Commission is addressing animal welfare as an important non-trade concern in WTO negotiations. At some stage, setting ever higher animal welfare standards in Europe will require measures to prevent the importation of lower standard products from third countries. A number of practical strategies could be employed, and these include:

a) appropriate labelling

b) the possibility of compensation where higher standards lead directly to higher costs (European Communities Proposal, 2000).

Welfare Quality will contribute tools and instruments to explore and support these strategies.

The Welfare Quality approach

Practical strategies

The practical strategies developed in Welfare Quality will include both environmental and genetic approaches aimed at minimising the expression of harmful behavioural and physiological states, providing animals with a safe but stimulating environment, and improving human-animal relationships through appropriate training schemes for stockpersons.

Our efforts will focus on situations that are known to cause consumer concern as well as those where earlier studies have revealed welfare problems.
To be viable, remedial strategies must satisfy both welfare and economic requirements, and they must be practicable, i.e. affordable and easy to implement by the farmer and/or breeding company. Practical solutions do not necessarily imply the exclusive adoption of free-range systems or of extensive, organic farming. Intensive forms of livestock farming may also safeguard the animals' welfare, providing that they meet their most important needs.
At present Welfare Quality addresses six particular welfare problems: handling stress, harmful traits, injurious behaviours, lameness, neonatal mortality, and social stress.

Welfare monitoring
The two routes described above require reliable and practicable on-farm welfare assessment systems to generate the necessary product information. Such systems should not only enable us to assess the current welfare status of the animals but to also evaluate potential risks to their welfare.
A main thrust of the Welfare Quality project is to develop welfare assessment systems for different species. Observation of the animal's environment alone, i.e. design measures, does not address the potentially profound effects of the way the farmer manages the animals. Moreover, the links between design measures and the animals' welfare status are not always clearly understood. Therefore, Welfare Quality bases its assessment system mainly on the actual welfare state of the animals.
Clearly, welfare is a multi-dimensional state and an effective assessment system must address many different aspects such as behaviour, health, condition, performance etc. Therefore, welfare science is by definition multi-disciplinary. Furthermore, a variety of methodologies may be applied within disciplines. For these reasons, Welfare Quality builds on European strengths in the broad field of animal welfare, and integrates and inter-relates the most appropriate specialist expertise. Our measures will be founded on sound scientific analysis, and integrated into a standardised methodology for assessing welfare on an objective, scientific basis using both existing and new innovative methods.
The feedback of information to the farmer and his/her uptake of recommendations and remedial measures represent the most direct advantages of this approach. By generating appropriate and adequate responses in on-farm management this will lead to ongoing improvements in welfare status. Given the successful operation of such a system, it should then be possible to award a license to the farm or the farmer.
To address consumer concerns and allow for the clear marketing and profiling of the product, a standard way of converting welfare-related measures into information that is conveyable to, and easily understood by, the consumer is needed. Our analyses of consumer concerns and behaviour will not only determine the kind of information that consumers want but will also help to develop effective strategies for communicating welfare standards. Thus, Welfare Quality will develop a food product welfare information standard (with several grades or levels), that offers assurance about welfare issues and production conditions. This will enable consumers (and retailers) to purchase products of a known standard.
Furthermore, the development of such an integrated, standardised assessment procedure will provide an invaluable tool for testing and evaluating new housing and husbandry systems as well (as new animal genotypes) before they are allowed onto the market. By identifying potential risks, such monitoring will play a critical preventative role.
The above-mentioned roles of on-farm monitoring systems are schematically illustrated in Figure 2.

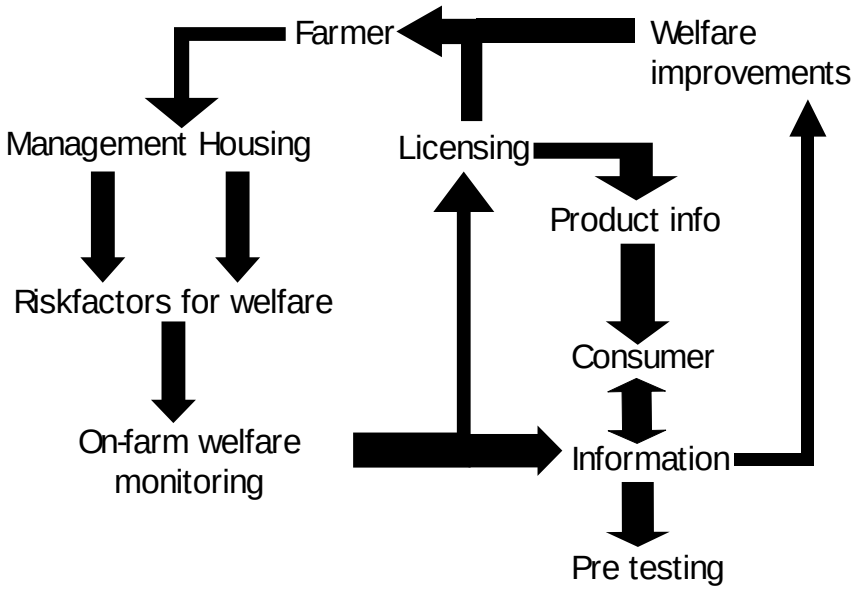

Figure 2. Diagrammatic representation of the roles of on-farm monitoring systems (adapted from Blokhuis et al. 2003). See text for explanation.

Considerable effort is being devoted to analysing and addressing the perceptions and concerns of principal stakeholders (public, industry, government, and academia) and providing appropriate feedback. Educational and media initiatives, web-based platforms etc. will further enhance societal involvement.
Through thorough analyses of consumer concerns and attitudes, stakeholder involvement, an effective science-society dialogue and an integrated science based approach, Welfare Quality will make significant contributions to the societal sustainability of European agriculture and to enhancing the competitiveness of its animal products through their guaranteed added value.

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Welfare Quality
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European consumers' views about farm animal welfare

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1. Introduction

One of the key aims of the Welfare Quality project is to improve animal welfare by integrating insights from both science and *society*. Thus, whilst the practical recommendations emerging from the project will be grounded in rigorous scientific research, they will also be sensitive to the social contexts in which (and through which) they will be applied. For example, there is little use in proposing a series of scientifically valid recommendations to improve animal welfare if farmers are unable to implement them. Similarly, there is little use in developing a scientifically credible welfare assessment scheme to act as a standard for welfare-friendly food products if the categories chosen to assess welfare bear no resemblance to the understandings and preoccupations of different stakeholders. As such, one of the greatest challenges facing the project is how to successfully integrate scientific knowledges and lay understandings about animal welfare. Seen in this light, social scientific research into the beliefs and concerns of farmers, retailers and, in the case of this paper, consumers should not be seen as merely a means of assessing these 'stakeholder' groups, so that the findings of a traditional, pristine, tightly circumscribed science might be more easily communicated to them, but rather, it should be viewed as a way of critically evaluating and reinforcing alternative forms of knowing and of promoting the cross-fertilisation of ideas between science and society, so that we can move towards a more democratic and deliberative model of applied science (see Irwin and Wynne 1996)

The welfare quality project is divided into a number of subprojects and it is the role of sub-project 1 to undertake social scientific research into the attitudes and practices of consumers (work package 1), retailers (work package 2) and producers (work package 3). Within work package 1, consumers' concerns and attitudes towards animal welfare are being investigated by the use of four complementary strategies, namely; a review of scientific literature on this topic; the development of a new theoretical framework for understanding the consumption of welfare-friendly food products[3] and two phases of empirical investigation: a qualitative approach to consumers' views and beliefs by means of focus group discussions; and finally a quantitative approach with a telephone survey across the seven study countries (see the article by Kjærnes in this volume).

1.1. Focus group interviews with consumers

This paper presents the first results of the focus groups interviews with consumers in seven study countries (Italy, France, Hungary, UK, the Netherlands, Norway and Sweden).

The aim of the focus groups was to investigate how animal welfare concerns are relevant for citizens whilst shopping for food and what kind of information is considered relevant for assessing the 'animal friendliness' of the products available on the market. Therefore in the focus group discussion we dealt with consumers' knowledge about animal farming, their sources of information about farm animal welfare, their opinions about public institutions and private organisations in providing such information.

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[3] See Kjøstard, I. (edited by) 'Literature Reviews' (pp.3-51) and Kjærnes, U. (edited by) 'Theoretical Framework' (pp-53-79) in *Farm Animal Welfare Concerns- Consumers, Retailers and Producers* eds Roex, J. and Miele, M. (2005), Welfare Quality Reports N° 1, Cardiff University

Moreover, in this phase of the research we wanted to assess the ways in which consumers define the welfare of farm animals and their opinions on a list of areas of concerns and parameters developed by the scientists in Welfare Quality in their attempt to define a procedure for an 'on farm monitoring scheme', to be codified in a standard (see the article by Keeling and Veissier in this volume).

While the focus group discussions with consumers dealt with several dimensions of animal foods consumption and addressed issues of human-animal relationships in the context of food consumption practices (see table 2), here we present only some preliminary results in a comparative perspective and we emphasise the following topics: variations in animal farming knowledge and information about animal friendly products available on the market among the seven study countries, differences and commonalities in consumers' and scientists' definitions of animal welfare.

2. Methodology

This particular phase of the research into European consumers' views about farm animal welfare was undertaken using the qualitative technique of focus group analysis (see Greenbaum 1998, Krueger 1998). As a first approximation one might describe focus groups as small group interviews, or discussion forums that focus attention on a particular issue. However, this undersells the amount of work that goes into carefully selecting the participants for each group in order to ensure that both a range of different opinions are expressed and to facilitate a fruitful group dynamic. Furthermore, it undersells the amount of work that is required to prepare a discussion/activity guide that helps to stimulate group interaction and that attempts to elicit information not just about consumers' conscious reflections on these issues, but also (primarily through the technique of framing questions in such a way that they are relevant to consumers' everyday experiences) to gain insights into the routine, non-reflective, practices that consumers undertake and the implicit assumptions they hold in relation to certain issues. Seen in this light, focus groups allow us to 'unpack' people's ideas and opinions and to explore the motivations and *situated logics* behind them, they also allow us to explore some of the interconnections between everyday taken-for-granted practices (see De Certeau 1984, Bourdieu 1984) and how these practices are articulated. However, what focus groups cannot do, is provide us with statistically valid generalisations and, as such, we must be very tentative in the conclusions we draw from them. This highlights the benefits of viewing these focus group results in conjunction with the quantitative survey results (also presented in this volume, see article by Kjaernes). These research methodologies work well together, as one can use the focus group results to explore and 'unpack' the (often multiple) reasons for a particular statistical observation derived from the survey and one can use the quantitative survey results to assess the extent to which opinions expressed within the focus groups reflect the views of the population at large. Another important issue regarding the focus group analysis relates to the specific difficulties involved in conducting comparative qualitative research across several study countries.

Whilst a full discussion of these difficulties is beyond the scope of this paper, it is worth highlighting the fact that every effort was made to be both sensitive to the socio-cultural specificities of a given country and to ensure that there was a sufficient degree of commonality across the different focus groups to enable meaningful comparisons to be drawn.

The criteria used to select participants for the focus groups are listed in table 1. As we were eager to recruit 'ordinary' consumers, rather than people who were already highly motivated by animal welfare issues, we set the overall threshold for participation to include all those consumers who had 'a bare minimum level of interest in either farming or animal welfare'. The main motivation for the selection criteria for the individual groups was to ensure that people from a range of different socio-demographic and lifestyle backgrounds were included in our analysis, so that this would provide us with an opportunity to explore the full range of discourses associated with animal welfare and welfare-friendly food products. In addition to the criteria depicted in table 1, we also collected information on income, education and social class so that we would also be able to analyse the data with reference to these variables.

Table 1: Selection criteria for the consumer focus groups

GROUP	SELECTION CRITERIA
All participants	Aged 18-70, meat-eaters who eat meat at least once a week (except for group 6), must have a *bare minimum* level of interest in either animal welfare issues or farming
Group 1: Urban mothers	Female, aged under 50, with children (50% with at least one child under 5, 50% with at least one teenage child), urban dwellers
Group 2: Rural women	Female, aged under 50, must live in or have grown up in a 'rural' area, must not be farmers or farmers' partners
Group 3: Married or living with partner but without children	Mixed gender, 50% aged over 40, childless, or no children living at home at present, married or living with a partner, urban dwellers, must do at least 50% of food shopping
Group 4: Seniors	Mixed gender, aged 55-70, must do at least 50% of food shopping
Group 5: Young singles	Mixed gender, aged under 35, single, urban dwellers
Group 6: Politically active and vegetarian consumers	Mixed gender, 50% of the participants should classify themselves as vegetarians (vegans should not be included), 50% of the participants should be 'politically active' consumers (as defined in the recruitment questionnaire)
Group 7: Country specific group	Groups that are of particular interest within specific study countries (e.g. hunters in Norway, gourmets in Italy, ethnic minorities in France)

During the focus groups a range of different themes were addressed in relation to animal welfare and the consumption of welfare-friendly foods (see table 2).

When constructing the focus group discussion guides, we wanted to broach issues that both reflected the theoretical interests of the different country-based research teams and that would be of everyday relevance to the focus group participants. Moreover, we were eager to ensure that the discussion began with an exploration of everyday culinary practices, such as eating, preparing and shopping for food (so that we could frame the discussions in a way that was relevant to everyday lived experiences) before moving on to address other issues that were more specifically related to farm animal welfare. Once undertaken, all the focus groups were transcribed in full and the computer software package 'NVivo' was used *as an aid* for storing, manipulating and analysing the data (see Gibbs 2002, Bazeley and Richards 2005). Some of the initial results derived from this analysis are presented in the next section.

Table 2: Themes addressed within the focus groups

THEMES ADDRESSED	TOPICS WITHIN EACH THEME
1. Culinary practices	• Food consumption cultures and habits in different countries • The consumption, preparation and purchase of meat, dairy and egg products
2. Consumers' general knowledge about farming practices and animal welfare	• Sources of information • Evaluation of available information • Gaps in the provision of information
3. Consumers' knowledge of welfare-friendly food products	• Consumers' familiarity with welfare-friendly products • Consumers' familiarity with welfare-friendly certification/assurance schemes (and the criteria behind them) • Perceived pros and cons of different products and schemes
4. Consumers' evaluation of the provision of information about welfare-friendly products	• The level of consumer demand for information about animal welfare • Consumer preferences regarding product labelling
5. Consumers' interactions with and perceptions of welfare-friendly products	• Perceived positive and negative attributes of welfare-friendly foodstuffs • Barriers to purchasing welfare-friendly foodstuffs • Ethical dilemmas related to the purchase of welfare-friendly foodstuffs
6. Responsibility	• Consumer perception of who *should be* taking responsibility for animal welfare • The perceived roles of consumers in relation to the state with regard to animal welfare • Consumer perception of who is actually taking responsibility for animal welfare • The interconnections between consumer practices, consumer knowlegdes and notions of responsibility
7. Agency	• Strategies of political mobilisation adopted by consumers in relation to animal welfare • Consumers' perception of their ability to influence animal welfare • Consumer boycotts and 'buycotts' of specific meat or animal products • Reflexive and non-reflexive consumption practices
8. Trust	• Who consumers trust/distrust to provide reliable information about animal welfare • Why consumers trust some organisations but distrust others • Do levels of trust vary in relation to the specific issue under consideration (e.g. labelling, monitoring)?
9. Consumers' evaluations of a proposed scientifically based standard for farm animal welfare	• Participants' spontaneous animal welfare concerns and priorities • Participants' reactions to the list of ten welfare concerns developed by Welfare Quality scientists

3. Results

The results that follow represent our initial tentative findings based on the consumer focus group research conducted across the seven study countries. For the purpose of this paper we have chosen to focus our attention on four key topic areas taken from the overall list of topics that were addressed (see table 2). Whilst the results we present are by no means an exhaustive account of the research undertaken, we hope that they are illustrative of some of our key findings.

3.1 Consumers' general knowledge about farming practices and farm animal welfare

An important observation to make regarding consumers' understanding of 'animal welfare' is that the very concept of 'animal welfare' only appears, and indeed only really makes sense, within certain cultural-linguistic contexts. For example, in French, whilst there is a vocabulary to express notions of respect and care for animals, the term 'welfare' only tends to be used with specific reference to human well-being. As such, the very use of the term 'animal welfare' might seem a little awkward or even inappropriate within this context (especially given its implicit message about the status of animals in relation to humans). This is an important point to note, as language is not merely a passive and transparent tool for description but an active medium that helps to shape and mould our knowledge of the world (see Vygotski 1962, Shotter 1993).

Despite these cultural differences, it is possible to make a series of tentative observations regarding consumer knowledge about farming practices and farm animal welfare that seem to apply across the majority of our study countries. First, and foremost, it would seem that there is a general lack of consumer knowledge about these subjects. In the Netherlands, consumer knowledge about farm animal welfare and farming practices was found to be fragmentary, ambivalent and tainted by negative emotions. In Italy, the majority of focus group participants seemed to have little knowledge about the practices currently utilized in modern farms. In Hungary, consumer knowledge about farming and farm animal welfare was predominately limited to an understanding of how these activities/issues impact upon public health. Similarly, in the UK there was also a lack of consumer knowledge about these subjects, apart from specific issues relating to poultry and veal. However, we must qualify this general conclusion by adding that both the level and type of consumer knowledge (see Thrift 1996 on different types of knowing) varied between different social and cultural groups. Thus, for example (and as one might reasonably expect) the politically active and vegetarian consumers (group 6 in table 1) in general seemed to possess a more detailed level of understanding about these issues. Furthermore, whilst the majority of focus group participants seemed to derive their information on these subjects from secondary or indirect sources, on the whole, those living in rural areas were more likely to have had direct experience of farms and farming practices than their urban counterparts, although this did not always shape their perceptions in a positive light.

Second, across the majority of study countries focus group participants seemed to derive most of their (indirect) knowledge about these subjects through the mass media. Moreover, it would seem that consumer knowledge was to a large extent being fashioned by a scandal driven media that focused predominantly on negative issues. In France, consumer knowledge seemed to be shaped by striking and highly emotive media images and consumer opinions tended to be linked to topical questions.

In the UK, consumers' understandings were being shaped by a mass media that seemed to be more concerned with issues of farm animal transport and slaughter, than issues relating to animal rearing. In Italy, the media portrayal of recent food scandals, such as BSE and salmonella, has increased consumer interest in (and knowledge about) farming and in certain food products, such as battery produced eggs and foie gras. The mass media also seemed to exert a significant influence over consumer knowledge in both Hungary and the Netherlands.

Finally, and perhaps of most pressing importance for a project that is committed to providing consumers with an information system about the 'welfare quality' of certain foods, it would seem that a significant sub-section of consumers simply did not want to know about the animal welfare conditions of the foods they were consuming. Indeed, many consumers seemed to be deliberately avoiding knowledge about these issues, so that they would not have to face up to difficult ethical dilemmas. For example, one Italian consumer stated that:

" … I eat very little meat, consciously, but to know, to be informed would hypocritically make me too conscious of how these animals are killed and it would certainly stop me. Let's say that I eat without thinking. So I don't face a problem with information ..." (Italy, Group 2: Rural Women)

Moreover, consumers used different strategies to avoid having to face this 'problem with information'. For example, in addition to plain denial (see above quote), certain consumers were eager to delegate responsibility for animal welfare to other actors, such as supermarkets or the state. For example, another Italian consumer stated that:

"Anyway, as to buying products with information about animal welfare, I buy Esselunga products, even though they contain little information, because I trust them and I expect that they conform to this issues …" (Italy, Group 1: Urban Mothers)

To summarise, based on the qualitative information gleamed from the focus group discussions, one can tentatively conclude that there is a general lack of consumer knowledge about farming practices and animal welfare, that the knowledge consumers do possess is to a large extent shaped by mass media discourses and that a significant proportion of consumers deliberately avoid expanding their knowledge on these subjects in a desire to distance themselves from ethically challenging issues. Having discussed consumers' general knowledge about these issues, we would now like to turn to focus on consumers' knowledge and experience of welfare-friendly food products.

3.2 Consumers' knowledge and experience of welfare-friendly foods

The study of consumers' knowledge about, and familiarity with, welfare-friendly foods is an important endeavour, as it enables us to highlight some of the interconnections between the *material availability* of welfare-friendly foods, the pre-established but still evolving *product classifications, groupings and networks* (such as organic or high-quality) with which welfare-friendly foods must interact, and the *implicit, practically-driven understandings* that consumers possess about the meanings and benefits of welfare-friendly foods. Bearing these interconnections in mind, we would like to make a series of observations.

First, it is clear that consumers' understandings of what counts as a 'welfare-friendly' product are not as tightly circumscribed as scientific definitions of 'good animal welfare' and, as we shall see, consumers often conflated organic with welfare-friendly and even made implicit assumptions about the welfare credentials of products with ambiguous 'quality' labels.
Second, it would seem that consumers' familiarity with welfare-friendly foods varied widely from country to country, furthermore, whilst consumers' familiarity with different products was to an extent dependent on the availability of these products, this was not always the case. In Norway, whilst the majority of focus group participants were familiar with organic and free-range products, few were familiar with more specialised welfare-friendly products, such as Grøstad's farm or Stange chickens. Furthermore, many Norwegian consumers associated wild meat products, such as moose or reindeer (which were often obtained through local and informal channels) with high animal welfare standards, which illustrates that their perception of welfare friendly products goes well beyond the purchase of explicitly labelled products in shops. In the UK, the majority of focus group participants were very familiar with free-range eggs and most instantly recognised the organic label and uncritically equated it with good animal welfare practice. However, and perhaps surprisingly given the market presence of the RSPCA accredited 'freedom food' label that focuses specifically on animal welfare, very few focus group participants were aware of any specific welfare-friendly brands. In Sweden, there are few, if any, brands that are marketed solely on their animal welfare credentials, however there are a variety of organic/bio brands, such as Krav, Ugglarp, Bosarp, Naturkött and Änglamark, which explicitly include animal welfare in their product specifications. Of these brands, focus group participants were most familiar with the Krav label and the Naturkött label was also fairly well know, however few were familiar with the other brands. In the Netherlands, focus group participants were very familiar with free-range eggs and organic products, they were also familiar with the animal-friendly products sold in Albert Heijn (a major Dutch retailer). However, when it came to more specialised animal-friendly products consumer familiarity was more varied, for example whilst focus group participants were familiar with the label 'Greenfield' (free-range beef), they seemed almost completely unaware of products such as 'Loué' (free-range chicken) or 'Peter's farm' (free-range veal). In Hungary, despite the fact that some explicitly welfare-friendly products were available, such as 'Gyulai' quality controlled pork (natural foraging, special rearing), 'Mastergood' red master farmer chicken (free range), Herbahus turkey medallion (animal friendly production, free of medicines) and Farm bio eggs (organic), very few focus group participants were familiar with any of these products. In Italy, focus group participants were most familiar with Esselunga-Naturama products, the meat products sold in Coop, the organic lines of certain retailers and Almaverde-bio products. In France, at present, few animal-friendly product labels exist. However, many focus group participants were familiar with quality labels such as 'Label Rouge', which make a number of explicit welfare claims. They were also familiar with certain free-range and organic egg products, such as 'Mère Poulard, Le Mont Saint Michel' (eggs from outdoor reared hens) and 'Matines' (organic eggs). However, they were not so familiar with other more specialised products such as 'Terre et Saveur' Viande de Bœuf (a beef product label that makes claims about traceability and animal rearing) and 'Coop Natura Plan Charcuterie' (Swiss meat that has been reared with respect to animals).

Third, and as one can deduce from the descriptions above, in relation to their everyday practical encounters with food products, focus group participants were far more likely to come across welfare-friendliness as part of a *wider package* of food characteristics (e.g. as in 'organic' or 'high-quality/taste' product lines) rather than in the form of a product that is being marketed solely, or predominantly, on the basis of its animal welfare credentials (such as freedom foods in the UK). This in turn exerts an important influence over how consumers perceive and 'frame' notions of 'welfare-friendliness'. Thus for example, in certain product lines, in certain countries welfare-friendliness has all but been assimilated into wider notions (and tangible material networks) of organic or biologically/environmentally sound

foods. This is particularly common in the UK, Sweden and the Netherlands, which seems to have led certain consumers to uncritically equate organic with welfare-friendliness and even to use organic products as their *main reference p*oint for discussing animal welfare labels and animal-friendly products. Similarly, there is evidence to suggest that notions and physical attributes of welfare-friendliness are also being incorporated into wider discourses of food quality (where 'quality' is understood primarily in terms of taste and pleasure). This seems to be particularly prevalent in France, where 'quality' food labels, such as Label Rouge seamlessly mix and intertwine the rhetoric of food quality with the rhetoric of animal-friendliness (see figure 1). This in turn has led to consumers understanding welfare-friendliness through the lens of food quality.

Figure 1: Two French product labels that illustrate the intertwining of welfare-friendliness with wider discourses of food quality/taste (emphasis added).

Product Label 1: Terre et Saveur, Viande de bœuf (beef meat), *out of respect for taste and nature*.
Certified characteristics:

- Respect for good rearing practices
- Minimal maturation of 7 days for the pieces to be grilled and roasted (apart from flank, prime cut of beef and fillet)
- Guaranteed tractability, from the rearing to the selling place

Product Label 2: Label Rouge, Poulet Jaune farmers from the South-East, reared in the open air, Quality Grouping, Origin South-East, Class A, fresh products, *characteristics contributing to superior quality*: free-range reared in the open-air. Rearing duration at least 81 days. Fed with 100% of plants, minerals and vitamins of which 80% of minimum cereals.

Finally, there is also evidence to suggest that welfare-friendliness is being incorporated into wider discourses/material networks of human health (either through the notion that welfare-friendly foods are more nutritious than their conventional equivalents or through the notion that good welfare equates to good animal health, which in turn equates to reduced bio-security risk and improved human health). This type of 'packaging' or bundling together of ideas and product attributes can be seen in the Hungarian product 'Farm Bio eggs', the producers of which claim to be protecting 'the world, the environment and *our health*'. This in turn has led to (or perhaps we should say is associated with) certain Hungarian consumers perceiving welfare-friendliness in terms of benefits to human health. Thus, one can begin to see some of the interesting connections between consumer discourses of animal-friendliness and socio-material networks of organic, high-quality, and health conscious foods.
Having explored consumers' familiarity with currently available welfare-friendly products, we would now like to turn to explore in more detail the ways in which consumers define animal welfare and to examine the specific welfare concerns that they deem to be important.

3.3 Consumers' spontaneous concerns about farm animal welfare

All participants in the focus group discussions were asked to make a list of their own spontaneous concerns about animal welfare and then to discuss together what issues were more relevant in order to ensure a good level of farm animal welfare. In table 3 we report all the aspects mentioned by the focus group participants in the seven countries. There is clearly a common understanding of animal welfare among the participants in all countries, with only some culturally specific variations.

Consumers concerns about animal welfare can be clustered into three main sets of relationships: animal-environment, animal farming practices and human-animal. The most common aspect mentioned by consumers in order to define the welfare of farm animals in all countries is 'Outdoor access', which is a general definition for all those statements addressing the need for animals not to be confined in closed environments, at least for part of their lives.

Table 3: List of spontaneous concerns regarding farm animal welfare

Spontaneous Concerns	*France*	*Italy*	*The Netherlands*	*United Kingdom*	*Sweden*	*Norway*	*Hungary*
Outdoor access, free range, extensive production, Possibility to choose between indoors and outdoors		X	X	X	X	X	X
Space, natural space	X	X			X		
Natural type of feed, No artificial growth stimulants, Lifespan, Time for normal growth	X	X	X	X	X	X	X
Humane slaughter	X	X	X	X	X		
Transport (limited or avoided)	X	X	X	X	X	X	
Respect, Care, Physical comfort and security	X	X		X	X	X	
Good hygiene		X	X				X
Good quality of life	X	X		X		X	
Small scale production		X			X	X	
Breeding, genetic modification				X			
Products with someone 'accountable for' (farmer, vet.)		X				X	
No mutilations, no pains			X		X		
Natural light, fresh air		X	X				
Distractions (playing)			X				
Animals as individuals (name)						X	
Natural reproduction		X					
No use of routine medicines				X			
Wild animals						X	
Company, love, happiness					X		

'*Animals from here, they can walk outside in freedom, especially in the summer, and have generally a decent life. There is a big difference in (farming) practices in Germany or other countries, for example England, where these huge herds of livestock are kept inside all the time. To give you an example when I see that "Belgium" or "Belgium Blue", I do not have much desire to eat that!' (Norway).*

In many cases 'outdoor access' for farm animals is considered the best compromise between the ideal state of life for animals (the wild) and the need to rear animals for human consumption (e.g. For consumers in Norway, but also in Italy, the best condition of life for animals is in the wild, and only for 'wild animals' can we talk about real animal welfare): '*Animal welfare for farm animals is a nonsense, only for wild animals there is welfare' (Italy).*

Other important environmental aspects in the definition of farm animal welfare are 'Space', 'Fresh air', 'Natural light', 'Cleanliness and hygiene of animals' stables. Feeding practices (especially feed additives, growth additives, hormones, force feeding, *un*natural foods) and slaughtering practices are the farming practices that cause the greatest concerns. Animal suffering, (especially at the time of slaughter, in the case of animals' mutilations, and during transport to slaughter houses) is probably the greatest worry of certain groups of consumers and is often indicated as a reason for feeling guilty (*or uneasy*) about eating meat: '*I need to know how these animals are killed…' (Italy) 'To me the way in which animals are slaughtered is the most import issue' (Italy).*

Other consumers actively engage with processes of disassociation between the products ('meat') and the 'animal' that has been slaughtered in order to avoid the feelings of *guilt* (see above). Human-animal relationships are mostly defined in terms of farmers' duty to care for farm animals, a need to ensure respect for animals. Small scale production is most often associated with better care for animals, better chances for animals to be considered 'individuals', identified with a name, and not part of an undistinguished 'mass', as in industrial production (factory farming). '*Respect, space to roam, good feeding … a good life' (UK). 'While it was alive I would like it live how it was suppose to live' (UK)*. In a minority of cases human-animal relationships should encompass the sphere of intimate emotions: '*I have never seen a farmer caressing a cow*' *(Italy)*

3.4 Consumers' reactions to the scientist's list welfare concerns

After the discussion on the spontaneous definition of animal welfare the focus group participants were asked to comment on the '*Ten areas of concerns*' for developing an animal welfare monitoring scheme, identified by the animal scientists in Welfare Quality (see Keeling and Viessier, this volume). In all countries focus group participants received a document describing these areas of concerns (see tables 4 and 5) and were invited to point to differences and/or commonalities with their understanding of animal welfare and, more specifically, with the list of animal welfare concerns that they agreed during the previous phase of the discussion. There was a general positive reaction to the 'scientific' list of concerns in all countries, with the exception of France, where the first five areas of concern were accepted as appropriate '*basic', 'common', 'realistic'* but the second five areas of concerns were considered *'unrealistic', 'utopistic'* for farm animals for technical and financial reasons, for the current industrialisation of farming. Some of the focus group participants in France considered the use of terms such as '*emotions', or 'frustration'* to be inappropriate for farm animals because they were '*too human'.*

In Italy there was a completely opposite reaction to the list of concerns, for Italian participants all the areas of concerns were considered important and the language used in the description of the ten areas of concerns, and especially the last five areas have gained consumers consensus and favour:

'The categories identified by the scientists are better than ours because there is more than what we have said' (Italy)
'I dare to say that this list is complete!'(Italy)
'The ten categories selected …represent what we have said but in a deeper way' (Italy)

In the UK nearly all groups thought the concerns very comprehensive and did not exclude anything, except '*genetic modification' and 'slaughter'.* In Norway the discussion around the 'ten areas of concerns' was very limited, most participants felt that the list was covering all important aspects. The only point raised and to some extent debated, was the language used to talk about animal welfare that was considered '*too close to human nature'*. Some participants said that the list seemed to concern *children* instead of *animals*. The emotional life of animals was a more contested issue. In the Netherlands as well there was not much discussion about the list of concerns, the participants did not particularly agree or disagree with these principles. However, a number of participants expressed worries, and even shock, that those areas of concerns (e.g. *No hunger, thirst and malnutrition*) should have been listed in a future monitoring
scheme on animal welfare because they perceived that as an indication that the welfare of animals in current farming practices is probably worse than what they thought. For the Dutch participants all the areas of concerns were considered important, when asked they prioritised 1, 5, 8, 2 and 3 and considered 6 and 10 to be the least important. In Sweden the general impression on the experts' list was positive (it is *important and relevant)*. This list did not generate much discussion in all groups and the comments were mostly very general: *'it is good and comprehensive', 'well formulated, one can understand exactly what they mean.* However, a comparison between the participants' reactions to the expert list and their own list shows a few important differences: '*Outdoor access' 'small scale farming*' and 'GMO *restriction*' are not mentioned in the expert lists whilst they are relevant in the spontaneous lists of participants' concerns.

4. Conclusions

a) Participants in the focus group discussion in the seven countries do not prioritise animal welfare considerations while shopping for food but when asked about it they show high interest and engagement.

b) In most countries the majority of the focus group participants have a limited knowledge of animal farming practices, but associate negative welfare with industrial-intensive methods of production (factory farming), large scale of production (mass production) and positive welfare with small scale production and extensive production (free range, typical). 'Organic' is unanimously perceived as the most welfare friendly system of production across the seven study countries.
c) Product labels and brands are considered useful sources of information for assessing the animal friendliness of products but their importance varies across countries, consistently with availability: most important in the UK, Sweden and the Netherlands, least important in Norway and Hungary. In Italy and France brands are considered important for assessing the welfare friendliness of products even though in most brands there is little of no explicit reference to animal welfare.

d) In general participants in the focus group discussions reacted favourably to the 'experts' list of areas of concerns' for a monitoring scheme and showed a positive attitude towards science in general. Most participants identified more commonalities than differences between their understanding and a scientific approach to what is important in defining the welfare of animals.

However, a closer analysis of the spontaneous concerns versus the 'expert list' shows a few relevant differences, and here we will point only to the following: For most consumers across the study countries '*outdoor accesses' and 'small scale production'* are considered particularly relevant conditions for ensuring the welfare of farm animals, whilst in the 'expert list' these two aspect are considered 'research questions'.

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Table 4: Ten areas of welfare concern as formulated by Welfare Quality scientists

1. Hunger, thirst or malnutrition This occurs when animals are denied a sufficient and appropriate diet or a sufficient and accessible water supply and can lead to dehydration, poor body condition and death.
2. Physical comfort and security Animals can become uncomfortable and have problems lying down, getting up and standing. This can occur when they are kept in inappropriately designed housing (e.g. insufficient space, poor ventilation, unsuitable flooring and bedding) or when they are transported in poorly designed or poorly ventilated vehicles.
3. Health: injuries Animals can suffer physical injuries, such as mutilations, broken bones, bruises or skin lesions, due to factors such as; uneven or slippery flooring, enclosures with sharp edges and environments that promote aggressive behaviours between animals.
4. Health: disease Animals can suffer a range of diseases (e.g. mastitis and metabolic disorders in cattle). Poor hygiene, irregular monitoring and insufficient treatment speeds can amplify these problems.
5. Pain (not related to injuries or disease) In addition to suffering pain from injuries and disease, animals can experience intense or prolonged pain due to inappropriate management, handling, slaughter, or surgical procedures (e.g. castration, dehorning) and as a result of intense aggressive encounters.
6. Normal/natural social behaviours Animals can be denied the opportunity to express natural, non-harmful, social behaviours, such as grooming each other and huddling for warmth. Separating females from their offspring and preventing sexual behaviour can bring about specific examples of this problem.
7. Normal/natural other behaviours Animals can be denied the possibility of expressing other intuitively desirable natural behaviours, such as exploration and play. The denial of these possibilities might lead to abnormal and/or harmful behaviours such as tongue rolling in cattle and feather pecking in chickens.
8. Human-animal relationship Poor relationships can be reflected in increased avoidance distances and fearful or aggressive animal behaviours. This can occur due to inappropriate handling techniques (e.g. slapping, kicking and the use of electric prods), or when farmers, animal transporters or slaughterhouse staff are either insufficiently skilled or possess unfavourable attitudes towards animals.
9. Negative emotions (apart from pain) Animals can experience emotions such as fear, distress, frustration or apathy, when they are kept in inappropriate physical or social environments (e.g. where there is over mixing, or not enough space to avoid an aggressive partner). These emotions can be reflected in behaviours such as panic, flight, social withdrawal and aggression and in certain vocalisations and behavioural disorders.
10. Positive emotions Poor management routines and a lack of environmental stimulation may prevent animals from expressing positive emotions. Positive emotions are difficult to assess but may be reflected in certain behaviours, such as play (especially in young animals) and by certain vocalizations.

Table 5: Parameters relating to each concern

SPECIFIC PARAMETERS RELATING TO EACH CONCERN

In order to assess each of the ten broad concerns, scientists working on the project are in the process of identifying and measuring a series of welfare parameters. The table below provides a small illustrative selection of the parameters that researchers intend to use as a starting point for assessing the welfare of cattle. Over the course of the next five years researchers will develop and test a variety of different measures that relate to each of these parameters. Only measures that are deemed to be valid, reliable, repeatable and feasible to collect will be included in the final welfare assessment scheme.

Areas of Concern	Animal Based Parameters (Cattle)	Resource and Management Based Parameters (General)
Hunger, thirst or malnutrition	Body condition & dehydration Mortality	Provision of food and water on farm, during transport and prior to slaughter Management strategies
Physical comfort and security	Difficulties rising or lying Slipping and falling (on farm and during loading) Cleanliness of animal Panting after stress or effort	Housing design (e.g. space, flooring, bedding and litter) Air quality Duration of transport Method of slaughter
Health: injuries	Injuries on farm/at slaughter Fresh blood on floor Mortality and life expectancy	Handling strategies Log book of injured and culled animals Treatment procedures
Health: disease	Mortality and life expectancy Occurrence of disease Carcass damage	Log book of diseases, treatments and culls Identification and treatment
Pain	Lameness Routine mutilations (e.g. dehorning) Effectiveness of stunning Meat quality at slaughter	Presence of sharp edges Use of electric prod Stunning method
Normal/natural social behaviours	Frequency of allo-grooming (grooming each other) Occurrence of other natural social behaviours.	Grouping and regrouping of animals Physical contact with members of the same species
Normal/natural other behaviours	Abnormal behaviours (e.g. tongue-rolling) would receive a negative score	Presence of resources thought to be important
Human-animal relationship	Avoidance distance Fear Aggression	Attitudes and skills of farmers, drivers and slaughterhouse staff
Negative emotions	Fear (freezing, running away) Vocalization (on farm and at slaughter) Qualitative assessment	Stunning method
Positive emotions	Play (in young) Qualitative assessment	Environmental enrichment

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Animal friendliness and food consumption practices. Preliminary results from population surveys in 7 countries

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Introduction

Welfare Quality has carried out representative population surveys in seven countries. We have assessed the extent of social engagement in farm animal welfare issues and how this engagement is reflected in everyday consumption practices across Europe. In the following paper, we present some preliminary results about variations in animal welfare concerns between seven countries. Four major issues are emphasised:

1. Across Europe, a large majority say that farm animal welfare is important. They are not necessarily worried, and many are optimistic about recent trends. Transport causes most worry.
2. Much smaller proportions associate animal welfare concerns and worries with their own purchasing practices. Still, quite a few do think about such issues when shopping for food. The relatively high numbers indicate a much wider understanding of animal friendliness than products that are labelled as particularly animal friendly.
3. Experts and NGOs are most trusted for telling the truth in case of an animal welfare scandal, public authorities are in the middle, while market actors and politicians are least trusted.
4. Countries differ. Italian and French respondents are quite worried about welfare conditions in their own country, concerns are often associated with food purchasing, and trust is relatively low. Hungarians worry and they are also more pessimistic, but animal welfare is of less relevance when shopping. The Dutch display lower interest, but many worry. Many do think of welfare conditions when shopping for eggs and beef. Trust is high. The British are quite similar, but trust is much lower. Finally, the Swedes and the Norwegians are engaged; they are trusting and not worried. Particularly in Norway, animal welfare is rarely associated with the consumer role.

The survey includes data from seven countries of Europe; Hungary (HU), Italy (IT), France (FR), Great Britain (GB), The Netherlands (NL), Norway (NO) and Sweden (SE). Data was collected through a CATI survey, conducted by TNS Global. The data was collected in the period from 12th to 27th of September 2005.[4]

People are engaged, but not necessarily worried

When asked how they assess the importance of animal welfare issues in general, a majority of the respondents claim that this issue *is* important (figure 1). Proportions answering '*very important*' range from 35 per cent to 77 per cent between the 7 countries, placing the Netherlands at the bottom and Italy at the top. Few state that animal welfare issues are of little or no importance.

[4] The survey is based on probability samples, 1500 in each country. They are weighted by age, region, gender and household size per country. The questionnaire was developed through a thorough process of communication between research teams in all study countries. Prior to running the survey, the questionnaire was piloted in all seven study countries, and adjustments made in line with feedback (focus on time efficiency, validity, question formulations and translations). The questionnaire contained only pre-coded questions. Analyses presented in this paper are primarily based on frequency distributions compared between countries.

Placing 'importance' values on an issue does not necessarily mean that people are concerned and worried. That will depend upon how they consider the actual welfare conditions. In order to grasp consumer worries related to specific farm animal species, the respondents were asked to evaluate the living conditions of pigs, chickens and dairy cows in their own country. *Overall, the conditions for chicken are met with most worry* (table 1). With the exception of Hungary, 40-57 per cent of the respondents see conditions in chicken production as poor or very poor. Regarding pigs, few respondents in Norway and Sweden assess the situation as poor or very poor, while more than 40 per cent say the same in France and the Netherlands. Few utter worries about dairy cows. Considering all three animal types together, we see Norway, Sweden and Hungary clustering at the bottom regarding worries about the farm animals' living conditions, with much more widespread worries in Great Britain, Italy, The Netherlands and France. *In most countries, we find that a majority is worried about methods of transportation as well as for slaughtering* (table 1). The exceptions are Norway and Sweden, where the ratings are much lower. The Italians and the Hungarians consider transportation and slaughtering methods, to be the worst. In all countries, farm animal transportation are considered to be worse concerns than the methods used at the abattoir.

While the French and the Dutch consider animal welfare in general to be of least importance to them personally, compared to respondents in the other countries, they appear at the same time as the most worried over farm animals living conditions in their own countries. The opposite effect occurs when Norwegians, Swedes and Hungarians claim animal welfare in general to be an issue of great personal importance – but, at the same time, seem to be the least worried about farm animal living conditions in their countries. *The British and the Italians consider animal welfare in general to be an important issue and they worry about farm animals living conditions.*

Overall, a majority of the respondents believe that farm animal welfare has improved over the last ten years in their own country (figure 2). The only exception is Hungary. At the other end of the scale, very few in France think that conditions have deteriorated, while one fifth of the Hungarian respondents think the same.

The number of respondents answering "*don't know*" is fairly high for all the specific questions about living conditions for farm animals. In particular, Hungarians and Italians are not only sceptical about farm animals' living conditions; they also have very high proportions of "*don't know*" answers. For example, in the case of slaughtering methods 28 per cent of the Hungarians and 26 per cent of the Italians don't know about the methods used in their own country. *These high levels of respondents not answering or answering "don't know" indicate that people have great difficulties assessing the welfare status of farm animals*.

Country variations in considerations of animal friendliness when purchasing food
People's engagement in animal welfare issues may appear in many different forms and arenas, and buying welfare friendly products is one way. When asked if animal welfare is considered when buying beef, more than half of the Italians and the Swedes use the two most positive values of a five point scale (4 and 5) (figure 3). The Dutch and the Norwegians proportions are lowest. When comparing these results to general concerns for animal welfare, we see that general interest is not necessarily reflected in concerns when shopping. This is most evident among Norwegians, where 84 per cent see animal welfare as generally important, while only 26 per cent think of animal welfare when buying meat.

Still, farm animal welfare appears as quite important even within the context of shopping. There is even higher engagement when specifically asking about eggs and beef.

To many people, better animal friendliness will be seen as one aspect of organic production. Importance placed on organic production of eggs varies from 12 per cent of "*very important*" answers in Norway to 45 per cent in Italy. Italy, France, Hungary, and the Netherlands cluster as most interested in the eggs being organic, while Sweden and Great Britain forms a middle group. Large proportions say that when buying beef, they give emphasis to animal welfare factors such as treatment of the animal, slaughtering methods and outdoor access. *Treatment of the animal is generally considered the most important factor*, with the average proportion being 66 per cent (table 2).

Availability is a bigger problem than price

Purchasing routines will be influenced by practical considerations and possibilities. The respondents were asked whether they agreed or disagreed that welfare friendly products are too time consuming or hard to find. The two statements could be understood as different ways of saying how easily the products are accessed. Quite similar patterns are revealed for both statements, where availability seems to be a limiting factor for considerable proportions of the respondents in all seven countries (table 3). Hungarians score the highest on both statements, strongly agreeing that it is too time consuming and hard to find welfare friendly products. At the other end of the scale, the Dutch are much less inclined to worry about availability. All other countries hold proportions between 40 and 50 per cent.

Compared to availability, price is considered less important when buying eggs and beef (table 2). When comparing the proportions of "*very important*" answers regarding price, we find Hungary on top regarding the price of beef and France on top regarding the price of eggs. We find Sweden at the bottom end for both questions, in the close company of Norway. Country variations may at least partly be a reflection of different levels of income.

Trust in public actors, less in private

Trust, and distrust, in different organisations and institutions influencing food and animal welfare was assessed with a battery of questions about whether ten different actors would tell the whole truth, only tell parts of the truth, or give misleading information in the case of an animal welfare scandal. Two main points come out of this (table 4). *First*, overall, the proportions saying that actors in the food system would tell the whole truth vary considerably between countries.

The Hungarians and the Dutch seem generally to be the most trusting, while the British, the Italians and the French display the lowest levels of trust in truth-telling in the case of animal welfare. The British (and the Swedes) seem to be the most selective, with higher trust in some actors, lower trust in other actors.

Second, in all countries there is a clear differentiation between the various types of actors. *Civil society actors (food experts, consumer organisations, animal protectionists, mass media) generally receive most trust in this case of truth-telling*. Food authorities are ranked in the middle, quite often believed to tell only parts of the truth, but rarely to give misleading information. EU institutions are generally less trusted than national ones. Market actors (retailers, the processing industry, farmers) are much more rarely believed to tell the whole truth and often to give misleading information. Politicians rank lowest. There is, however, some variation in the trust that is placed in the various types of actors.

The Netherlands, Hungary and Norway clearly have higher levels of trust in civil society actors telling the whole truth. The British have the lowest score. The same formation of confident countries is evident regarding trust in authorities. The Hungarians score the highest on trust in authorities as truth-tellers, while the British again have the lowest score. When it comes to trust in market actors as truth-tellers, the Swedish rank highest, while Italians are at the bottom.

Concluding remarks

These preliminary analyses indicate some common features in public opinion about farm animal welfare across Europe, but there are also interesting national differences. These similarities and differences will be explored further in later analyses, where other survey questions, as well as data from other parts of the Welfare Quality project will be employed.

Farm animal welfare is clearly an important issue for ordinary people across Europe. But emphasis and worry is not the same. A majority are actually quite optimistic regarding recent trends. Worries are unevenly distributed across the seven countries, together with varying proportions of the population who are unable to assess the situation, and say they don't know. National contexts may influence people's specific experiences, general evaluations of performance, as well as media attention. But worries may also reflect an underlying uncertainty and scepticism towards the handling of farm animals in contemporary food provisioning systems.

Though more limited, many Europeans also think about animal friendliness when shopping for food. Variations in the association between concern and involvement as consumers indicate that taking on responsibilities does not necessarily depend on individuals' interests and their ethical considerations. The distribution of responsibilities between consumers, the various market actors, and the state, can be very variable from one country to the next. Taking on responsibility as consumers must be associated with the possibilities they find in the food market to act. Availability and sufficient, reliable information, to some degree even affordable prices, are therefore crucial. Factors in choice. Moreover, making responsible purchases will depend on what people mean by animal friendliness. The emphasis given to animal friendliness when shopping for eggs and beef are much higher than the market shares for labelled products. *It is probable that people's understanding of animal friendly food items is much wider than referring to items that are labelled as particularly animal friendly.*

People's engagement is also a matter of trust in those who provide, and control, the food and information sources.

The widespread belief that food providers will not tell the whole truth and that many of them will give misleading information, probably expresses a general expectation that such actors will act strategically to protect business interests in case of a scandal. *Thus, independent monitoring and information seems crucial*. To the degree that food authorities take this third party role, which they often do, trustworthiness will therefore depend on their ability to demonstrate independence, through transparency, use of independent expertise, etc. At the moment, people's assessment of their ability to do so varies considerably across Europe.

Appendix

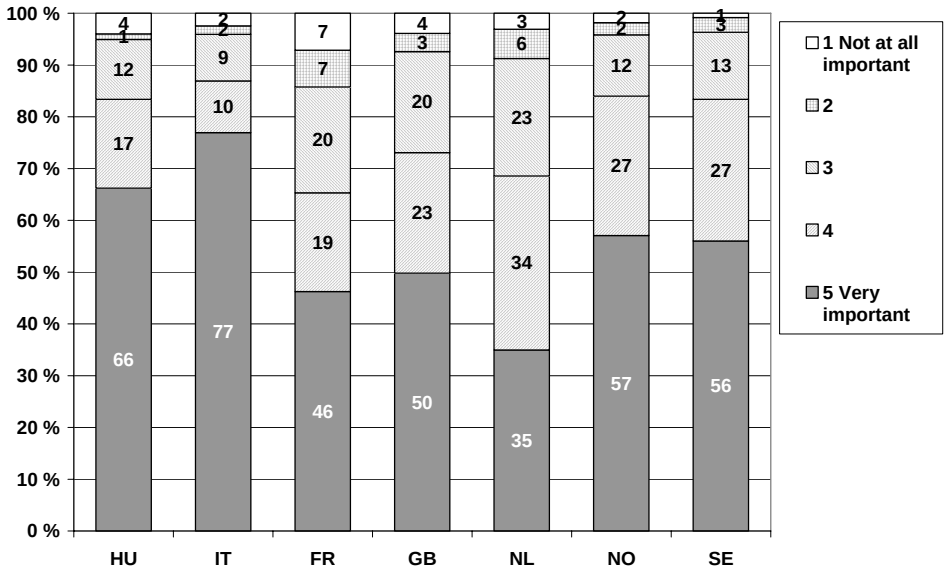

Figure 1: Thinking of farm animal welfare in general, how important is this issue for you on a scale of 1-5, were 1 is not at all important and 5 is very important?[5]

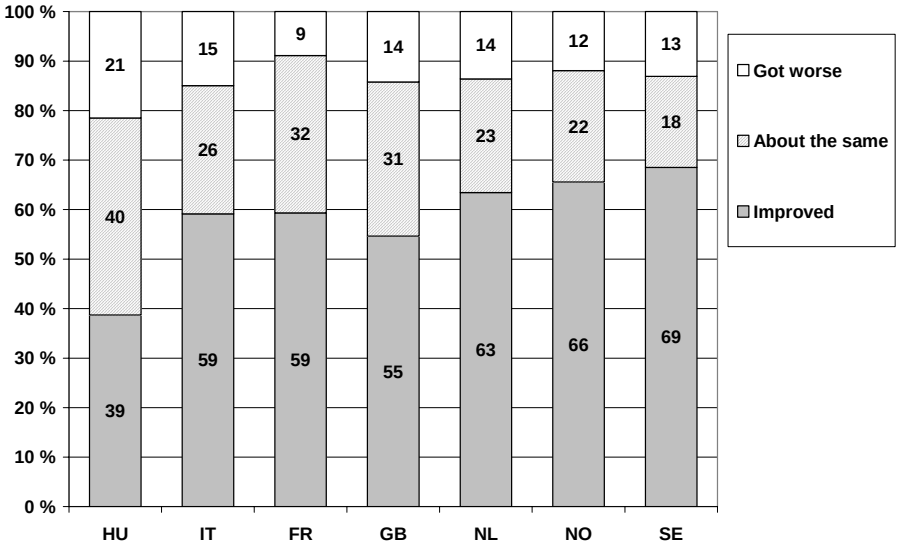

Figure 2: In general, over the past 10 years, do you think that farm animal welfare in {COUNTRY} has improved, is about the same or has got worse?[6]

[5] Weighted. Don't know excluded. (N = HU: 1462, IT: 1478, FR: 1497, GB: 1490, NL: 1489, NO: 1493, SE: 1496)
[6] Weighted. Don't know excluded (N = HU: 1310, IT: 1365, FR: 1483, GB: 1384, NL: 1434, NO: 1463, SE: 1393)

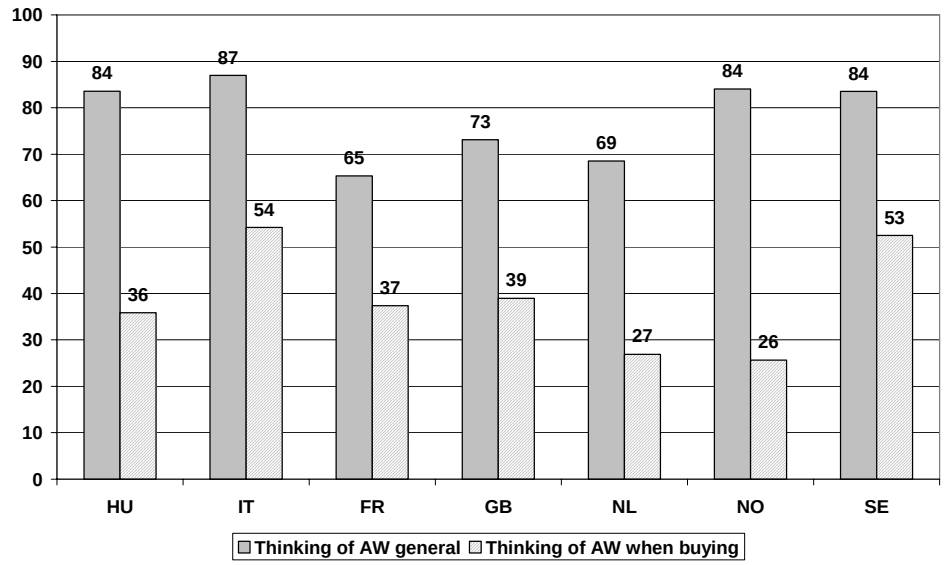

Figure 3: Thinking of animal welfare in general[7](among all), Thinking of Animal welfare when buying (among those who have bought meat)[8]. Per cent proportion 4+5 on a scale from 1-5

Table 1: Worry about welfare for pigs, chickens, dairy cows[9], transport[10], slaughters[11].Per cent proportion 1+2 (1=very poor)

	HU	IT	FR	GB	NL	NO	SE
Pigs	22	32	42	21	44	12	14
Chicken	29	50	57	56	49	46	40
Dairy Cows	15	15	15	12	10	3	5
Transport	60	65	52	48	56	34	34
Slaughters	58	56	44	42	47	25	23

[7] Thinking of farm animal welfare *in general*, how important is this issue for you on a scale of 1-5, where1 is not at all important and 5 is very important? Weighted. Don't know excluded (N = HU: 1462, IT: 1478, FR: 1497, GB: 1490, NL: 1489, NO: 1493, SE: 1496)

[8] When you purchase meat or meat products, how often do you think about the welfare of the animals from which the meat has come, on a scale of 1-5 where 1 is never and 5 is always? (Among those who have bought meat). Weighted. Don't know excluded (N = HU: 1249, IT: 1173, FR: 1337, GB: 1330, NL: 1248, NO: 1364, SE: 1334)

[9] In your opinion, how well do you think the welfare conditions are for the following farm animals in {COUNTRY}, on a scale of 1-5, where 1 is very poor and 5 is very good? Pigs/Chickens/Dairy cows. Weighted. N=1500 in each country, Don't know excluded.

[10] And, what about the methods used to transport animals in {COUNTRY}, using the same one-to-five scale, where 1 is very poor and 5 is very good? Weighted. N=1500 in each country, Don't know excluded

[11] And, in your opinion, how well do you think the animals are treated at the slaughters in {COUNTRY} on a scale of 1-5, where 1 is very poor and 5 is very well? Weighted. N=1500 in each country, Don't know excluded

Table 2: Are the following factors very important?[12] Per cent proportion "Very important". Among those who have bought eggs and or beef.

		HU	IT	FR	GB	NL	NO	SE
Price	Eggs: Price	31	26	33	20	22	13	10
	Beef: Price	38	17	24	19	23	17	13
Eggs: Animal welfare of hens	Eggs: Organic	39	45	40	23	35	12	25
	Eggs: Treatment of the hens	58	77	73	64	62	41	59
Beef: Animal welfare	Beef: Treatment of the animal	61	79	64	69	67	48	71
	Beef: Slaughtering methods	47	62	52	59	52	39	51
	Beef: Raised outdoors for part of the year	59	78	65	57	66	48	47

Table 3: It is too time consuming to look for welfare friendly products; I cannot find welfare friendly products when shopping. Per cent proportion 4+ 5 (5=strongly agree)[13]

	HU	IT	FR	GB	NL	NO	SE
Too time consuming	53	51	41	36	35	48	44
Cannot find animal welfare products	61	42	38	36	23	32	35

[12] "Continuing with eggs, are the following factors very important, fairly important or not important at all?" A. Low price. B. Organic. C. Treatment of the hens And "Now thinking especially of beef, are the following factors very important, fairly important or not important to you?" A. Low price. B. Treatment of the animal. C. Slaughtering methods. D. Raised outdoors for part of the year
Weighted. N=1500 in each country, Don't know excluded

[13] To what extent do you agree or disagree with the following statements on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree? You may choose any number from 1 to 5.
- "I care bout animal welfare, but it's too time consuming to look for welfare friendly products"
- "I care about animal welfare but cannot find welfare friendly products where I shop for food"

Weighted. 1500 in each country. Don't know excluded

Table 4: Truth-telling in case of a scandal with animal welfare. Per cent proportion "the whole truth"[14]

"The whole truth"		HU	IT	FR	GB	NL	NO	SE
Civil Society	Mass media	18	13	11	14	21	27	27
	Consumer org	49	50	53	59	63	58	52
	Animal protectionists	66	55	54	30	54	52	35
	Food experts	62	48	42	44	71	56	48
Public authorities	Politicians	6	3	2	3	8	7	5
	Food authorities	53	34	27	35	57	60	46
	EU	36	21	9	12	18	10	9
Market actors	Food processing	11	6	5	8	7	6	10
	Food retailers	7	6	10	10	13	7	10
	Farmers	24	9	15	24	27	19	24

[14] Imaging a scandal concerning the welfare of chickens in {COUNTRY}. Do you think that each of the following would tell you the whole truth, only tell you part of the truth or would give misleading information?
(Options to be rotated): A. Press, television and radio. B. The food processing industry. C. Food retailers. D. Farmers or farmers groups. E. Consumer organisations/watchdogs. F. Animal protectionists. G. Politicians. H. Public food authorities. I. Independent food experts (e.g. academics). J. The EU. Weighted. 1500 each country, Don't know excluded

The retail of welfare-friendly products: A comparative assessment of the nature of the market for welfare friendly products in six European countries.

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Introduction

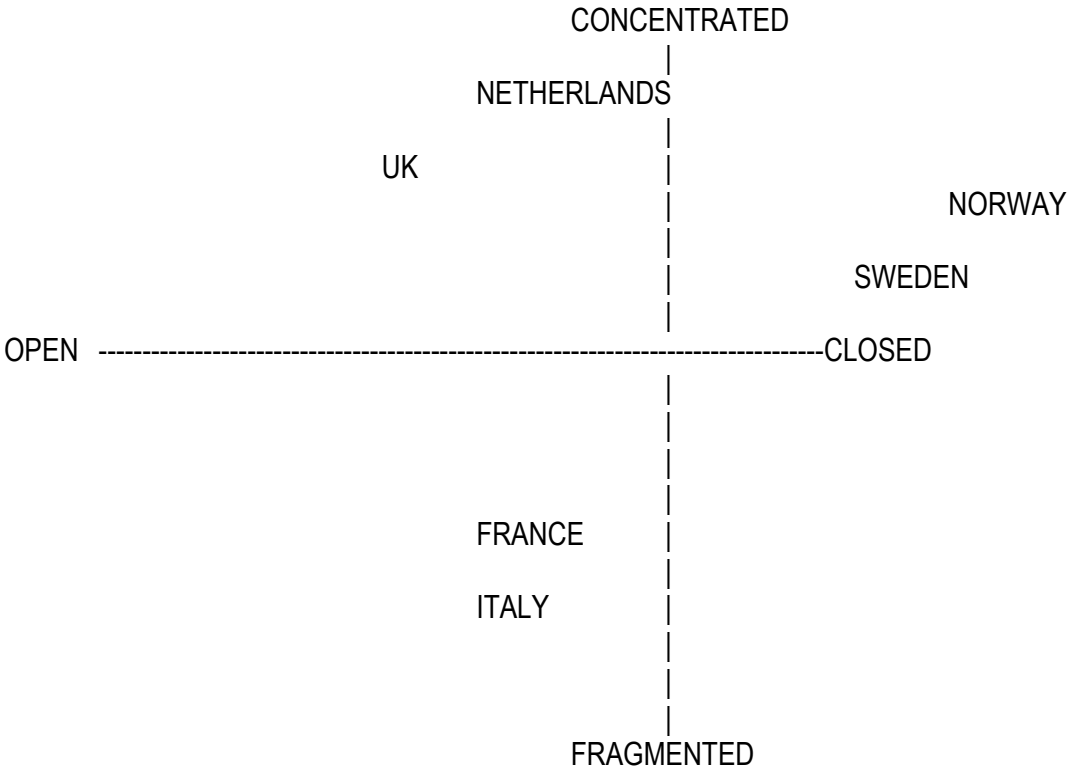
This paper attempts to describe the market for welfare-friendly foodstuffs within larger retailing trends in six study countries in Europe (Norway, Sweden, Italy, France, the Netherlands and the UK). This is based on the findings to date from the work carried out by the work package 1.2 whose aims are to study the current and potential market for welfare-friendly foodstuffs. The aims of the current empirical stages of work package 1.2 are focussed on – what do retailers communicate to consumers about animal welfare? How is animal welfare framed? Are welfare-claims used on their own or within broader issues of quality? The following three phases of the current research project will briefly be discussed in this paper.

1. Review of secondary data sources to build up a picture of retailing trends and the market structure for the 5 product categories (dairy, beef, pork, poultry, eggs) across the six study countries.
2. A 'retail audit' of products provides an illustration of the diversity of products carrying 'animal welfare claims' existing in the market. Alternative marketing strategies of welfare-friendliness, such as corporate ethical promotion often not communicated on individual products labels, have therefore not been studied and are not included in this 'audit'. These will be studied in following research phases which focus on the retailers. It is important to note that there is no common definition of animal welfare and there are different conventions for communicating animal welfare. The findings from the 'retail audit' are suggestive of the explicit visibility of welfare-claims on products instore.
3. An interview-based study of 'non-retailer led labelling schemes'. Non-retailer led labelling schemes are those assurance schemes which both communicate directly to consumers in the form of a logo/label on packaging and which are the initiative of non-retailing bodies e.g. NGOs, Producers, Manufacturers.

Comparative retailing trends and market structure.

Generally, market concentration is increasing across Europe, with fewer and fewer retail companies dominating national markets. Yet, the nature of concentration varies from country to country (See figure 1).

Figure 1: Mapping retail structures according to four criteria.
Source: Murdoch, J. August 2004.



A 'concentrated' market has few market actors; in the countries discussed this can be for differing reasons. It may be 'concentrated' as a result of the process of mergers and acquisitions, or be 'concentrated' because strong producer cooperatives are controlling the supply of food to manufacturers and retailers, and in addition national regulation is reducing the flow of imported goods into the country.
A 'fragmented' market has a large number of market actors, with weak integration in the vertical supply structure. National legislation may have protected small businesses from competition from large organisations and regional/local identities significantly shape consumer purchase habits.
A 'closed' market typically has national regulation that is restricting the flow of imported goods, or alternatively a consumer purchasing culture that actively seeks out own-country products.
An 'open' market has no regulation that restricts imported goods from being sold in the country.

- the Netherlands and the UK best illustrate the process of 'retail concentration' with 3 or 4 large retailers accounting for 70% of the total food sales. These retailers also use their buying power to source products from a number of diverse locations so these national retail contexts are not only concentrated but internationalised too.
- In Norway, we see a high level of retail concentration but here the major retailers are forced to source products from *within* the Norwegian agricultural system. Thus powerful farmer cooperatives and wholesalers confront Norwegian retailers. Retail *concentration* does not translate into retail *power*.
- In Sweden, the nature of concentration is complicated by the federal structure of the main retail chains so that some considerable autonomy still lies at the individual store level.

While the trend to greater centralisation seems now to be set, this is likely to unfold in an uneven fashion across the sector. As in Norway, the Swedish market remains relatively closed despite the country's recent entrance to the EU. Sweden appears to be in the process of acquiring a more concentrated and open retail system.

- France and Italy have many of the same centralisation and concentration trends. Both countries retain a more traditional retail structure – which has been safeguarded to some extent by the state – and this structure still holds an important place in the overall retail structure. However, large retail chains are beginning to take over the bulk of the market (though this varies between sectors), with the consequence that further rounds of centralisation and concentration looks inevitable. Both France and Italy retain nationally specific retail structures that reflect, to some extent, the distinctive consumption demands of consumers in those countries. It is thus possible to discern some degree of market closure associated with a consumer culture that is rooted in regional and local culinary traditions.

2. Comparative analysis of animal welfare claims

In order to assess the presence of welfare-claims in the food market within the differing national contexts a 'retail audit' was undertaken. This audit sought to identify as broad range as possible of products and labels, as possible, in order to comparatively analyse the marketing of welfare claims on product packaging. To identify what was a welfare claim we took a very broad, inclusive and context dependent perspective, that reflects how consumers perceive the claims made on product packaging that suggest better animal welfare, rather than a precise, technical definition of better animal welfare. The reasons of this was that currently no clear objective technical definition of animal welfare exists and, rather than artificially creating one the research aimed at capturing as much variation in animal welfare claims as possible in each partner country. For example, in Italy a packaging claim that the product is GMO free is perceived as a welfare-claim because as Miele and Evans (2005)[15] argue animal integrity is a concern for consumers expressed in worries about genetically modified animals and foodstuffs. Products that appear in the audit can be broadly broken down into the three brand typologies based upon where they originate – producer, manufacturer or retailer (see table 1).

- UK. Retail market increasingly dominated by retailer brands. A few specialist producer brands and a growing number of manufacturers' brands.
- France. Retail market characterised by a growing number of retail brands but still dominant presence of manufacturers brands. Producer brands also strong.
- Italy. Manufacturers brands dominate with a growing number of retailer brands.
- The Netherlands. Manufacturers brands still dominate but growing number of retailer and producer brands visible in retail outlets
- Sweden. Producer brands dominate, growing presence of retailer and manufactured brands.
- Norway. Strong presence of producer and manufacturer brands. Very weak presence of retailer brands.

[15] Miele, M. and Evans, A. 2005, European consumer's views about farm animal welfare. *Science and Society improving animal welfare*. WelfareQuality conference proceedings. 17/18 November 2005, Brussels

Table 1: A comparative overview of the make-up of the market for welfare-friendly products in each country relating to the type of brand [16]

Originator of Brand / Country	Producer brand		Retailer brand		Manufacturer brand		Total
	No. of products	% of products	No. of products	% of products	No. of products	% of products	No. of Products
FRANCE	43	22	62	31	93	47	198
UK	12	10	53	44	56	46	121
NORWAY	47	42	2	2	64	57	113
SWEDEN	42	58	9	12	17	24	68
ITALY	0	0	33	40	50	60	83
THE NETHERLANDS	85	30	57	21	138	49	280

Data collected November 2004

- Within retail stores across all six countries there is wide variation in the degree to which animal welfare is marketed explicitly or implicitly.
- Brand segmentation of retailer own-brand products is arguably increasing the number of products that carry welfare-friendly claims. For example in UK, Italy, France and the Netherlands.
- In many cases animal welfare is part of an organic own-brand product range since animal welfare results from some of the components of organic production schemes.
- Currently, there is no explicit segment of a retailers branding strategy that is focused on animal welfare, but there are retailers, for example, the UK (Marks&Spencers) and Sweden (Coop) who make welfare-specific claims about what is in the store and what is not. For M&S it is that no battery eggs are used in the production of all products (they only sell own-branded products) and for Coop in Sweden they don't sell Goose-Liver, Light calf's veal or Belgium Blue meat.
- The type of products that get labelled welfare-friendly are often un-processed goods like fresh meat products. The manufactured products that often carry labels are milk, cheese and bacon, therefore, there is a significant presence in all countries of manufactured goods.
- Retailers privilege or adopt 'free-range' labelling more specifically for chickens and hens, than other animal species. The term 'free-range' is popularly used to talk about chickens and hens and in some countries (Norway, Sweden and UK) this term is being also applied to some pork products. Beef and milk products, with the exception of organic ranges, rarely carry any welfare-friendly product description.

[16] It is important to note that this study provides only an illustration of the diversity of products that carry welfare-claims. It does not claim to be completely comprehensive. Therefore, unlabelled welfare-friendly initiatives are not included in the particular sampling strategy. For example, Coop Italia sell pork products which are produced at a non-intensive farming level, but this is not labelled on the product but instead is advertised through in-store advertising.

Broadly there are four categories of welfare marketing, specific to products instore that carry animal welfare claims on packaging, in which retailers can be placed. Where are the highest number of products labelled as organic? Where is the lowest number of welfare-friendly labelled products? (See table 2).

Table 2. Four categories of welfare marketing characteristics, specific to products instore that carry animal welfare claims on packaging, for different retailers in different countries.

Type of Claim / Country	Organic, less explicit welfare.	Welfare focused	Quality and welfare	Rare to find welfare or none.
UK	Organic Supermarket, Independents.	Marks & Spencers, Waitrose, Sainsbury, Fresh 'n' Wild,	Tesco, Somerfield, Morrisons,	Coop[17], Asda, Farmer's market, Lidl
Italy	Natura Si	Esselunga, Coop, Conad,	Despar, Proda, Sigma, Standa, GS-Carrefour	Lidl
French	Rayon Vert		Carrefour, Auchan, Casino, System U, Monopix, Leclerc, intermarche	Lidl, Ed
Sweden		Hemkop, ICA Malmsborgs, ICA, Coop Forum/Hypermarket, Coop Konsum/convenience store	Citygross/Hypermarket, Maxi ICA/Hypermarket, AGS/Supermarket,	Axford,
The Netherlands	Natuurwinkel (The NatureShop)	Albert Heijn, Konmar, PLUS, Super de Boer	C1000, Edah	Aldi, Lidl
Norway	Helios		Ultra, Centra, Meny, ICA Maxi, ICA supermarket, Coop Obs, Coop Prix	Rimi, REMA1000

Data collected November 2004

There is a large amount of meat and dairy products that is produced to higher animal welfare levels than EU minimum standards but which are not labelled as such. This table indicates which retailers carry products that use animal welfare as an explicit marketing strategy on the product's packaging. We are not arguing here that some retailers have more welfare-friendly food products than others, because there are alternative marketing strategies which have not been covered in this research phase. Instead we are drawing attention to the scale and style of visible welfare-claims on product packaging within different retail outlets.

[17] Despite Coop UK taking a lead in selling Freedom Food assured food, a remarkably small number of these products were found in two stores visited in both Cardiff and Bristol.

Welfare-bundling on packaging.

The welfare-friendly food market across the six countries appears very diverse and confusing with lots of different approaches taken by the retailers/manufacturers/producers. There is a range of products across the six countries that make welfare-claims, but there is little consistent information about what these mean comparatively in terms of the level of improvement in an animal's life.

Products are packaged and marketed very differently. Some have just a single statement for example 'If animal welfare is important' by the Norwegian producer cooperative Nordgarden. Others make statements related to how the animal has lived, for example 'From free-range indoor hens'. Whereas others bundle animal welfare or animal well-being in with a number of other attractive product attributes including animal health, ecological embeddedness, sociological embeddedness, human health and quality/taste. Below is an example that includes all these attributes.

> "The Devonshire Red™ is a slow growing chicken that has been specially selected for our West Country Free Range Chicken. They are reared using traditional farming methods on small West Country, family run farms. They have access to tree-planted fields, which encourages them to roam and show natural foraging behavior such as scratching, preening and dust bathing. This allows the chicken to live a fuller, more active and enriched life. The combination of the traditional breed, West Country Free Range farming methods and their natural diet produces tasty, succulent meat rich in flavour". Sainsbury's Taste the Difference Fresh West Country free range boneless chicken breasts (UK).

In comparison a Swedish Kronfågel chicken product just carries the words 'Swedish chicken'. This conveys a welfare-claim because Swedes know that Swedish animal welfare regulation is higher so implicitly this product has good animal welfare. This difference between the two labelling strategies illustrates one of the key differences in the market for welfare-friendly food products that is a result of different institutional and cultural settings. The high national standards for animal welfare in Sweden have led to animal welfare becoming not just a non-competitive issue but also a non-issue in Sweden. Therefore few products carry welfare-claims. In contrast in the UK animal welfare is a competitive issue both between retailers and between products on the shelf. Product-tiering and brand segmentation has led to welfare-claims being actively used to create a range of products marketed at different quality levels on own-brand products and independent brands.

3. Comparative analysis of non-retailer led schemes

An intervew-based study of 'non-retailer led labelling schemes' was carried out in the six study countries. Non-retailer led labelling schemes are those assurance schemes which both communicate directly to consumers in the form of a logo/label on packaging and which are the initiative of non-retailing bodies e.g. NGOs, Producers, Manufacturers. The aims of this study were firstly, to understand which institutions are powerful market actors in communicating animal welfare-claims to consumers across the study countries? Secondly, how have the schemes developed? Thirdly, how significant are these schemes to the existence of a market for welfare-friendly food products?

- The industrial sector in all countries is responsible for most of the non-retailer led schemes. This is most striking in France and Italy where the fragmented nature of the market leads to a plethora of schemes.
- Organic schemes have a major role to play in the market for welfare-friendly products because organic products must legally state on the product which certification scheme that they belong to. Thus organic schemes are very visible in the market for welfare-friendly products.

-The bundling of welfare into quality reveals a number of quality labelling schemes to be significant within the market, particularly in France and Italy.
- NGOs are very involved in the promotion of welfare-claims in the UK and Netherlands.
- State-led schemes are only found in Sweden, Italy and Norway along with a number of producer and manufacturing schemes.

4. Conclusion

The study of the market structure across the six study countries has provided detailed understanding of the contrasting market and institutional dynamics which affects the development of a market for welfare-friendly food products. The first two empirical phases to the workpackage have started to illustrate the complexity of the welfare-friendly food market. Manufacturers are particularly powerful in the current market for communicating welfare-friendly foodstuff, but the influence of retailer own-brand products is growing, particularly within countries that have a concentrated supply structure and an open market. Non-retailer led labelling schemes support the communication of welfare-claims primarily through how welfare is bundled into claims about quality.
The next empirical phase will build on these initial findings through an interview-based study of retailers and other supply-chain actors for welfare-friendly food products across the five product categories. The aims of this phase are to understand how products that communicate welfare-claims reach the shop-shelf through investigating the post-farm-gate production, manufacture and marketing.

Welfare Quality
Science and society improving animal welfare

Farmers' engagement in animal welfare, the case of pig producers

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Subproject 1 investigates the attitudes and practices of consumers, retailers and producers concerning animal welfare and assesses to what extent new welfare strategies may be acceptable among them, and achievable in practice. This paper reports on work-package 1.3 that deals with the perspective of producers or farmers engaged in livestock production. It aims at understanding the farmers' motivation to engage in animal friendly production, as well as identifying incentives and barriers to the development of animal friendly products and the adoption of more rigorous animal welfare standards. It integrates four sub-projects. The first is a review of socio-political and market developments of animal welfare schemes in the six participating countries (France, Italy, The Netherlands, Norway, Sweden, United Kingdom). It evaluates the status of national legislation of animal welfare and identifies relevant animal welfare production schemes. The following three subprojects are case-studies looking into the situation in pig production, cattle production and poultry production. In each sector two groups of farmers are contacted: (1) farmers who are engaged in animal welfare schemes and (2) farmers who are not yet or not anymore engaged in any of such schemes. Comparing the two groups of farmers enables us to identify incentives and barriers in the conversion to animal welfare schemes and to understand how conversion to more animal welfare production methods could be encouraged and supported by policy interventions.
The paper reports on the results of the review of socio-political and market developments and presents the first results of the study among pig farmers. The case-study among cattle farmers will start in November 2005; the poultry case-study is scheduled for summer 2006.

1. Review of socio-political and market development of animal welfare schemes

This subproject has three main objectives: the identification of animal welfare schemes, the evaluation of national animal welfare legislation and the assessment of current national social and political situation affecting the adoption of animal welfare schemes. The main results will be summarized along the lines of these objectives. But as will be demonstrated, it is also possible to group the six countries around those themes.

Thos subproject resulted in the identification and definition of three types of animal welfare schemes which are to a variable degree present in all six participating countries. They may be distinguished as follows.

Quality (farm) assurance schemes: basic and top level[18]:

Quality assurance schemes contain an animal welfare module but focus on other aspects, such as food safety, product quality and traceability. In basic quality assurance schemes animal welfare criteria follow only the basic legal requirements, whereas they surpass legal requirements at least to some extent in top quality assurance schemes.

[18] Examples: KSL (Norway), MHS (Sweden), IKB (Netherlands), BFS (UK), CCP (France), QC (Italy)

Specific animal welfare schemes[19]*:*
Specific animal welfare schemes aim to improve animal welfare. They considerably surpass national legislation and are generally also above the standards agreed upon in top quality schemes. Such schemes are practically absent in Sweden and Norway

Organic production schemes:[20]

These are the only schemes with common European standards. Animal welfare is included as part of the basic production philosophy, alongside environmental and human health, food safety and food quality. In most countries animal welfare requirements in organic regulations surpasses animal welfare legislation. This is, however, not the case in the UK.

All six participating countries are bound to the EU regulation of animal welfare but vary in the extent to which animal welfare is legally regulated. Sweden and Norway have advanced animal welfare legislation well beyond EU regulation. To a somewhat lower extent this is also true for the UK. Dutch legislation surpasses EU regulation in some aspects whereas French and Italian legislation equals EU regulation.

Comparing the level of legislation and the availability of animal welfare schemes shows that there is quite some variation in the way animal welfare is nationally institutionalized. The countries differ in the extent to which national animal welfare legislation surpasses EU legislation, and in the availability of animal welfare schemes. Taking both indicators into account, it is possible to distinguish between four groups of countries as follows: (1) rigorous legislation and many animal welfare schemes; (2) weak legislation and many animal welfare schemes; (3) rigorous legislation and few animal welfare schemes; (4) weak legislation and few animal welfare schemes.
The six participating countries fall into three major groups: Norway and Sweden with the most rigorous legislation but hardly any animal welfare schemes; secondly the United Kingdom with relatively rigorous legislation and many animal welfare schemes; thirdly The Netherlands, France and Italy with a relatively weak legislation and a number of animal welfare schemes. There appear to be no countries participating where the level of legislation is high as well as having a high availability of animal welfare schemes. Why this is the case is so far unknown. It may be that there is no need to regulate animal welfare by way of production schemes when a high level of animal friendliness is already legally prescribed, as seems to be the case in Sweden and Norway.

This explanation also fits to these countries specific socio-political setting of animal welfare. In Sweden and Norway citizens are concerned with animal welfare but generally consider it as a foreign problem. They are convinced that animal welfare is well taken care of in their country because of the robust legislation they as citizens 'fought for'. In both countries it also seems to be accepted by farmers and retailers that animal welfare is not an appropriate domain for market differentiation and competition. Animal welfare is an important subject of public debate in the United Kingdom and The Netherlands, partly as a result of recent animal epidemics. It is the second most important concern of Dutch consumers, following food safety, and there are many animal welfare action groups. In the United Kingdom, animal welfare action groups are possibly even more active than in the Netherlands, and their

[19] Examples: Freedom Food (UK), Scharrel (Netherlands), Thierry Schweitzer Pork (France), COOP (Italy)

[20] Examples: KRAV (Sweden), Debio (Norway), Soil Association (UK), Agriculture Biologique (France), SKAL (Netherlands), AIAB (Italy)

political influence proportionally more significant. In both countries animal welfare action groups participated in the start of specific animal welfare schemes, of which Freedom Food (UK) is the most important. In France and Italy citizens seem to be less concerned with animal welfare unless perceived in a combination with food quality and a critique of industrialized agriculture. Generally speaking the idea is that traditional agricultural systems allow for both better animal welfare, and higher food quality.

(B) The first results of the study among pig farmers

The EU Directive 2001/88/CE describes the minimum standards for pig production within the European Union. All farmers within the European Union must comply with these standards.[21] Some member-states have additional requirements, but generally speaking welfare requirements for pig production are remarkably equal across the six countries. Only Sweden and Norway clearly stands out for;

a) Substrate requirements (Sweden)
b) The banning of castration without anaesthesia (Norway)

In the UK the practice of castration with anaesthesia is legal, but forbidden by the 'Assured British Pigs' scheme in which nearly all farmers participate. There are no specific animal welfare schemes or top quality assurance schemes with animal welfare requirements in Sweden and Norway. The other four countries have (basic and top) quality assurance schemes that include animal welfare criteria, as well as some specific animal welfare scheme. It is also important to keep in mind that the character of the pig sector differs between the six countries. It is an important economic sector with high export and low import rates in The Netherlands. In France and Italy, the pig-sector is important; both countries export pigs and pig-meat but import as well. The sector is of considerable importance in the UK, with high import and hardly any export. In Sweden and Norway the sector is small, national sufficiency high and import low. Generally speaking, the pig sector is under considerable societal pressure in the UK, The Netherlands, France and Italy, because of concerns regarding animal welfare, environmental health and food safety (especially The Netherlands and UK). In all six countries the sector has changed a lot in the last decades, with rapidly decreasing farm numbers and an increasing average number of animals per farm.

The case-study included farms engaged in breeding and fattening of pigs, and combinations of both. In most countries farmers tend to participate in at least basic quality assurance schemes in order to assure market access and facilitate the checking of legal health controls. Preliminary analysis reveals that participation in animal schemes affects the farmers' definition of animal welfare, the importance they attach to it, and their willingness to further increase animal welfare standards. This differentiation is most visible in France, Italy, The Netherlands and the UK. In Sweden and Norway differentiation between farmers seems to be less and not related to their participation in animal welfare schemes.

In the other four countries there are roughly speaking two groups of farmers: (1) farmers who participate in either specific animal welfare schemes or organic production and (2) farmers who participate in either (basic and top) quality assurance schemes or no scheme at all. The first group of farmers is most concerned about animal welfare. This is not very surprising as they have consciously chosen to warrant a level of animal welfare above legal requirements, driven by ethical consideration and their ambition to

[21] This directive orders that, for instance, sows must be kept in groups during the period between 4 weeks after insemination and the week before the farrowing. It also orders that fattening pigs and sows must be provided with adequate "playing material" and a reasonable amount of fibrous fodder

realize an alternative agricultural production model. But the potential to receive a premium price may be an important incentive as well.

Farmers, who do not participate in animal welfare schemes may consider animal welfare as important, mainly because it influences animal health and consequentially production performance. Animals should be healthy and be kept under good, hygienic conditions in order to prevent sicknesses and injuries. The farmers participating in top quality schemes are motivated by premium prices. For all farmers, secure market access is an important driving factor. Some farmers do not participate in specific animal welfare schemes because they have no faith in the financial benefits promised, see only an increase in bureaucracy and work load and fear loss of their independence.
Some of these farmers do not believe that animal welfare is indeed improved by membership of sshemes.. This is in line with the difference in animal welfare definition given by the two groups of farmers. For nearly all farmers, animal welfare equals animal health and production performance. It is notable, however, that the expression of natural behaviour is mentioned predominantly by the farmers participating in either specific animal welfare schemes or organic farming. Most of the farmers are satisfied about the level of animal welfare realised at their farm. It is especially the second group, farmers who are already heavily engaged in animal welfare schemes who see most room for improvement also at the level of their own farm. They are also the most open to the adoption of more rigorous animal welfare standards. Again it must be said that this differentiation among farmers had not been found in Norway and Sweden. Italy is exceptional as well in the sense that the majority of farmers were convinced of the need to further improve animal welfare.

It is interesting to note that pig farmers recognize consumers' concern with animal welfare and accept the need to meet their demands. But they are also worried about the consumers' ignorance and misunderstanding of animal welfare and their unwillingness to pay. The relation with retailers is ambiguous. On the one hand farmers hope that animal-friendly products offer indeed opportunities for new markets. But they also feel threatened by the potential import of cheaper meat and the resulting competition on price.

Summing up, it may be said that the attitude of farmers towards animal friendly products is characterized by belief, hope and doubt. The more farmers are already engaged in animal friendly production, the more optimistic they are about market opportunities and consumers' responses and the more room for further improvement of animal welfare they see.

More 'conventional' farmers can see room for improvement as well and accept the need to respond to animal welfare concerns, but have considerable doubts about the economic benefits.

Departing from these preliminary findings, we may conclude that most pig farmers can be encouraged to turn towards more animal friendly production methods, either by law, or by convincing them of the reliability of sales, and by offering premium prices that compensate for increased production costs. Generally speaking there are two ways of organizing animal welfare. Countries can regulate it by implementing rigorous legislation, enforcing a high level of animal welfare in the whole sector. This might be characterized as the Scandinavian model, which proves to be very successful. We have to keep in mind, however, that these countries have a high level of self-sufficiency in livestock production and rather protected markets. The advantage is the high degree of transparency for producers, retailers, and consumers, because the rules are the same for everybody and implementation is checked by public authorities.

The alternative is to leave the regulation of animal welfare to the market. This liberal model is followed by most of the other participating countries, be it in differing degrees. Legislation and public authority guarantee a minimal level of animal welfare. Further improvement of animal welfare depend, in theory, on the motivation among retailers, producers and consumers to offer, or to demand, animal friendly products. In practice we see that NGO's play an important role in the development of animal friendly products, driven not by commercial but political considerations, and sometimes, in a way, replacing the state. In doing so they have proven that there is indeed a market for such products and that there are consumers who are ready to pay premium prices.

Welfare Quality
Science and society improving animal welfare

Developing a monitoring system to assess welfare quality in cattle, pigs and chickens

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Several initiatives from producers, retailers and welfare organisations aim at fulfilling the concern of consumers for better farm animal welfare. However, to date, no standard exists for the assessment of animal welfare and its translation into product information. Subproject 2 participates in the construction of such standards by developing monitoring systems to assess the welfare of cattle, pigs and chickens from farms to slaughter. Another use for monitoring systems is for them to act as a base upon which feedback can be given to farmers on probable causes for the current welfare status of their animals as well as on potential future risks to welfare.

Defining what should be addressed in a monitoring system for animal welfare

Welfare has been defined by several researchers (Broom, 1996; Duncan, 1996). But even if there are differences in emphasis between people (Fraser, 2004) in simple terms good welfare is regarded by many as good physical and mental health. It is also agreed that welfare is multidimensional, depending on many aspects of life, including the extent to which an animal experiences positive and negative affective states and events. These may include negative feelings such as hunger, thirst, pain and fear; physical comfort; injuries or diseases; and positive experiences such as those produced by the expression of motivated behaviours (FAWC 1992). A comprehensive assessment of welfare must take all these aspects into account and it must be based on scientific knowledge of animal welfare. The first year of the project Welfare Quality has involved discussions in just this topic with a view to synthesizing knowledge in this area.

Based on the literature and discussion among scientists, 12 areas of concern were identified that we agreed should be adequately covered in any assessment of welfare. These are presented in table 1 as welfare criteria, where the direction for maximising welfare is indicated. Each criterion covers a separate aspect of good animal welfare and the list was chosen to encompass all potential areas of concern while at the same time keeping the total number of criteria to a minimum. Several measures contribute to each criterion. To further reduce the number of items and ease the understanding, we propose to group them into 4 classes, called principles in the table, corresponding to the questions:

- Are the animals properly fed and supplied with water?
- Are the animals properly housed?
- Are the animals healthy?
- Does the behaviour of the animals reflect optimised emotional states?

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Table giving welfare principles, criteria and some examples of potential measures for each welfare criterion

Principle	Welfare criteria		Examples of potential measures
Good feeding	1.	Absence of prolonged hunger	Body condition score
	2.	Absence of prolonged thirst	Access to water
Good housing	3.	Comfort around resting	Frequencies of different lying positions, standing up and lying down behaviour
	4.	Thermal comfort	Panting, shivering
	5.	Ease of Movement	Slipping or falling
Good health	6.	Absence of injuries	Clinical scoring of integument, carcass damage, lameness
	7.	Absence of disease	Enteric problems, downgrades at slaughter
	8.	Absence of pain induced by management procedures	Evidence of routine mutilations such as tail docking and dehorning, stunning effectiveness at slaughter
Appropriate behaviour	9.	Expression of social behaviours	Social licking, aggression
	10.	Expression of other behaviours	Play, abnormal behaviour
	11.	Good human-animal relationship	Approach and/or avoidance tests
	12.	Absence of general fear	Novel object test

Deciding how to assess each aspect of animal welfare

Animals differ in their genetics, early experience and temperament and so may experience the same environment differently. Even apparently similar environments may be managed differently by the stockperson, so further affecting how animals experience a particular situation. Thus resource-based measures (like type of housing, allocation of resources, stocking density etc) or management-based measures (like breeding strategies, health plans etc) are a poor guarantee for good animal welfare in a particular situation. For this reason, and because welfare is a characteristic of the individual animal, we have decided in Welfare Quality to base welfare assessment essentially on measures taken on animals, so called animal-based measures (e.g. health and behaviour). In an earlier phase of this project, groups of researchers identified potential animal-based measures for the assessment of welfare and what research was needed to fill in the gaps in our knowledge about these measures. Examples of these measures are given in the right hand column of the table.

An example of how animal-based, management-based and resource-based measures relate to each other can be given using the well-known welfare problem of lameness in cattle. Lameness is the animal-based parameter probably best assessed by gait scoring. The farmer's policy regarding inspecting and trimming the feet is a management-based parameter, and the quality of the floor is a resource-based one. Good management can certainly reduce the problem but welfare assessment on a particular farm would rest primarily on gait scoring. Resource- or management-based measures may also be included in the welfare assessment when they are closely correlated to animal-based measures but much easier to perform. However in most cases they will be included in a monitoring system because they can form the basis for the identification of causes when animal-based measures have shown that the welfare of animals on a given unit is poor, or because they can help identify risk factors for future welfare problems. In the lameness example, information on the type of floor and the farmer's hoof care strategy could be used to help advise on remedial solutions to improve and or safeguard the welfare status of animals in the future.

This project addresses welfare of animals on farm, during transport and at slaughter. This does not mean that all measures have to be taken at all phases, since this is obviously not feasible in practice, but in combination the measures should enable an assessment to be made of the welfare of an animal during its lifetime. When it is not clear where a measure is best collected, then it will be recorded initially both on farm and at slaughter in the full monitoring system with a view to making the final decision at a later date on which measure or where it is most reliably/feasibly taken in the final monitoring system. At present over 50 potential measures are being evaluated, but it is expected that the number of measures in the final monitoring scheme will be much less.

Testing and developing measures

Most previous work on monitoring systems has focussed on 'what' or 'how much' of different resources are given to animals and this resource-based resource is usual in legislation. Even if there has been increased interest in animal-based measures in recent years and measures have been developed and tested in research projects under a longer time, this work is patchy and measures in some areas are better developed than in others. For example there are already schemes for gaits scoring cattle and poultry, but not pigs. And there are schemes for scoring plumage condition in laying hens, reflecting several years of active research on feather pecking behaviour, but no internationally accepted method for how to obtain reliable data in an area as important as animal health.

All measures that are included in the final Welfare Quality monitoring scheme must be evaluated with regards to their validity, repeatability and their feasibility. By validity we mean that it really does say something about the welfare of the animal. By repeatability we mean inter or intra observer repeatability and how robust the measure is to external factors such as time of day or weather conditions. It is perhaps unrealistic to think that in the time available we can validate all of the 50 or more potential measures that have been selected in this first round, get them all to be one hundred percent repeatable, as well as being feasible to carry out under practical conditions during a 1-2 hour visit. Some measures will not meet our standards, and will be dropped from the scheme early in the evaluation process, and some compromises are inevitable. Other measures may be accepted now, in anticipation of further developments and refinements, because we need to have sufficient information upon which to assess each area of concern. For example there is no currently feasible animal-based measure for dehydration, so a combination of resource-based and management-based measures will probably be used initially to ensure that animals at least have access to water, even if we can not be sure that they drink.
It is obvious and essential that the final monitoring scheme developed in Welfare Quality is as reliable as can possibly be achieved in the light of present knowledge. With this aim, already at the end of next year, the full monitoring scheme will be tested in practice on commercial farms and slaughter houses in several EU countries. Besides testing the large scale feasibility of the system, the data will be analysed and the measures further refined to produce a final scheme that has the desired balance between sensitivity and complexity for wide scale use.

Constructing an overall assessment

As stated previously, the monitoring systems developed in Welfare Quality can be used for several purposes. Being able to give advice back to the farmer based on the data collected on his/her farm is one obvious function. But being able to inform consumers about the welfare status of the animals from which they buy products is a major goal of the project. In this case the data will need to be integrated, probably to a single overall assessment of animal welfare.

Subproject 2 investigates methods developed in decision theory in order to design a model for the multicriteria evaluation of animal welfare. First, measures included in the same welfare criteria will be combined in order to produce one value for each criterion. As stated previously, it is unlikely that all the measures currently being evaluated will satisfy our standards, but if, as an example from table 1, we imagine that for the welfare criteria 'Comfort around resting' the measures; frequencies of different lying positions and standing up / lying down behaviour are both to be used, then they need to be combined so that the criterion 'Comfort around resting' can be given a single score that can be interpreted on a value scale from good to poor comfort. This score can then be combined with the value score for Thermal comfort' and 'Ease of locomotion' to give an overall score for the criterion 'Housing'. This value scale (good to poor) will be common for all criteria but because criteria cannot compensate each other (e.g. good health may not compensate for poor housing), we will use non additive methods to aggregate the criterion values into one overall assessment. This assessment will probably be expressed in the form of similarities with predefined profiles: the lower profile corresponds to the worst situation that can be found on a farm whereas the top one corresponds to excellent welfare.

Checking acceptability and usefulness of the monitoring system

For the monitoring system developed in this project to be widely accepted, it has to be scientifically based (as discussed previously) and it also has to satisfy public, industry and political views of animal welfare (also discussed previously). The set of criteria has been discussed among focus groups of consumers (Subproject 1) and seems to have received large consensus. It has also been proposed and agreed upon by the Advisory Committee of Welfare Quality. This committee includes representatives from producers, consumers, retailers, animal protection associations as well as official bodies (EU, OIE). The proposed methods are being evaluated by the Scientific Board. This conference is also a part of the process of getting a wider feedback on the principles and methodology used to develop a monitoring system to assess welfare quality in cattle, pigs and chickens. At a later stage, in subproject 4, acceptance of the final monitoring systems by stakeholders and their potential socio-economic impact will also be evaluated.

The main strength of the work in subproject 2 lies in the large number of researchers involved in identifying, developing and refining the measures and discussing how to integrate them. This consensus building process means the end decisions regarding the development of a monitoring system are likely to be more reliable.
However, it is important to remember is that monitoring systems are a tool to allow us to quantify the different aspects of animal welfare to help the decision on what is acceptable or not acceptable welfare on farm or at slaughter. Although some decisions are inevitably being made during the process of developing the monitoring tool that have an ethical component, the final decision on what is acceptable welfare (or not) is going to be made by stakeholders including consumers.

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Welfare Quality
Science and society improving animal welfare

Developing practical species-specific measures to improve farm animal welfare

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The primary aim of Sub-project 3 within the Integrated Project 'Welfare Quality' is to develop and test practical strategies for improving the welfare of farm animals. Potential strategies may include both environmental and genetic approaches aimed at minimising the elicitation and expression of harmful behavioural and physiological states, providing animals with a safe but stimulating environment, and improving human-animal relationships through appropriate training schemes for stockpersons. These remedial strategies will be applied in situations that are known to cause consumer concern as well as in those where earlier studies have revealed welfare problems. This effort will thereby help producers to achieve a high on-farm welfare status.

Viable remedial strategies must satisfy both welfare and economic requirements. They must also be practicable, i.e., affordable and easy to implement by the farmer and/or breeding company. Practical solutions do not necessarily imply the exclusive adoption of free-range systems or of extensive, organic farming. Intensive forms of livestock farming may also safeguard the animals' welfare, providing that they meet their most important needs.

Sub-project 3 is divided into 6 Work Packages (WP), each addressing a particular welfare problem: handling stress, harmful traits, injurious behaviours, lameness, neonatal mortality, and social stress. These key welfare concerns are perceived as important by European consumers. Our efforts offer the potential to greatly improve animal welfare through innovative, high quality scientific research. The objectives of the present paper are (1) to discuss the importance of each of these areas and (2) to describe some of the results already obtained within Welfare Quality.

1. Handling stress

1.1. Background

Fear is an aversive emotional state shared by humans and non-human animals. Farm animals experience many potentially fear-eliciting stimuli, but close proximity of people may be one of the commonest and most important. Research in pigs, cattle and poultry over the last two decades clearly demonstrated strong variability between farms in animals' fear responses to humans. (Hemsworth and Coleman, 1998). Further, fear of humans depends to a great extent not only on the animals' genetic backgrounds but also on their previous experience with their caretakers, and this, in turn, is affected by farmers' skills, attitudes and beliefs. For example, in Australia, Hemsworth and Coleman (1998) showed that stockpersons' attitude was a major factor explaining day-to-day human-animal interactions

(especially aversive human contact) and their consequences on welfare. Personality traits, self esteem and job satisfaction are all important factors (Hemsworth and Coleman, 1998; Seabrook, 2001).
Fear of humans is not only an important welfare problem, but it also has important negative effects on productivity and product quality (Boivin et al., 1998a,b, Rushen et al., 1999). For example, handling during loading/unloading and the mixing of animals before slaughter caninduce stress and reduce meat quality (Fernandez et al., 1996; Grandin, 2000, Lensink et al., 2001b; MacVeigh et al., 1979; Manteca., 1998).
Stockmanship is an extremely important issue (Lensink et al., 2001a; Waiblinger et al., 2002) and EU council directive 95/58/EC (1998) states that "animals shall be cared for by a sufficient number of staff who possess the appropriate ability, knowledge, and professional competence".
The main goal of this work packages is to improve knowledge about the human-animal relationship in Europe in order to decrease handling stress through improvement of stockpeople's attitude and behaviour. There are three working steps: 1) developing knowledge on the variability of European husbandry conditions and farmer's attitudes and practices targeting or challenging human-animal relationship, 2) testing practical solutions to improve handling and 3) developing and testing a pilot training program for handlers and for the different targeted species. The survey step is particularly important to build this training program, as it is important to be able to discuss during the training session the variability of the farmers' practices and attitudes.

1.2. Findings

Some results have already been obtained in beef cattle. A questionnaire designed to analyse husbandry conditions and farmers' attitudes towards animals was sent by mail to 297 farmers in charge of Limousine suckling herds. The response rate was 55%. The association between the responses of the farmers and the docility score of approximately 600 calves (average of 3 per farm), tested at 10 months of age was estimated. Farmers highlighted the importance of human contact for beef cattle docility. However, early results from ANOVA and multiple regression analyses suggest that the main factors affecting docility are more the cow's housing conditions (tied or free), farmer's attitudes towards handling facilities, genetic background, and tethering practices at weaning.

A second study on the transport of beef cattle transport has begun. Data from 1202 Charolais bulls from 108 farms has been collected, including: presence of loading facilities, reactions of animals when loaded and unloaded, quality of the journey (type of truck, duration, number of stops), mixing, number of bulls from the same fattening group transferred together, duration at lairage, and meat pH. Climatic information (temperature, wind) was also collected. Farmers' attitudes toward bulls was assessed using a summary questionnaire derived from a previous larger study. Additionally, blood samples were taken after stunning. Early results suggest that the absence of loading facilities, transport on a warm day, and short lairage times were stressful (increased cortisol) and caused a less pronounced decline of meat pH.
The presence of familiar bulls and farmers' perception that bulls are sensitive animals were related to reduced stress and improved meat quality, while a positive attitude towards close contacts with bulls were also associated to increase difficulty for loading animals in trucks.

2. Genetic solutions to welfare problems

2.1. Background

One of the commonest approaches to welfare problems has been to change the environment in which animals are kept, with the aim of accommodating their behavioural and other needs and providing those environmental conditions that allow them to successfully adapt without harmful consequences. However, although this is a highly appropriate and socially accepted strategy for improving farm animal welfare, it may not be sufficient for maintaining good welfare in the long run. This is because production systems are generally designed and implemented to fit the average animal rather than the individual, and because the systems can change. Given the profound individual differences in many important biological characteristics within the same farm animal species or breed (Jones and Hocking, 1999; Erhard and Schouten, 2001), a production system that is favourable for one individual may be less favourable or even detrimental for another. Furthermore, commercial breeding programmes generally emphasize genetic improvement in production efficiency and, therefore, tend to only incorporate production-related traits. However, selection for high production has resulted in several undesirable side-effects, including behavioural and health problems, in many species (Rauw et al., 1998).

Underlying characteristics such as fearfulness, sociality and coping style have been shown to be, to a certain extent, genetically controlled (Kagan et al., 1988; Suomi, 1991; McEwan and Stellar, 1993; Boissy, 1995; Jones, 1996; Ramos and Mormède, 1998; Kavelaars et al., 1999; Koolhaas et al., 1999) and to play important roles underpinning individual differences in welfare status. In pig production, moreover, there is evidence that relevant functional traits such as leg weakness and longevity of sows may have a genetic basis, and that a number of genetically inherited disorders exist within the population that may directly affect mortality, morbidity or general welfare. The frequency of these latter disorders increases in closed (and small) nucleus herds where matings between relatives are applied. Therefore, genetic selection aimed at strengthening desirable characteristics and eliminating harmful ones is likely to be a rapid and effective way of improving animal welfare.

This WP has two main objectives. First, we want to identify and record inherited genetic disorders affecting pig welfare, and we want to unravel the genetic basis of functional traits in pigs, including leg weakness and longevity. Subsequently, we will make recommendations concerning selection strategies on how to improve pig welfare by using functional traits and by reducing the incidence of inherited disorders. Second, we aim to examine relationships in dairy cows between underlying characteristics such as fearfulness or sociality on the one hand, and measures of on-farm adaptive ability on the other, in terms of, for example, health, fertility and production. Results are expected to allow us to define new traits related to adaptive ability in dairy cows, which could be used in welfare-friendly breeding programmes, and which may help to evaluate selection strategies in terms of risks of reduced welfare.

2.2. Findings

The practical work in this WP involves the recording of various characteristics in large numbers of animals in order to facilitate subsequent quantitative genetic analysis. At present, we are in the middle of data recording. The structure of the pig population to be used in this work package has now been described. Additionally, a protocol for recording functional traits and inherited disorders in pigs has been developed, and is used in practical observations.

Likewise, protocols for the systematic recording in dairy cows of behavioural and physiological characteristics related to underlying traits such as fearfulness and sociality, and of measures of on-farm adaptive ability, have been defined. These protocols are currently applied in large-scale studies. Behavioural and physiological characteristics refer to the responses of individual animals to potentially fear-eliciting challenges such as brief isolation, novelty and exposure to an unknown human. Measures of on-farm adaptive ability include a range of health-related characteristics, reproductive measures, production traits, and several behavioural measures related to activity patterns (e.g. standing and lying), feeding and social behaviour.

3. Injurious behaviours

3.1. Background

Injurious behaviours, such as tail biting in pigs and feather pecking in chickens, are serious welfare problems. It is accepted that they are multi-factorial phenomena but there is still insufficient knowledge of the factors that contribute to the development of such deleterious behaviours.

Experimental and epidemiological studies have shown that the provision of a foraging substrate reduces tail-biting in pigs. For example, Moinard et al. (2003) found that the presence of fresh (regularly renewed) straw or similar bedding materials during the growing period, and also during the pre-weaning period, had a strong protective effect against tail-biting. Early provision of straw or other bedding material might also increase environmental complexity and exert desirable long-term effects on social behaviour and stress susceptibility, but the age at which such substrates are optimally protective is unclear. One aim of this work package is therefore to investigate how adding foraging substrate at different points in the production cycle helps protect against the subsequent emergence of tail-biting.

Despite significant effort to control feather and vent pecking in laying hens, both still impose a serious and widespread threat to the birds' welfare. A limited number of epidemiological studies, which highlighted different aspects of the multifactorial origin of feather pecking, have shown promise (e.g. Nicol et al., in press) but more knowledge of the relative importance of different risk factors for feather and vent pecking, particularly during rearing is needed. Further, recent findings indicate that feather pecking (FP) behaviour has a low to moderate heritability (Kjaer and Sørensen, 1997; Rodenburg et al., 2003) and that genetic selection can change the level of FP permanently in a population (Kjaer et al., 2001). A further aim of this workpackage is therefore to investigate the role of various risk factors in the development of feather pecking behaviour, including the influence of early experience during the rearing phase before the birds go into lay. Another aim is to understand better which individuals are at risk of developing into performers or recipients of tail-biting and feather pecking. This will be addressed by searching for early predictors of later individual behaviour in pigs, and by investigating behavioural and physiological differences between chickens known to vary genetically in their

predisposition to display injurious behaviour, using a high and low feather pecking line. Early identification of later tail-biters or feather peckers may allow the use of husbandry interventions to minimise the chance of outbreaks, and offer the possibility of removing at risk animals from the population.

3.2. Findings

A protocol for assessing individual differences in pigs' propensity to develop tail biting has been developed. This is based on a 'tail-chew' test used by other authors. In previous studies, pigs were tested singly and the test stimulus was usually a tail-like object (length of rope) attached to a wall. Some researchers mentioned that this situation often elicited escape behaviour which likely acted as a confounding and time-inefficient factor. In the present project, pigs were tested individually, in pairs or in groups of 10, and the rope stimulus was either attached to a wall, or to a stand-alone object (heavy plastic parasol base) that allowed the pigs to approach from all sides. The study used a 2 (tail-on-wall; parasol base) x 3 (group size: 1,2,10) factorial design. Sample sizes of 10, 10 and 4 were used for single, paired and group tests, respectively. In each test the number of rope stimuli equalled that of subjects. Ten min tests were conducted 1 week after weaning and repeated 3-4 weeks later. Analyses included cross-test correlations, to determine if the tests identified stable behavioural characteristics, and measures of central tendency and spread of 'rope-chewing' durations. When tested singly, pigs showed hardly any interest in the rope, and appeared fearful and stressed. Testing in pairs and groups of 10 induced much higher levels of 'rope-chewing' behaviour. The pigs chewed more when the rope was attached to the parasol base (PB) than the wall (TW), but there was limited inter-individual variation in the PB test and hence rather weak cross-test correlations. The TW test with groups of 10 produced the strongest positive cross-test correlations and a good spread of responses within groups. This test has therefore been selected for the main study which will investigate the effects of early experience of foraging material on later tail-biting, and the extent to which tail-biting behaviour can be predicted by the tail-chew test.

The epidemiological study of feather pecking is proceeding with data now collected from around 50 rearing flocks and nearly 100 laying hen flocks. The study of behavioural and physiological differences between high and low feather pecking lines has started. Preliminary results indicate that birds from the high pecking line show higher levels of general activity, as measured using an automated transponder system in groups of 180 birds comprising 60 each of high feather peckers, low feather peckers, and control (unselected) birds.

4. Lameness

4.1. Background

Large numbers of cows on European dairy farms suffer from lameness, indeed some studies revealed as many as 55 cases per annum. Lameness is a major welfare concern, since it causes behavioural restriction, pain and reduced longevity (Bergsten et al. 1998, Clarkson et al. 1996, Distl 1994, Reurink and Van Arendonk 1987, Whay et al. 1998). Locomotory problems also cause financial loss due to reduced milk production, fertility, and body condition, and the costs of veterinary treatments and extra labour (Argaez-Rodriguez et al. 1997, Esslemont and Spincer 1993).

Lameness in dairy cows is a multifactorial problem, and discrete associations of lameness with factors such as floor type (Leonard and O'Farrell 1994), space allowance (Leonard et al. 1996), social rank

(Galindo et al. 2000), food type (Kelly and Leaver 1990), hygiene and phenotype, have been reported. Knowledge of the potential interactions between these factors is a precondition for the development of practical intervention strategies. The present project was designed to improve data collection, assess to what extent specific environmental factors cause lameness, to produce recommendations on floor types in cubicle houses and construct an on farm Lameness Control Programme.

In intensively reared broiler chickens, lameness/abnormal gait is highly prevalent throughout Europe (Sanotra 2001). Between 10 and 30 % of broilers may suffer from painful leg disorders (McGeown et al. 1999, Weeks et al. 2000) and the latter are one of the most serious farm animal welfare problems (SCAHAW, European Commission 2000). The two main causes of lameness are skeletal abnormalities (Leterrier and Nys 1992a) and infections in bones and joints (Butterworth 1999). Skeletal abnormalities are largely a function of fast growth rate resulting in abnormally high loads being placed on relatively immature bones and joints (Leterrier and Nys 1992b, Leterrier et al 1998, Kestin et al. 2001). Constant genetic selection and improved diet has increased growth rate and skeletal diseases.

Reducing broilers' early growth rate or increasing locomotory activity may provide partial solutions (Leterrier and Constantin 1996, Leterrier et al. 1998). Activity could probably be increased by changing feeding schedules (Bizeray et al. 2002d) or the sequential feeding of whole and complementary diets. Indeed, sequential feeding of high energy and high protein diets improved gait scores (Bouvarel et al 2003ab). Altering protein levels might also ameliorate heat stress in summer and, thereby, reduce mortality. The present project was designed to identify risk factors and their relative contribution to the occurrence of lameness in broilers, to
assess the efficacy of selected sequential feeding programs, by measuring their effects on gait scores, and to design a lameness control programme for use on farms.

4.2. Findings

A standardised protocol for data collection on dairy farms has been developed and checked for inter-observer reliability (IOR). Five different methods for scoring Body Condition Score (BCS) were merged into one that was based on scoring eight anatomical areas on the caudal part of a cow. Inter-observer agreement with the overall score was good to excellent, and as on-farm protocols are time restricted, we support the overall BCS for on-farm use. The IOR of a 'subjective' locomotion scoring system, comprising five gait scores, was assessed with four observers, three of whom were inexperienced. The rather unsatisfactory IOR mostly originated from disagreements about the gait assessment in non-lame cows. Merging to four or two scores highly improved reliability and led to acceptable results, even at the relatively low training-level of three observers.

Four different walking surfaces, i.e. a grooved cement floor (GC), a slatted cement floor (SC), a slatted cement floor covered with rubber (SR) and a solid cement floor covered with rubber (FR), were tested for effects on locomotory health in dairy cattle. Locomotory health was scored with the use of the locomotion score of Manson and Leaver (1988) and the use of a pressure distribution plate (footscan). Claw hardness was measured with a shore D measuring device. Preliminary results suggest that in lactation / experimental week 24, cows on the GC and FR (both solid) floors had significantly higher locomotion scores than cows on the SC and SR (both slatted) floors. The GC and FR floors were also the most slippery floors. The claws of the cows on the SC floor were significantly harder than the claws of the cows on the other floors. Claw growth and wear were the highest on the SC floor and this may explain the increased hardness. Footscan data suggest that on rubber floors, more than on concrete floors, relatively high loads occur in the wall areas of the claws, which is favourable as this is the

strongest part of the claw. Behavioural observations suggest that, in comparison to cows on concrete floors, cows on rubber floors spend more time standing and eating and less time standing in cubicles. Slatted floors and rubber surfaces seem to have qualities that promote good locomotory health in dairy cattle, though the present results need to be confirmed by the final analyses.

Groups of male meat-type chickens were exposed to one of three feeding regimes from day 10 to day 24. Controls received a standard diet (100% lysine content) each day, the '100/70' group was fed 100% lysine one day and 70% the next, while the '130/70' group received 130% lysine one day and 70% the next. Gait scoring was carried out on the basis of the classification by Kestin et al. (Kestin et al. 1992). The percentages of birds with abnormal gaits were 48%, 16% and 22% for the control, '100/70' and '130/70' groups, respectively at slaughter age. These findings suggest that such sequential feeding might be an effective way of reducing the incidence of leg problems. Work is in progress to determine whether 24H and 48H schedules should be used. We will also seek ways of minimizing the associated reduction of body weight at slaughter age.

We also found that gait scoring methods could be learned by inspectors from widely different geographical and social backgrounds. This, together with the great similarities in the way broilers are farmed, implies that results could be compared across countries once the inspectors' performance had been validated during training and at scoring.

5. Neonatal mortality

5.1. Background

Neonatal mortality is a major welfare and economic problem in the pig industry, losses of up to 15% of the piglets being common (Varley,1995). Many environmental and genetic factors can influence piglet survival. There has been considerable focus on the influence of the farrowing environment on piglet mortality but the interactive effects of the farrowing environment, management and husbandry have received little attention. In addition there has been little work on the roles of the sow and her litter in piglet mortality, and on how the sow-litter unit interacts with the environment. There is, however, growing evidence to suggest that characteristics of the sow and piglets are critical risk factors for piglet mortality in their own right, and that piglet mortality can be improved through genetic selection.

The main objectives of this Work Package are to: (a) identify genotypes in the UK and Denmark that vary in relation to piglet survival; (b) establish genotype x environment studies of piglet mortality in Denmark/Norway (D/N) and UK; (c) develop a prototype decision support tool for increasing piglet survival.

5.2. Findings

Genetic analysis has been carried out on both UK and Danish data bases. Various survival traits have been investigated. In the UK selection for the subsequent genetic x environment experiment is based on survival from birth to weaning. In Denmark the selection will be based on survival from birth to 5 days. The heritability for these traits are low as expected but there is sufficient genetic variation that progress in improving piglet survival can be made.

In the UK selection of animals has taken place. Sows have been inseminated with semen from boars of high and low genetic merit for survival, and an extensive study has been made of the behaviour and physiology of the piglets resulting from these matings. This study was the 1st to apply such a detailed analysis of neonatal piglet biology in an outdoor pig production system. The results from this work are now being analysed.

In Denmark selection of animals is about to begin. The Danish/ Norwegian research has been more focused on measuring sow behaviour and at a recent Work Package meeting a protocol that combined piglet and sow measures was agreed and will be implemented in the main phase of the work. Sows and their piglets coming from these different genetic backgrounds will be studied in a range of systems including conventional crates, indoor pens and an outdoor production system.

6. Social stress

6.1. Background

Social stress caused by aggressive interactions or competition for resources such as food or lying space can be a major cause of poor welfare in many species and housing conditions (D'Eath, 2002). Besides the effects of stress itself, aggressive interactions can cause injury and death (Edwards, 1998). They can also increase the incidence of disease, such as lameness in cows (Phillips, 2002). Further, competition for food can disrupt the normal feeding pattern of subordinate animals and, in turn, reduce food intake and increase the risk of metabolic disturbances, such as ruminal acidosis in cattle (Albright, 1993; Phillips and Rind, 2002). The reduction of these consequences of social stress is important not only on welfare grounds, but also because they can reduce production and therefore economic revenue (Edwards, 1998; D'Eath, 2002). In the case of pigs, social stress will become even more important as a consequence of EU legislation banning individual housing of pregnant sows. Indeed, aggression and competition between animals is considered one of the main welfare problems in group-housed sows (SVC, 1997; Edwards, 1998). Social stress can be reduced by two different approaches: genetic selection aimed at decreasing aggressiveness in animals (van Oortmerssen and Bakker, 1981; Cairns, 1983), and changes in housing conditions and feeding systems aimed at reducing the need or motivation for animals to behave aggressively or compete with each other (Roberts et al., 1993).

The objective of this work package was to evaluate the potential to reduce social stress in pigs and cattle through (1) genetic selection of pigs toward reduced aggressiveness, (2) dietary changes aimed to reduce aggression in pregnant sows, (3) changes in the environment of young stock to increase their socialization, and (4) separation of primiparous and multiparous cows and changing the length of the food trough to decrease competition for food and the incidence of acidosis and other metabolic disorders in cattle.

6.2. Findings

A preliminary experiment was carried out to investigate the capacity of sows to adapt to a new group housing system. Sows had no difficulty adapting to the “trickle feed” system. As for the electronic feeding system, adaptation was quicker in the second gestation period (less than 24 h.) compared to the first gestation period (about five days). In both gestation periods old sows were more active than young sows.

In dairy cows, the main result so far is that primiparous cows, when separated from multiparous cows, increased the number of visits to the robotic milker and to the feed trough, but milk production was similar compared with primiparous grouped with multiparous cows. However, feed efficiency (kg of fat-corrected milk/ kg of dry matter intake) improved when primiparous cows were housed separated from multiparous ones.

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Welfare Quality
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A review of the tools that are being developed to facilitate the implementation of improved animal welfare standards.

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Background

One of the significant aims of the Welfare Quality project is to develop tools for monitoring animal welfare from farm to slaughter. These tools can be used for a number of purposes;

- To allow inspection and scoring of farms, to inform consumers about the welfare status of the animals from which they buy products.
  (The data from the measures will need to be integrated, probably to an overall assessment of animal welfare, and this information is likely to be made available on a label, or via web links)

- The measures, can be used to give 'advice' back to the farmer based on the data collected on the farm.

- The standard will contain scoring and assessment systems and 'reference' values which may prove to be of real ongoing value to animal welfare scientists.

- The assessment standard may be used by statutory bodies (governments) in their assessment of farms.

Other speakers at this conference have described in detail the work packages that are developing the precise measures (the tools) which will be adopted for Pigs, Poultry and Cattle, but I will expand a little on the general principles which I believe will create effective, practical and transparent tools - which farmers can see as having 'value' in assessing the animals which they farm and care for;

- The tools must retain their fundamental nature and validity – to ensure that the results of the assessment continue to tell us about the animals welfare state - and do not simply become exercises in data collection.

- The tools must be become practical and useable on farm, and within an inspection process.

The tools, which are being researched at present, are intended to cover a wide range of potential impacts on animals which may, (or may not) result in poor welfare. Sometimes the tools may be able to answer the question 'does this farming system not only avoid 'poor welfare' but also promote animal 'wellbeing'? - a concept which is starting to become incorporated in EU legislation.

The following key areas are addressed by the tools being constructed;

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1. Hunger, thirst or malnutrition
This occurs when animals are denied a sufficient and appropriate diet or a sufficient and accessible water supply and can lead to dehydration, poor body condition and death.

2. Physical comfort and security
Animals can become uncomfortable and have problems lying down, getting up and standing. This can occur when they are kept in inappropriately designed housing (e.g. insufficient space, poor ventilation, unsuitable flooring and bedding) or when they are transported in poorly designed or poorly ventilated vehicles.

3. Health: injuries
Animals can suffer physical injuries, such as mutilations, broken bones, bruises or skin lesions, due to factors such as; uneven or slippery flooring, enclosures with sharp edges and environments that promote aggressive behaviours between animals.
4. Health: disease
Animals can suffer a range of diseases (e.g. mastitis and metabolic disorders in cattle). Poor hygiene, irregular monitoring and insufficient treatment speeds can amplify these problems.

5. Pain (not related to injuries or disease)
In addition to suffering pain from injuries and disease, animals can experience intense or prolonged pain due to inappropriate management, handling, slaughter, or surgical procedures (e.g. castration, dehorning) and as a result of intense aggressive encounters.

6. Normal/natural social behaviours
Animals can be denied the opportunity to express natural, non-harmful, social behaviours, such as grooming each other and huddling for warmth. Separating females from their offspring and preventing sexual behaviour can bring about specific examples of this problem.

7. Normal/natural other behaviours
Animals can be denied the possibility of expressing other intuitively desirable natural behaviours, such as exploration and play. The denial of these possibilities might lead to abnormal and/or harmful behaviours such as tongue rolling in cattle and feather pecking in chickens.

8. Human-animal relationship
Poor relationships can be reflected in increased avoidance distances and fearful or aggressive animal behaviours. This can occur due to inappropriate handling techniques (e.g. slapping, kicking and the use of electric prods), or when farmers, animal transporters or slaughterhouse staff are either insufficiently skilled or possess unfavourable attitudes towards animals.

9. Negative emotions (apart from pain)
Animals can experience emotions such as fear, distress, frustration or apathy, when they are kept in inappropriate physical or social environments (e.g. where there is over mixing, or not enough space to avoid an aggressive partner). These emotions can be reflected in behaviours such as panic, flight, social withdrawal and aggression and in certain vocalisations and behavioural disorders.

10. Positive emotions

Poor management routines and a lack of environmental stimulation may prevent animals from expressing positive emotions. Positive emotions are difficult to assess but may be reflected in certain behaviours, such as play (especially in young animals) and by certain vocalizations.

What inspection tools already exist in existing farm inspection systems?

Existing standards are beginning to ask 'animal centered' questions, and it is apparent that there is a realisation, within these standards, that simple resource measures sometimes fail to adequately answer questions about animal welfare. A number of current agricultural standards which are in use in Europe already start to use some basic 'welfare assessment tools' in the sense that they often incorporate the inspectors opinion (during a visual inspection of stock) regarding the welfare condition of the stock which he or she inspects. Some publicly available standards can be found at;

- EUREPGAP CCCP (Control points and compliance criteria) for Cattle (&sheep), dairy cows, pigs and poultry at; http://www.eurep.org/farm/Languages/English/documents.html
- Assured Chicken Production (ACP) at; http://www.assuredchicken.org.uk/_code/common/item.asp?id=4033512
- National Dairy Farm Assurance (NDFAS) at; http://www.redtractor.org.uk/download/rt_standards_dairy.pdf

Within these standards, the majority of the standard requirements are written as short descriptions of what is required (clauses), and are almost all 'record' or 'resource' based.
However, some of the existing standard 'clauses' are very close to being animal based tools - for example

Are growing pigs kept in stable social groups? (This question can be answered by the stockman on the basis establishment of groups of pigs, but also could be answered by observing the social interactions between the animals.)

*Where tail, flank, ear biting or fighting, which goes beyond normal behaviour becomes apparent, is an effective plan agreed…….? (*What is 'normal behaviour', what are the thresholds and what are the welfare implications for the animals of biting and fighting?)

The tools being developed in the Welfare Quality project develop, and evolve, this trend in existing commercial standards, whilst accepting that many areas of animal assessment are complex, and some are very subtle. If the measures (tools) cannot be carried out by an independent inspector (not an animal science specialist), and realistically applied on farm – then they are unlikely to be adopted. A number of tools or measures may become integrated with other measures made together – for example - social and aggressive interactions in pigs may be assessed by observation of behaviours, as well as by counting fight marks, tail biting etc. Combination or linking of measures may be a very time efficient and productive way of gathering information.
Photographs or video 'references' are likely to be of real value when the tool 'protocol' is described - the instructions to the assessor of how to carry out the measure – and are also of real value in training people to use the tools, and in describing the tools to the client (farmer, retailer etc).

Figure 1. Some examples of the sorts of 'reference' examples which are likely to be incorporated in the Welfare Quality assessment tools.

	Tail biting severity in pigs. Scoring systems may be used to create an tool based on severity bandings.
	Hock swelling in cattle can be used a s a tool to assess not only the direct effect on the cows leg, but also to assess comfort and housing and environmental questions.
	Foot pad lesions in poultry are a tool which not only tell you about the foot health of the bird, but also the conditions in which the bird is housed.

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Stakeholder involvement in Welfare Quality

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Introduction

With respect to agri-food products, quality perception is affected by both intrinsic and extrinsic characteristics (Luning et al. 2002). Intrinsic attributes that are particularly relevant to consumers include safety, nutritional value, sensory properties, shelf life, convenience etc. Extrinsic attributes refer to production system characteristics and other aspects, such as environmental impact or marketing influence; they do not necessarily have a direct influence on physical properties but they affect acceptance of products by consumers.

Consumers also now expect their animal-related products, especially food, to be produced and processed with greater respect for the welfare of the animals (Harper & Henson 2000; 2001). Thus, their perception of food quality is also determined by the welfare status of the animals from which the food was produced: the welfare quality. The fact that improving an animal's welfare can positively affect numerous aspects of product quality (e.g. reducing the occurrence of tough or watery meat as well as the incidence of bruising, bone breakage, blood spots and abnormal eggshells) pathology (alleviating fear reduces the potential development of pathological anxiety) and disease resistance (decreasing the immunosuppressive effect of chronic stress and the need for antibiotics) clearly links welfare quality to other aspects of food quality and to food safety (Hughes & Curtis 1997; Jones 1997, 2001; Faure et al. 2003).

Since the consumer is the end-user, his or her requirements form the bottom-line for any effort intended to achieve the ultimate fine-tuning necessary to assure societal and economic sustainability of agri- and food-chains. Further, by influencing credibility and perceived quality, marketing efforts in relation to animal welfare (e.g. communication via branding and labelling) affect quality expectation. Worldwide marketing strategies "confirm that producers and retailers today are ready to apply new criteria so as to provide consumers with extra value" (European Commission 2002).

The Welfare Quality approach is to facilitate intra European trade and marketing by providing relevant and understandable information for all European consumers.

The Welfare Quality project addresses these market demands by developing a reliable on-farm welfare assessment standard to measure the animals' welfare status and a related product information standard (c.f. Blokhuis et al. 2003). These two standards will be generated according to the CEN requirements, and designed so that they can be used by an EN45004 and EN45011 accredited body, respectively. Additionally, Welfare Quality will produce training material that will be suitable for certification bodies operating under EN45013 that wish to certificate personnel conducting these assessments. Implementation of these information standards will enable the differentiation of EU food products on the market from those for which the welfare status of the animals in the production chain is uncertain.

Accommodating priorities of stakeholders

As with all other large research projects we must ensure that Welfare Quality addresses important issues and that our results and recommendations are practical and applicable. Welfare Quality takes an integrated approach in that it considers the efforts and requirements of all the principal stakeholders. Our collective research packages include consumer, producer and retailer perceptions and demands, the development of scientifically based on-farm welfare assessment systems, the identification and validation of new welfare improvement strategies, and the implementation of our findings in real life.

An important thrust of the project focuses on promoting an active science-society dialogue in order to meet the justified demands of stakeholders (general public, consumers, animal welfarists, farmers, retailers, policy groups etc.) to be not only properly informed about scientific developments in a timely manner but also to ensure that resulting conclusions and recommendations are accessible, acceptable and applicable throughout the food animal product quality chain. Moreover, the mechanisms for knowledge transfer and the planned demonstration activities will further broaden the impact of our results and stimulate new ideas and market initiatives.

Advisory Committee and Scientific Board

Within Welfare Quality an Advisory Committee (AC) evaluates the general aims and approaches of the project. The AC consists of stakeholders (e.g. representatives from welfare, ethical, consumer, producer and retailer organisations etc) with a clear interest in the results of the project. This Committee was partly established prior to submission of the Welfare Quality proposal and provided valuable advice on the inclusion of specific issues and strategies. The AC will continue to advise on the relevance, timeliness, general aims and approaches of the project, as well as on the inclusion of specific issues and strategies as required during its lifetime. This advice ensures that our work matches the priorities of these stakeholders.

The establishment of a Scientific Board (SB) helps to ensure that the project maintains high scientific rigor and quality. The SB consists of a core group of six highly respected academics from three continents who's collective expertise covers all aspects of Welfare Quality. Their input also contributes to the global relevance of our efforts, both in the academic and commercial worlds.

Animal Welfare Platform

To link the Welfare Quality Project to ongoing activities of stakeholders, we are developing a 'European Animal Welfare Platform', which aims to function as the bridge between theory and practice, and to enable a two-way feed back process:
This platform is an initiative of several stakeholders in the food animal product chain (producers, retailers and consumers/public) and the Welfare Quality project. The general aim is to realise EU wide transparency of information and the certification of the welfare of food producing animals. It therefore develops common activities which will further the development and implementation of such information systems.
More specifically, the aims of the platform are:

- To liaise and interact with research efforts and to realise common R&D, and innovations designed to suit market needs;
- To respond in a timely and effective fashion to societal trends and developments, and thereby improve profile and image;
- To further analyse the barriers to and opportunities for including welfare quality in the product chain and to market this effectively;
- To implement on-farm monitoring and consumer information systems related to animal welfare;
- To realise common market communication and concepts.

The members of the Platform interact on the basis of mutual trust and respect. Members are free to discuss any matter that they feel relevant to achieving the aims of the Platform. In principal the Platform is open to all partners/stakeholders that are committed to actively contributing to its aims. Applications to join the Platform are voted upon by the existing members.

Ongoing interaction with stakeholders

Clearly our ongoing activities, as described above, will help to ensure that the work carried out in the Welfare Quality project is tailored to the expectations and needs of stakeholders and market partners. We will disseminate our results as widely as possible. Mechanisms include publication of papers in scientific, trade and popular journals, talks to stakeholder groups, the provision of educational materials etc.

We invite all stakeholders to take a pro-active approach and to develop joint activities with members of Welfare Quality in a common effort to improve animal welfare and to provide guaranteed added value to animal products.

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Implementing the results and recommendations from the Welfare Quality project

Andy Butterworth, University of Bristol, United Kingdom

The aims of WELFARE QUALITY are:

- to integrate and interrelate the most appropriate specialist expertise in the multidisciplinary field of animal welfare in Europe to develop practical strategies/measures to improve animal welfare,
- to develop a European on-farm welfare assessment standard
- to develop a European animal welfare information standard

What will the welfare assessment and product information standards be used for?

There are a number of potential applications for animal welfare assessment systems :

Voluntary / Certification systems

There has been a large increase in voluntary certification schemes in many countries (Wood et al, 1998, Bartussek, 1999). Membership is not a legal requirement and is often associated with a marketing claim but where these schemes are a precondition for the sale of products to retailers this voluntary system effectively becomes mandatory for the farmers. Certification schemes often include a basic requirement to comply with relevant welfare legislation but there are often additional welfare standards that have to be assessed in a similar fashion (Main et al., 2001). Recent investigation of the impact of the RSPCA Freedom Food scheme on welfare in dairy cattle (Whay et al., 2003) showed that, despite compliance with rigorous resource-based standards, welfare problems like lameness were still high (mean 22%) on farm assured farms. There is, therefore, a perceived need amongst some certification schemes (Main et al, 2003) to use more animal-based measures for the certification process and for this to be effective a standardised welfare assessment system is required. The system needs to be sufficiently transparent for the controlling agency to defend the assessment decision. The system would, therefore, need sufficient descriptions or guidance notes for each welfare measure to enable a trained and experienced assessor to make consistent assessments and to ensure consistency across assessors.

Research tool

On-farm welfare assessment is a useful research tool that can be used to assess the welfare impact of selected features, e.g., specific husbandry systems and/or genotypes. Research is particularly important for the legislative process in animal welfare. Standardized welfare assessment techniques would be extremely beneficial for interpreting such research and thereby facilitating a unified view.

Advisory / management

Welfare assessment can be used in a non-controlling framework where farmers use welfare assessment to monitor welfare over time and receive advice about suggested solutions to observed welfare problems. Some systems used for other legislation or certification purposes may also be used as an advisory / management tool, e.g. farmers and advisors may wish to use TGI assessment to identify areas of potential improvement in welfare. Welfare assessment results may be reported back to the farmer with a comparison of their performance with farmers using similar systems (“benchmarking”).

A benchmarking system that educates farmers on their own performance and encourages them to improve in areas of specific weakness is being introduced into the RSPCA Freedom Food scheme (Main et al., 2002). A health and welfare programme is an appropriate mechanism for ensuring that these benchmarking results lead to husbandry improvements. For example a health plan is now required by most UK farm assurance schemes (Main and Cartledge, 2000).

Enforcement of legislation

On-farm welfare assessment can be used to evaluate compliance with national or EU legislation, although most legislation is currently resource based. For example the requirement to provide a "well drained lying area" does not require assessment of the effects on the animal but merely observation of the lying area itself. However, some legislation does require assessment of the animals. For example, provision of a diet "sufficient to maintain health "requires quantification of the relevant animal-based health measures. Similarly, evaluation of compliance with recommendations concerning welfare-related states, such as pain, fear, distress, also necessitates focus on animal-based measures. Formal welfare assessment techniques have been applied in a legislative framework in some countries during assessment of novel husbandry systems. For example the Swiss Animal Welfare Law (Article 5) ensures that a husbandry system is evaluated by an independent research institute against a wide range of criteria prior to its sale (Fröhlich & Oester, 1999). A standardized methodology could also enable welfare assessments to be included in the compliance criteria of individual farms as well as husbandry systems.

Product information systems

Consumers desire additional information, particularly with regard to meat and meat products (Järvelä 1998a, 1998b), but the myriad claims about food attributes on labels has only increased consumer mistrust of labelling. The information provided for consumers must enable them to make an informed choice about the product they are considering buying. Consumers concerned about animal welfare seek to use their buying power to express their convictions. If products are not clearly represented, possibly due to the higher transactions costs associated with maintaining separate chains, consumers are not given the opportunity to differentiate between "welfare friendly" and conventional products.

Creating a formal standard

The principle task is to convert protocols and methods developed in the Welfare Quality project into an agreed format that can be used by researchers or certification / inspection bodies. This will be achieved via a CEN (*Comité Européen de Normalisation)* workshop. Publication will be established in a CEN Workshop agreement format in order to distribute the welfare assessment and product information systems. In addition to contributions from the welfare scientists, the workshop will be attended by key stakeholders, including industry representatives, retailers, consumer groups. This consultation is a key component of the science-society dialogue. The goal is to produce standards that can be used by third parties such as certification and inspection bodies, enforcement agencies and research groups. This Task requires a secretariat, a workshop chair (nominated by the project management team), working groups (drawing expertise from partners involved in previous sub projects) and funded editors that will draft the standard. The drafting of the standards will be controlled by the working groups with relevant stakeholders. The secretariat will be responsible for the administrative and co-ordination tasks associated with a CEN workshop agreement process (document control, co-ordinating and reporting meetings and liaison with CEN).

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Disseminating the welfare assessment system to potential industry and research users.

Dissemination will be achieved by producing information resources, a database of results, training material and competent trainers. This will ensure that the system is sustainable after the project has been completed.

Training

Training for industry personnel and farm inspectors in the assessment techniques developed by Welfare Quality, is a crucial part of the Welfare Quality project as the practical implementation of these techniques – on farm and in a 'do-able' fashion will be fundamental to the long term success of this programme. 'Training', in the widest sense, will be achieved in the following ways.

1. Material for training course on welfare assessment

Material will be created for a series of short courses for training potential assessors.
A series of training courses will be developed to include short courses for awareness training and longer courses for assessors and advisors. The training programmes will be constructed so that personnel can be certificated under an accreditation scheme working to EN 45013.

2. To train potential tutors that will deliver 'training the trainers' courses

A series of courses will be run to enable personnel to subsequently run their own training courses on welfare assessment. By "training the trainers" the project will achieve maximum dissemination without the cost of training all users.

3. Training potential users of the information on improvement strategies

The aim of this work will be to disseminate the improvement strategies to potential industry users. This will be achieved by producing and collating existing information, generating an information resource, and producing training material and competent tutors for short courses. This will help to ensure that the system is sustainable after the project has been completed.

Technical resources on the welfare assessment system

A resource of information will be made widely available to enable users to interpret the welfare assessment results. A web-based resource will provide technical information of the welfare assessment procedures and their interpretation. Additionally, the information resource will include basic information on the impacts of welfare-improvement strategies on food safety, product quality and environmental aspects.

1. Collation of existing knowledge

Collation of existing knowledge on improvement strategies will create resource which can be used by livestock advisors and farmers. New, and existing, knowledge will be collated to provide a single resource available in a web-based format . The information resource will also include reference to financial, food safety and environmental implications of the strategies. This is a substantial task that will be carried out by a number of subcontractors.

2. Technical information resource on improvement strategies

A resource of information will be created that will enable advisors and farmers to identify appropriate improvement strategies for welfare concerns. This will take the form of a web-based resource with open access, but designed for advisors of livestock farms, and will provide technical information on novel improvements, as well as existing information from other sources. The system will also link to appropriate external references such as legislation and codes of practice.

3. Material for training course on husbandry strategies for each species (Months 48-54)

A series of training courses (in a number of languages) will be developed for each species to describe the improvement strategies.

4. Assessment database containing results of farm visits

It is intended to produce a database system of welfare assessment results for participating users, e.g. certification bodies. A web-based database system will enable monitoring of results in other systems, identification of husbandry system welfare strengths and weaknesses, and benchmarking of individual producers for advisory purposes.

Assessing consumer and 'user' responses to the Welfare Quality schemes

We need to know how consumers and users (farmers, retailers, legislators) respond to the Welfare Quality scheme and to its product information systems (labelling, leaflets, in shop information, web based information, advertising) to maximise the impact of the implementation of the Welfare Quality scheme. This will be achieved in a number of different ways;

1. Marketing experiment

The final label (and other related material) will be developed by a professional design company. Welfare friendly products will be sold in retail stores in each study country. Consumers who purchase these products will be interviewed to establish their perception of, and attitudes to, the welfare friendly label. The results from the national test marketing survey and the consumer focus groups will be compiled as a series of reports that identify the main label attributes of interest to consumers when purchasing welfare friendly products within each study country, emphasising key differences between population sub groups.

2. Assessing the socio-economic impact of the product information system

A key factor affecting the implementation of both the product information system and the husbandry strategies will be the socio-economic context in which they operate. A number of studies will quantify the potential costs and benefits of implementing the Welfare Quality scheme. Implementation of an EU labelling system will be examined by exploring various approaches to labelling, e.g. compulsory or voluntary. In each case, estimations of the socio-economic impact of implementation, compatibility with current WTO rules, and the relative advantages/disadvantages in terms of market competitors will be carried out.

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3. Evaluation of the impact of implementation strategies

The mechanisms for implementation of the welfare assessment and product information systems will be identified, and their potential ability to improve welfare assessed. This will be achieved by considering the perception and attitudes of stockpersons (in all participating countries) towards various implementation strategies, such as raising awareness of individual farm performance, providing advice or training or rewarding good performance. A pilot study on a subset of countries will then evaluate the animal welfare impact of these implementation strategies.

4. Quantifying the views of stakeholders on the acceptability of welfare assessment

To quantify the views of stakeholders on the acceptability of welfare assessment results, this study will generate information on the views of stakeholders concerning the acceptability results gathered during the project. This information will contribute to the debate on welfare concerns and may prove useful for policy makers developing welfare policies for organisations or legislators.

5. Identifying the thresholds for acceptability of each welfare assessment measure

A web-based system developed and linked to an interactive system will provide an immediate and on-going mechanism for assessing the acceptability of welfare assessment results. The views of consumers, producers, retailers and relevant experts will be collated.

Formulation of recommendations for policy makers

To produce recommendations for policy makers on the potential implementation of the animal welfare assessment and product information systems, and the improvement strategies, a collation of the large amount of information produced by the Welfare Quality project will be made. Summary guidance documents will be created (as well as the comprehensive report described below) and links to summary information resources will be made to enable legislators to access quickly key findings and recommendations of the project.

Conferences (such as the one you are at today) will provide legislators with summary information on the findings and potential implications of the WQ project to decision making in European animal trade.

Recommendations for implementation

A comprehensive report will guide policy makers on the implementation of the project deliverables. A series of recommendations will be produced for policy makers on the potential implementation of the animal welfare assessment system, the product information system and improvement strategies. The specific actions to facilitate implementation of the labelling system may focus on scenario analyses of the costs of implementation, and the policy measures needed to sustain the adoption of a higher animal welfare standard and labelling system for producers. Examples of the latter are reform of the CAP, compensatory payments to producers who adopt higher animal welfare systems or decreased price support for producers of beef and milk who produce to lower animal welfare standards.

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Welfare Quality in the Food Service sector - example McDonald's

Reinhard Kaeppel, Quality Assurance, McDonald's Europe

Consumer expectations and McDonald's

The expectations of today's consumers about the food they purchase in the shops or at the restaurants are going beyond eating quality, safety or even nutritional value. They want to be able to find out quickly about the composition of the products, the manufacturing process, where the raw materials come from, about farming practices including how the animals were treated. Of course, such questions are not often top of the mind, but whenever they come up, they must be answered immediately. There must be full transparency about the complete history of the product from farm to table.

Many responsible companies have taken the approach of looking at the triple bottom line, expanding from economic success as the main measure to include social responsibility and environment. Animal Welfare plays an important role in the area of business ethics, plus it does also make economic sense, as it not only is a basis for quality products, but also for sustainable production.

McDonald's certainly takes its social responsibilities very seriously. Being a very visible brand, and a leader in the industry, the drive to do the 'right things' is strong, and this includes the aim to improve animal welfare standards.

McDonald's is very close to the final consumer. We serve over 50 million customers every day in our 31,000 restaurants in 119 countries around the world. In Europe, we have now over 6,000 restaurants in 43 countries, and we serve over 12 million customers daily. Our company was founded 1955 in the USA, and started in Europe in 1971.

The McDonald's quality standard

Our primary goal is to ensure that our customers get safe and high quality food all the times. To achieve this, we are working with proactive quality and food safety systems along the complete chain, applying the principles of risk assessment and management, and are validating the systems and verifying their functioning.

Our quality systems were developed over time, moving further up the chain historically, from simple quality control of the finished products, to more proactive assurance of quality and to application of systems in a proactive and preventative way. At any point of time in the development of our quality standard we are closely linked to the expectations of our final customer, who in the end is the judge of whether everything was done correctly.

The McDonald's Agricultural Assurance Programme (MAAP)

With the desire to include food safety and quality from the beginning of the production cycle, we started our European farm assurance program in 2001. We included the objective to ensure and support sustainable and ethically acceptable agricultural production conditions.

We defined seven policies, which guide our course towards a safe and sustainable agriculture, covering the following areas: environment, agricultural practices, animal welfare, animal nutrition, animal medication, transparency, and genetics.

The policy on animal welfare is as follows:

- To ensure that all animals involved or affected by the production of our products are treated humanely throughout their lives, according to their species specific needs
- To ensure that suppliers meet or exceed the relevant national and EU legislation
- To encourage all levels of the supply chain to continuously improve animal welfare through the exploration and implementation of advances in animal welfare science, rearing and husbandry.
- To promote the positive welfare of animals by having regard to, and providing for, their needs in accordance with the scientifically based Five Freedoms

A number of standards define details for production throughout the agricultural supply chain. For food animals, the scope is from feed mill and breeder animals, via husbandry, including all transport.
The standards are all structured in the same way, with individual requirements linked to either legislation, McDonald's specific or future requirements. Applying and matching these standards is the mandatory way to reach the objectives of our policies. It is envisaged that the percentage of our raw materials complying with the MAAP standards will increase over time, and we measure this compliance continuously. We are also revising our standards regularly to ensure continuous improvement, and to have the possibility to raise our requirements, for example in the area of animal welfare.

We are not trying to create our own quality label, MAAP is our internal reference. We are using existing assurance schemes, which are compatible with MAAP, and prefer schemes with a higher level of compliance.

The McDonald's supply chain

As a restaurant company, not owning manufacturing of products, nor any agricultural production, we are at the end of the food chain, which is furthest away from primary production. It is via the unique structure of our supply chain that we still can have influence and impact on agricultural standards, including those for animal welfare.

McDonald's supply chain model was developed in the early days of our company. The basic foundation is to work in partnership with our suppliers, and to keep the supply chain independent - McDonald's does not own any part of our supply chain system. Our business relationships with our suppliers are based upon mutual trust, openness, and shared risks and rewards. We involve our suppliers in our business, all the way to customer delivery. A partnership gives us both the greatest incentives to apply the highest standards.

Our Corporate Social Responsibility approach addresses many different areas including the local communities in which our restaurants are located, our people, and the environment. A significant part of this approach is to address the way we work with our suppliers to incorporate socially responsible practices into their operations and to build capabilities for continuous improvement. We engage with our suppliers on a broad range of issues, and animal welfare is one of the very important areas.

Animal welfare at McDonald's

McDonald's cares about the humane treatment of animals. We recognise that our responsibility as a purchaser of food products includes working with our suppliers to ensure good animal handling practices.

Our commitment to animal welfare is global and governed by the McDonald's Animal Welfare Guiding Principles, which are:

- safety: food safety is McDonald's number one priority.
- quality: treating animals with care and respect is an integral part of our quality systems, which makes good business sense.
- animal treatment: we support the view that animals should be free from cruelty, abuse and neglect while embracing the proper treatment of animals and addressing animal welfare issues.
- partnership: we work continuously with our suppliers to audit animal welfare practices, ensuring compliance and continuous improvement.
- leadership: working with suppliers and industry experts to advance animal welfare practices and technology.
- performance measurement: setting annual performance objectives, to ensure that purchasing strategy is aligned.
- communication: of process, programs, plans and progress surrounding animal welfare.

We have established a program of technical standards, which include the MAAP standards for the farms, as well as standards for catching, transport and handling before and during slaughter. These standards are audited to ensure implementation and compliance. The measurements are based on animal behaviour research.

Our chicken welfare standards at slaughter have been established for several years. These cover the complete handling process of animals - from lairage, unloading, hanging, stunning up to bleeding - making sure our suppliers do everything to limit any abuse to the animals.
In 2004, we revised these standards to include Key Welfare Indicators (KWI's) in order to have reliable animal based indicators. We would prefer KWIs for measuring welfare quality over production based requirements, as it seems to be the better tool to evaluate welfare quality related to farm management, catching and transportation.

Where we want to go

Our clear goal is to make further progress in improving animal welfare standards, and their application, wherever we have direct influence via our supply chain.

Listening to the experts in this field, we try to learn and understand better what is necessary and 'do-able'. We are open to share our work, and to engage in discussion to find further ways to improve the standards, as well the information the consumers need and wish to have.

Welfare Quality in relation to producers

Per-Åke Sahlberg, President European Dairy Farmers

I am very pleased to have the opportunity to speak about the Farmers perspective on the subject of Welfare Quality. It is particularly interesting to me, as a farmer – as an owner of animals who is responsible for the on farm conditions where the animals live and grow up. It is farmers, like myself, who have very close contact with, feed, treat and handle the animals for their entire lives from birth to death.

It is from my 35 years of experience as milk producer that I give you my perspective on the development of animal welfare. Additionally I bring my experience as President of the European Dairy Farmers and President of Swedish Precision Farming Project, former member of the Faculty Board of Swedish Agricultural University, and a board member of The Swedish Veterinary Institute and Swedish Farmers Union Research Committee.

For more than 5000 years, farmers have domesticated and kept animals for producing food or as food, work and draught animals. This represents more than 150 farmer-generations of experience in handling, caretaking and close contact with animals.
The domesticated animals have been essential for the survival of human kind. During all these 150 generations a great knowledge has been developed as to how different animals behave and how to treat them to achieve the best outcome for both man and animal. Deep in the farmers consciousness there is knowledge of how to treat the animals well to achieve the best results. If you treat an animal poorly, it may either 'kick back' physically, or productivity goes down or the animal becomes ill and may die. One of the fundamental factors for being a successful farmer is to treat animals well in response to the individual animals natural needs.

The problem is that the consumers demand for cheap food has created a pressure to rationalise and develop more efficient and competitive production systems. This pressure, exerted by consumers, retailers and politicians, has, at times, become so intense that it has lead to production systems that have gone beyond a sense of animal welfare. The result may be illness among the animals that has been treated with, for instance antibiotics.

Last week I saw a line in one of our newspapers:

"*The demand of cheap chicken gave us the Pandemic- disease"*

How and why has this happened?

In society today, many people have become 'distanced' from the production reality. Knowledge of the 'natural behaviour' of farm animals has been forgotten by the majority of the members of society and replaced with a 'fairy tale' view. In the last two or three generations, the majority of children have lost contact with farming, which means most of the population has never been on a farm, been in close contact or ever seen an animal in the natural production environment.

The basic knowledge of animals natural behaviour in farm society has been replaced by a picture of the animals that is presented in Disney films and other fairy tales where animals act as if they are human beings in the shape of an animal. People today believe that animals have the same needs for good welfare conditions as human beings, which is completely wrong.

It is from the 99% of people not directly (unlike farmers) involved in agriculture that the consumers, retailers, decision maker, politicians, researchers and developers of production systems, vegans, animal rights people and Animal Welfare Scientists are coming!!!!

Therefore it is very good that the Welfare Quality project has focused on the development of understanding of individual animals basic demands and from the animal perspective.
And a good advice is to find good cattlemen and listen to them and their 150 generations of experience and knowledge about animal demand and behaviour.

Treat the animal based on their animal needs!
In the Welfare Quality project you work from the perspective of "field to fork", and I think this is interesting. But there could be a complication: How do you balance demands from the consumer with the realities of production on the farm if the consumer does not formulate a demand that corresponds to the animal's perspective of animal welfare?

How can you get consensus in the whole chain from consumer, via retailer, to industry and the farmer about the implications of good animal welfare when the attitudes and different perspectives must be pieced together into a 'compromise'?

The politician's willingness to show engagement about Animal Welfare in order to get more votes in the elections results in laws and regulations based on populist attitudes to animal welfare rather than realistic demands, and this is a further complication. Can science inform the political process to balance this populist bias?

In the " field to fork -chain" major changes have occurred during the last twenty years. The power and influence on what people consumes has been concentrated dramatically from local consumption, to global consumption and to retailer driven consumption.

Technical developments in conservation and cooling systems have opened up livestock products for transportation and distribution. The transport system allows livestock to be produced anywhere on the globe and transported cheaply to the consumers on any other place on the globe. Free trade negotiations open the borders and support a free flow of livestock around the whole world. Different attitudes to animal welfare cannot be protected within a region by border protection any more, and this means that it is up to the informed consumer to choose 'good' animal products in the shop. But does the consumer act rationally? The consumer takes two forms: As member of the society he wants the best for animals, and safe food, and is prepared to pay more for it. However, as consumer, he buys the cheapest if it is not dangerous to his/her health.

Retailer now have the real influence in the food chain by concentrating to big worldwide companies and dominating the regional markets by cooperation. By introducing Private Labels and establishing Low Price Chains they set pressure on the producers and factories. If you cannot deliver to retailer demands some other producer is always ready to do it.
In Sweden 95% of the livestock goes through 3 (yes, -only 3!) different retailers

In figures this means that in Europe, with 3.2 million farmers and 160 million consumers - almost all of the livestock products delivered from farmers to consumers go through the 'needle's eye' of only 110 buying desks.

Those 110 buying desks have the real power in the chain from fork to field.
The people who operate those 'buying desks' are the key persons that must be convinced about what constitutes good animal welfare, and they, and the company management (and the boards behind them) should also be ready to take the economic responsibility to fulfil the demands of good animal welfare in the products they buy and present for the consumer.

This is one key point for the Welfare Quality project if you want to achieve real implementation of your results.

In order to develop good animal welfare, it is absolutely necessary to have acceptance from all involved in the different parts of the chain, and specially from the producers who have to make the investments in management and production facilities. The consumers demand on production must correspond to the producer's apprehension of animal welfare and to an adequate and safe labour situation. He who takes an economic risk and it does not work out - ends up leaving production.

After this overview of the partners of the food chain I come to some possible development areas which may help to understand what will be needed to implement Welfare Quality.

- It is necessary to define criteria for good animal health, and these must be defined from both a scientific and an animal perspective.

- These criteria must be linked to the animals physical, psychological and emotional status.

- These criteria must be accepted and applied in the whole of society, the media, and by retailers and producers.

- These criteria must balance the animal need and the herdsman's personal safety when handling the animals.

In order to achieve these criteria; reliable, scientific based measure systems will be needed in order to observe health-status. At least the following functions must be a part of the measuring system.

- Measurement systems must be implemented in the ordinary management systems on the farm and in slaughterhouse and they should be based on real 'objective' criteria instead of on personal judgement, (which create the potential for 'inequalities' related to judgements based on personal opinion).

- Develop measurable indicators (chemical, hormonal etc .welfare substances) in blood, urine milk or other body fluids that can be recorded automatically in the parlour during milking.

- Develop observation systems, video observation, step counter or similar observations with automatic evaluation of the animal activity to identify stress or abnormal behaviours.

- Use production, veterinary treatment data or fertility data from production control or the management systems for identify divergent signs on stress.
- Investigate the relation between man and animal to identify factors in the herdman's behaviour that influences the animal. Animals behave in different ways in contact with different people.

- All these observations must be linked together in the ordinary farm management system so the producer can get feedback and indications on the Welfare Status in the herd so he can make immediate and running observations and make changes for improvement of the welfare status in the herd.

- The management systems for animal welfare must be transparent for consumers, retailers and other authorities in order to minimise bureaucracy and inspections.

By getting society and all actors involved in the food chain to understand what are 'real' and valid scientifically based animal measures which can ensure good food safety and animal welfare, I am convinced that it is possible to create a combination of effective and competitive livestock production with the needs of the animals, society and Welfare Quality.

Consumer attitudes to animal welfare: A summary of the main findings of the Eurobarometer survey

Factors influencing attitudes to animal welfare

Document provided by Andrea Gavinelli

- Visits to farms appear to heighten awareness of and concern for animal welfare. The majority of those surveyed had visited a farm that rears animals at least once, with the highest proportion being in Scandinavia (90%) and the lowest in Portugal (29%) and Greece (34%).

- There is a strong link between the frequency of farm visits and acceptance of price increase on food produced from farmed animals. Of the respondents who said they were willing to accept a price increase of at least 25% for animal welfare reasons, 54% had visited a farm at least 3 times.

- People who hardly ever or never eat meat tended to be more critical of animal welfare standards.

Views on the protection of farmed animals, by species

- Laying hens: On average, 58% of respondents rated the welfare of laying hens as "fairly bad" or "very bad". The Dutch and Danish (77%) were the most critical, followed by the Germans and Belgians (73%). At the other end of the scale, over 2/3 of Maltese had a positive view of the protection of laying hens.

- Dairy Cows: In 21 out of 25 Member States, the majority of respondents had a positive view of the welfare and protection of dairy cows. Optimism was highest in Finland (85%), Netherlands (83%) and Sweden (82%) and lowest in Greece (42%), Latvia (43%), Portugal (46%) and Slovakia (48%).

- Pigs: Views on the level of welfare and protection for pigs were mixed. In 10 Member States, pigs were generally thought to be well protected, with the most positive responses in Malta (62%) and Finland (61%). On the other hand, over 60% of those surveyed in Denmark and Slovakia had a negative view of the welfare of pigs.

Species to be protected as a priority

- When asked which animals should be given priority in improving welfare conditions, respondents gave an undisputed first place to laying hens (44%), followed by broiler chickens (42%).

- Sweden (73%), Netherlands (66%), Germany (65%) and Belgium (62%) were most vocal on the need to improve the welfare conditions of laying hens.

- Pigs (28%) were also highly ranked as animals that need further protection. Denmark (60%) was the strongest advocate for more protection for pigs.

- Dairy cows (17%) were in fifth place, and calves (14%) in sixth place, which confirmed that bovine animals are perceived to have better rearing conditions, as was found earlier in the survey.

- Sheep (6%), Rabbits (7%) and farmed fish (8%) ranked the lowest.

Purchasing behaviour and the welfare of farmed animals

- A slight majority of EU citizens (52%) said that they did not take animal welfare considerations into account when buying meat. However, there were large disparities between Member States on this issue.

- In all of the new Member States, except for Cyprus (38%), the majority said that animal welfare did not influence their purchasing behaviour. The figure was more than two thirds in the Czech Republic (74%), Slovakia (73%), Estonia (69%) and Poland (68%).

- At the other end of the scale, 67% of Swedes, 66% of Greeks and 64% of Greeks said that they did take animal welfare into account when buying meat.

- With regard to eggs, almost 4 in 10 respondents said that they buy eggs from free range or outdoor reared hens. Swedish (63%), Luxembourg (61%) and UK (61%) consumers are most likely to take production into account when buying eggs, according to the survey. Those least likely to are in Spain and Slovakia (12%).

- Over three quarters of those surveyed believe that they can influence animal welfare conditions by their purchasing behaviour. This opinion was strongest in Sweden (94%) and Cyprus (90%), whereas it is less certain in Lithuania (56%) and Estonia (57%) and Portugal (62%).

- However, 51% said that they find it difficult to identify products sourced from animal welfare friendly production systems. This figure was higher in the new Member States, exceeding 80% in Slovakia, the Czech Republic and Poland.

Willingness to pay more for better animal protection

- A majority of EU citizens (57%) claim to be willing to pay more for eggs produced in good animal welfare conditions.

- A quarter of respondents said they would be willing to accept a 5% price increase on eggs if there was better animal protection. The share of citizens willing to accept a price increase of 25% or more was 11%.

- The Scandinavians and Dutch (all over 70%) were most willing to accept price increases on eggs produced with good animal welfare.

- The majority of Hungarians (57%), Slovaks (57%) and Lithuanians (53%) were not willing to pay extra for eggs from an animal welfare friendly source.

Perceptions of animal welfare policy in the EU, compared to other countries

- A majority of EU citizens (55%) believe that insufficient importance is given to animal welfare in national agriculture policies. This view was strongest in Greece (73%), Czech Republic (65%) and Slovenia (65%), but less widely held in Finland (54%), Netherlands (43%) and Sweden (41%).

- Only 8% believe that animal welfare is given too much weight in national policies.

- Almost half of those surveyed deemed the protection of animals in the EU to be better than in other parts of the world. This belief was strongest in Belgium (61%), Germany (61%) and Finland (60%).

COMMUNICATION FROM THE COMMISSION
TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

on Animal Welfare Legislation on farmed animals in Third Countries and the Implications for the EU

Document provided by Andrea Gavinelli

I. OVERVIEW

1 There is a growing appreciation of the insistence of consumers that animals used in food production should be well treated. In response, the body of EU legislation on animal welfare has increased steadily in recent years. This trend is likely to accelerate, especially in the light of the Protocol to the Treaty of Amsterdam which raised the ambitions of all EU institutions to do more to raise welfare standards. There is also a growing appreciation that high welfare standards have both a direct and indirect impact on food safety and quality and that regulatory and support systems in agriculture must adapt accordingly.

2 However, this process has also resulted in costs to producers. It is clear that any requirement implying investments and changes to existing production systems has an impact on production costs. However, it is difficult to quantify it in general terms. In a Communication on the welfare of pigs[22], the Commission estimated the costs arising from the abolition of individual sow stalls between € 0.006 to € 0.02 per kilogramme pig carcase, depending on the length of transitional periods. A far more significant increase of production costs is expected in the case of egg production. A study presented by animal welfare organisations[23] suggests an increase of 8 per cent from 2003 (more space in battery cages) and further 16 per cent by 2012 (ban on battery cages). The Commission will have a closer look to these economic consequences before opening the debate on a revision of the laying hen Directive, foreseen for 2007.

3 Costs implied by higher welfare requirements should be recovered, in part at least, due to the premium placed on high standards by consumers. There is a concern, nonetheless, that any costs where are not directly recovered could place EU producers at a competitive disadvantage relative to imported products from third countries. This in turn could also undermine the higher standards in question. Arising from these dual concerns, Member States asked the Commission to carry out a communication on comparable animal welfare standards in third countries and to look at the implications arising from disparities in these standards.

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22 Communication from the Commission to the Council and the European Parliament on the welfare of intensively kept pigs in particularly taking into account the welfare of sows reared in varying degrees of confinement and in groups, COM(2001) 20 final, 16.01.2001, http://europa.eu.int/eur-lex/en/com/pdf/2001/com2001_0020en01.pdf

23 "Hardboiled reality – animal welfare-friendly egg production in a global market", 2001, presented by RSPCA (Royal Society for the Prevention of Cruelty to Animals) and Eurogroup for Animal Welfare

4 The resulting study is largely inconclusive. There is no international consensus on the role of animal welfare and the measures in place in the EU cannot be readily compared with standards in third countries. One of the reasons is the difficulty to define precisely the effects of animal welfare on animal health and food safety. The approach to animal welfare science is at present under revision world wide in particular to evaluate how ethical and cultural factors are determining its understanding[24]. Nonetheless, it is clear that there is a growing trend towards improved standards, led by consumer demands in this direction. This consumer led approach can only be encouraged. The question of the competitive disadvantages arising from any disparity in measures is also complex. The evidence that is available suggests that competitive distortions are most likely to arise in the more intensive forms of agricultural production, notably the pig and poultry sectors.

5 The Commission considers that it is entirely legitimate to pursue these concerns. Competitive distortions – whether to the advantage or disadvantage of EU producers - arising from differences in standards have the clear potential to undermine higher animal welfare standards. The means to address these distortions are nonetheless not immediately evident. The Commission considers that they can be addressed through a number of channels:

- Through the normal market mechanisms as consumers and retailers attach an ever increasing premium to higher standards and this works its way through the price chain.
- In the context of dialogue at the international level as the EU engages its trade partners on how to afford greater recognition to animal welfare in a constructive and non-trade distorting manner. A promising prospect for furthering this process appears to lie with the OIE and the Council of Europe.
- The EU also needs to continue its bilateral efforts with individual trading partners to promote animal welfare standards. This is especially the case in relation to the veterinary and phytosanitary provisions of bilateral trade arrangements. This process could serve over time to improve the prospects for parallel efforts at the multilateral level.
- Labelling regimes, whether voluntary or mandatory, also have an important role to play. Consumers are increasingly insistent on higher standards and ways have to be found to provide them with the required information on such standards. The egg-labelling provisions recently put in place are a positive step in this direction which could perhaps be followed in other fields. Further improvements with a view to secure international recognition seem to be necessary.

[24] See: D. Fraser – Farm Animal Production: Changing agriculture in a changing culture – Journal of applied Animal Welfare Science, 4(3), 2001, p. 175-190

– The focus of EU agricultural policy is increasingly on quality rather than quantity. This quality concept embraces a range of priorities including improved food safety, environmental protection, rural development, the preservation of the landscape and animal welfare. Traditional price mechanisms do not always allow for important considerations like animal welfare to be properly recognised in the prices paid to producers. If it is to receive the priority demanded by citizens, new mechanisms need to be explored to address this deficiency.

6 This communication does not come down decisively in favour of any single one of the above possibilities. Instead, efforts must concentrate on all these fronts. This is entirely in keeping with the diverse nature of measures to promote animal welfare. It also reflects the intention of the Protocol to the Treaty on Animal Welfare that since 1999 requires the European Institutions and the Member States to take full account of animal welfare when drafting and applying the Community's policies on agriculture, transport, internal market and research. This Protocol defines animals as "sentient beings" (i.e. capable of feeling pain) - a significant landmark.

II. BACKGROUND

MANDATE

7 When the Council of Ministers discussed Directive 98/58/EC on farm animal protection25, the Member States highlighted the issue of animal welfare law in the Union's third-country trading partners. Accordingly Article 8 of that Directive required the Commission to send the Council a communication comparing legislation in other countries with that in the EU and exploring the implications for EU law and for competition. This is that communication.

8 The Union's own animal welfare legislation goes back several decades already, beginning with a 1974 Directive on the stunning of animals before slaughter[26].

9 From 1986 onwards Directives on pigs, calves and laying hens and on animal transport were adopted (and later refined in the light of new scientific data). A Directive banning the keeping of pregnant sows in segregation was adopted in June 2001.

10 A 1998 Regulation made export refunds for live cattle conditional on compliance with Community law on animal protection during transport.

11 Directive 1999/74/EC lays down minimum standards for the protection of laying hens, and a Council Regulation in December 2000 introduced a mandatory labelling system for eggs based on these standards (a system also applicable to imported eggs).

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25 Council Directive 98/58/EC of 20.7.1998 concerning the protection of animals kept for farming purposes; OJ L 221, 8.8.1998, p. 23-27

26 For a list of the EU's main animal welfare legislation see Appendix 5

12 In order to make comparisons with the situation in non-member countries, the Commission's Directorate-General for Health and Consumer Protection (SANCO) collected a considerable body of data from and about these countries. Section I summarises what this survey revealed. Section II draws conclusions on the implications for future action. There are also six appendices containing a summary of the data received and other background information.

MAIN FINDINGS OF SURVEY OF THIRD-COUNTRY LEGISLATION

13 SANCO contacted the main countries supplying the Union with live animals and animal products and requested information on their farm animal welfare legislation. It received replies from 73 countries (the most relevant are summarised in Appendix 1). The variable quality of the information supplied and the diversity of conditions in the countries concerned makes it difficult to draw concrete conclusions. Nonetheless, the following broad observations can be made:

NO GENERALLY RECOGNISED, SPECIFIC STANDARDS AT INTERNATIONAL LEVEL

14 The bulk of the information sent concerned cruelty to animals in general. Comparatively little referred specifically to *farm* animal welfare (the focus of this communication).

15 In the vast majority of countries, individual acts of cruelty to animals are deemed ethically unacceptable (though to varying degrees) and may even be punishable by law. And the law in many cases treats animals as sentient beings.

16 However, there is little evidence of a convergence of legislation worldwide on the basis of identical or similar principles. There is also a lack of shared scientific standards. The definition of farm animal protection varies from country to country according to the cultural, scientific, religious, economic and political context.

17 In the absence of shared standards, most of the legislation reported refers to the increasingly widely disseminated "five freedoms". Defined in 1979 by the UK Agriculture Ministry's advisory body, the Farm Animal Welfare Council, these are:

- proper and sufficient food and water,
- adequate shelter,
- opportunity to display normal patterns of behaviour,
- minimisation of pain or distress during handling,
- protection from disease.

SIGNIFICANT PROGRESS IN LAST DECADE, PARTICULARLY IN NON-EU EUROPE AND SOME OECD COUNTRIES

18 Media campaigns and lobbying by an ever-increasing number of NGOs have heightened public awareness in many (mainly developed) countries, resulting in considerable legislative progress especially in the last five years.

19 The EU enlargement process is motivating the candidate countries to adopt new legislation at an accelerated rate; likewise increased public awareness in those countries is causing their governments to move more quickly toward adoption of mandatory EU animal welfare standards. Also, the participation of the same countries in Council of Europe initiatives is facilitating the harmonisation of animal welfare legislation. Specifically the Council of Europe is continuing to develop five Conventions (the earliest dating back to 1968) on various aspects of animal welfare, in particular during international transportation, on the farm and at slaughter (see Appendix 2).

TWO TYPES OF ANIMAL WELFARE CODES: BINDING AND SELF-IMPOSED

20 Animal welfare measures in the different countries tended to take either of two forms: mandatory provisions or voluntary (i.e. self-imposed) codes of conduct (see Appendix 1).

21 Countries in the first group generally have binding national rules adopted in implementation of an umbrella "animal welfare" or "animal protection" Act. (Most countries of the (British) Commonwealth, for example, fall into this category.) Such Acts usually include very general provisions on the care and treatment of animals, including pets, and animals kept (besides food production) for scientific purposes or for their pelts or for extraction of other products. They do not usually contain specific provisions on farming methods (e.g. stocking densities), but they do usually provide the legal framework or bases for more specific regulations and recommendations in that area.

22 The emphasis in the second category of countries (the majority) is on private, voluntary initiatives rather than public, regulatory framework, with a wide variety of codes and guidelines being self-imposed by producers. Many of these are designed to ensure consumer confidence about the provenance of livestock products. They are often developed in collaboration with competent public authorities or with NGOs (especially consumer associations). They commonly take the form of labelling systems subject to inspection for certification of conformity.

23 Worldwide marketing strategies confirm that producers and retailers today are ready to apply new criteria so as to provide consumers with extra value. The perception is that "changes in the market will see fewer people going to the supermarket for the cheapest cuts of meat and instead being prepared to pay higher prices for sustainable produced quality products"[27]. A clear example of this evolution is the recent inclusion of animal welfare requirements in many existing quality assurance schemes for poultry meat. This reflects the perception by consumers that they are choosing a healthier and safer product. Conversely, producers are particularly fearful of loss of market share if products acquire a poor safety or welfare image. These trends are especially strong in the EU where there is a growing consumer insistence on high animal welfare standards and on high quality standards generally.

27 Financial Times: "NZ venison producers find a ready market for safe meat" by T. Hall (29.3.2001)

24 In an interesting example of this trend, the US Department of Agriculture recently announced plans to issue stricter slaughterhouse guidelines following pressure from animal rights groups and from a world-wide food company. Calling for zero tolerance for animal welfare violations at slaughterhouses, the company had said, *"We believe that people eating our products are assuming the animals … are treated in a humane manner."* In a letter to the company, the US Department of Agriculture said that the proposed rules would meet the fundamental issues that it had raised[28].

EU LEGISLATIVE INITIATIVES HAVE AN INSPIRING EFFECT ON OUR TRADING PARTNERS

25 The level of animal welfare legislation in the EU compares well with third countries even if compliance with this legislation is often lacking[29]. Moreover, this legislation has served as an example for many other countries to follow. One example of how EU law can stimulate changes, with better animal welfare being achieved by consensus at international level, is the action plan drawn up in 2000 after discussions with the Chief Veterinary Officers of the candidate countries. This plan foresees the enforcement in the short term of key requirements of EU law on animal transportation, notably as regards horses. Soon afterwards the Slovenian authorities announced that they were applying the plan. In other candidate countries the transposition is under preparation; Lithuania and Hungary have already notified the application of equivalent rules.

26 The candidate countries' progress with adoption of the "acquis communautaire" is in turn enhancing Council of Europe activity in the field of animal protection: ongoing work in Strasbourg on several animal welfare issues is encouraging a Europe-wide convergence on uniform principles.

27 Another example of EU legislation inspiring animal welfare standards elsewhere is in the framework of the OIE (for this "World Animal Health Organisation" see Appendix 4). Its recommendations on protecting animals during transport were certainly based on current Community legislation as well as on Council of Europe initiatives. Also, the recent inclusion of animal welfare in its work plan was in response to the evolution of animal welfare issues in the last few years all over the world but particularly in the EU. And the OIE's work on animal welfare standards will surely be cross-fertilised by ongoing discussions at EU level and by negotiating activity in this area with the candidate countries. The EU has also been the most supportive of including animal welfare in the agenda of the World Trade Organisation where it is not currently recognised as a legitimate concern.

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[28] Animal Farm N° 487 of 22.2.2002: Dr Bernard Vallat: Opening up the OIE. 9 CFR Ch. III (1-1-01 Edition) Part 313 – Humane Slaughter of Livestock. On the Web: http://www.access.gpo.gov/nara/cfr/index.html#page 1

[29] Shortcomings in enforcement of the legislation by national authorities are, for example, highlighted in a report on the experience acquired by Member States with the application of the Directive on animal transport, presented by the Commission to the Council in January 2001, COM(2000) 809 final, 6.12.2000, http://europa.eu.int/comm/food/fs/aw/aw_legislation/transport/report_en.pdf

28 Regarding the situation in developing countries, an important increase of livestock production is to be expected in the coming decades, which will require much more intensive forms of agriculture. The Community is engaged to accompany this evolution by various development programmes aiming at sustainability of this process. Beside environmental concerns regarding the use of natural resources, animal welfare issues related to intensive farming, industrial slaughter and transport conditions will become increasingly important in international development support.

29 In the framework of the international Initiative "Livestock, Environment and Development" – LEAD[30] - the Commission jointly with UK is carrying out a study in Asia and Latin America to equip policy- and decision-makers to apply improved knowledge for environmentally sustainable and equitable forms of livestock development including animal welfare issues. Furthermore, there is a broad consensus that high priority should be given to animal welfare and that development aid should not support the creation or promotion of farming systems that have negative effects on it.

III. IMPLICATIONS, FUTURE ACTION

30 Where should EU action in the area of animal welfare go from here? In this section we will try to outline possible EU strategies, firstly as regards relations with the outside world[31], then in the inter-related areas of research[32] and labelling and lastly direct payments to producers as envisaged in the proposal for the reform of the common agricultural policy (CAP).

WHY ANIMAL WELFARE IS AN INTEGRATED ELEMENT OF EU'S FOOD SAFETY POLICY

31 Research indicates that animals that are well treated and able to behave naturally are healthier than animals treated badly. An accumulating body of knowledge (dating back to the 1970s) shows how continuous physical stress on animals (e.g. from their housing conditions) affects not just their behaviour but their physiology, and can result in pre-pathological or even pathological states. And studies are ongoing to develop and standardise methodologies for scientifically measuring animal welfare[33].

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30 The LEAD (Livestock, Environment And Development) Initiative is an inter-institutional project with the secretariat in FAO. This initiative is supported by the World Bank, the European Union (EU), the Ministère des Affaires Etrangères (France), German Federal Ministry for Economic Cooperation and Development via GTZ (Germany), the Department for International Development (United Kingdom), the US Agency for International Development (USA), the International Development Agency (Denmark), the Swiss Agency for Development and Cooperation (Switzerland), and the Food and Agriculture Organization of the United Nations (FAO). Its main goals are to increase awareness, knowledge and understanding of livestock and environment interactions; to identify appropriate options for livestock and environment management at regional and national level and to convey livestock and environment concepts into government and donor policies and projects

31 Bilateral agreements and multilateral agreements including WTO, OIE and CoE

32 Links between animal welfare, animal health and food safety

33 COST Action 846 :"Measuring and Monitoring Farm Animal Welfare" Dr H.J. Blokhuis - Institute for Animal Science and Health (ID-Lelystad) – Netherlands

32 There are currently various scientific initiatives focussing on animal welfare as an active constituent of animal health, or, more accurately, on extreme farming conditions (associated with more intensive production) as a source of animal illness. One of the most extreme cases is that of poultry: the faster growth of broiler chickens means a higher metabolic rate and higher oxygen requirement, seemingly in excess of the birds' respiratory and circulatory capacity. The result is increased mortality from ascites (fluid in the abdomen) and other related problems[34].

33 Meantime research has extended to the link between various animal welfare factors and the quality of products, for example, the effect of transport and slaughterhouse conditions on the quality of meat. The mechanism whereby transport stress impacts the health of animals is very complex. Commonly referred to as "shipping fever syndrome", such stress can lead to depression of the immune system during and after transport. This means increased susceptibility to infection, through the lowering of the infection threshold (i.e. the quantity of pathogen required to cause illness).

34 Various pathogens (microbes, virus, parasite) that do not lead to illness under good husbandry conditions can become more aggressive, proliferating and causing disease, in animals after transport. Transport stress can reactivate pathogenic agents present in latent (symptomless) carrier animals and provoke their excretion, leading to clinical illness in other animals. Again this means increased morbidity and mortality rates. According to a recent opinion by SCAHAW (the EU's Scientific Committee on Animal Health and Animal Welfare), transport stress may enhance both level and duration of pathogen shedding in sub-clinically infected animals, thereby rendering those animals more infectious.

35 While further work is needed in this area, all over the world more and more retailers are recognising animal welfare as a constituent aspect of product image and quality. This in turn creates a need for reliable systems for on-farm monitoring of animal welfare status and risks aimed at providing guarantees on production conditions.

36 So there is increasingly wide acceptance of the link between animal welfare and animal health, and even, by extension, between animal welfare and food safety and food quality.

37 In its White Paper on Food Safety[35], the European Commission advocates a "comprehensive, integrated approach" to food safety, covering not just the entire food chain ("farm to table") but extending also to the EU's external interface and its involvement in international fora. (The Member States have indicated their support for this approach.) The integration of animal welfare in food safety policy and its promotion at international level would seem to be good examples of this approach in action. It would also be consistent with the requirement of the Protocol to the Treaty which requires full account to be taken of animal welfare in relevant EU policies.

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[34] Report of the Scientific Committee on Animal Health and Animal Welfare on the welfare of chickens kept for the production of meat (2000)

[35] COM(1999) 719 final, 12.1.2000, http://europa.eu.int/comm/dgs/health_consumer/library/pub/ pub06_en.pdf

WORKING TOWARD INTERNATIONAL CONSENSUS

THE ISSUES - AS REFLECTED IN RELATIONS WITH THE WTO

38 The EU fully subscribes to the view that animal welfare provisions must not be used for protectionist purposes. However, this should not serve as an obstacle to greater efforts at the international level to win recognition for the EU's standards in this area and to ensure that they are compatible with trade obligations. The Agreements of the World Trade Organisation - most relevantly here the GATT ("General Agreement on Traiffs and Trade"), AoA ("Agreement on Agriculture"), TBT ("Technical Barriers to Trade") and SPS ("Sanitary and Phytosanitary Measures") - make it illegal to resort to measures that unnecessarily restrict trade or discriminate among members or between imported and domestic products. As there are diverging views on the extent to which animal welfare constitutes a legitimate policy objective and also taking into account the absence of interpretative guidance by dispute settlements, unilateral application by the EU of its animal welfare standards as condition for the importation of products from third countries[36] could risk being challenged by the EU's trading partners.

39 By way of highlighting the issue, the EU submitted to the June 2000 special session of the WTO Committee on Agriculture a paper on "Animal welfare and trade in agriculture" (reproduced in Appendix 6)[37]. The ensuing discussion revealed that a number of non-EU countries around the world, rather than associating the measures taken by the Union with social concerns, fear them as a source of major trade barriers in the future. In addition there is a perception in some quarters that this is just an issue for "rich countries".

40 Despite such reticence, the Doha 2001 conclusions (unlike the discussions in Seattle) did see some progress, with non-trade concerns, including animal welfare, being included on the agenda for future agriculture negotiations.

41 But further progress is needed to ensure general recognition of such non-trade concerns as globalisation proceeds. And there are already signs of a shift in attitudes from negative to neutral. The growing concern of consumers and retailers about high animal welfare standards is making its impact increasingly felt not only in the EU but in third countries. The focus of the Commission's efforts, therefore, should be on building on this trend among WTO members towards the EU position.

42 There are two reasons why this strategy should be pursued: on purely ethical grounds, and in recognition of the higher costs that EU standards entail for both our producers and consumers.

43 Achieving consensus through the WTO is, however, inherently difficult due to ethical, cultural, economic and political divergences (as shown by the data collected for this communication). While pursuing direct progress via the WTO agriculture negotiations, therefore, it is equally important to pursue other avenues in parallel.

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[36] Relevant data on trade flows in animal and animal products are set out in Appendix 3

[37] See also the following WTO documents: EU: comprehensive negotiating proposal G/AG/NG/W/90; EU: food quality: improvement of market access opportunities G/AG/NG/W/18

44 These parallel activities could take various forms - for example, promoting non-trade concerns in international fora, organising workshops and conferences - and should have two overriding goals: establishing the link between animal health, animal welfare and food safety (this issue is dealt with in a later section) and arriving at multilateral animal welfare standards, which clearly could serve as a reference in the WTO context at a later stage.

MULTILATERAL ANIMAL WELFARE STANDARDS: AN INTERNATIONAL FRAMEWORK

45 There are two ways in which common welfare standards could be arrived at: under the aegis of an appropriate international organisation, or through the conclusion of bilateral or multilateral agreements.

ESTABLISHING STANDARDS WITHIN THE FRAMEWORK OF OIE

46 The OIE (or World Animal Health Organisation - see Appendix 4) has played a key role in international trade negotiations and veterinary agreements since its creation in Paris in 1924. Its Animal Health Code, developed from the 1960s onward on a voluntary basis, by 1995 had become an international reference on animal health that is recognised in the SPS Agreement. The Codex Alimentarius - a food code jointly created by the FAO and WHO in 1962 - plays a similar role in the area of food safety.

47 While it is generally agreed that there is no equivalent reference body specifically for animal welfare, the OIE Code does include a number of recommendations on animal transport. (Several third countries referred to these in their replies to SANCO.) Furthermore the OIE International Committee adopted a resolution in 2001 including animal welfare in its work-plan for the next five years. An ad hoc working group of animal welfare experts met for the first time in April 2002 to discuss the new OIE responsibility. The group comprised veterinary and animal welfare experts representing a broad range of countries and cultures. The Commission is represented in this group. The group prepared a set of detailed recommendations considered at the OIE's annual General Session of Member Countries in May 2002 (see Appendix 4). The recommendations address the possible scope of OIE activities and priorities in relation to this new task.[38] Working via the OIE has a number of advantages.

48 The aim of the OIE is to establish welfare standards. Internationally agreed standards are an essential element in functioning of the TBT and SPS agreements and could also be an useful reference for bilateral negotiations[39].

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[38] OIE Press release of 15.4.2002, http://www.oie.int/eng/press/a_020415.htm
Report of the meeting of the OIE ad hoc group on animal welfare – 70th General Session (Paris, 26-31.5.2002) – International Committee of the OIE

[39] Animal Pharm N° 487, 22.2.2002: "Dr Bernard Vallat: opening up the OIE"

49 Besides this long-term goal, the existence of OIE standards could have positive effects on any efforts to address the animal welfare issue internationally. The fact that a science-based body like the OIE is dealing with this matter would facilitate other negotiations. Assurance that animal welfare considerations are not disguised restrictions on international trade would also be more credible. This could be relevant for all external measures envisaged in this communication, such as negotiations on labelling in the framework of the TBT Agreement or the allocation of resources in the context of the CAP reform which has to be justified as non-trade-distorting measure ("Green Box") under the WTO Agreement on Agriculture.

50 On a practical level, the OIE offers a readymade forum for the exchange of scientific knowledge and its dissemination to a maximum number of countries. And the fact that future OIE standards will probably be lower than those applied in the EU means that they would entail no additional burden for EU producers. The existence of international technical standards would encourage producers and retailers to apply or to demand the application of higher standards for marketing reasons.

51 Therefore, the Commission with all Member States of the EU should continue to fully support and follow up on to the OIE initiative. On the operational side it should be remembered that the EU is not a member of the OIE and it is therefore necessary to evaluate the level of EU participation, for example, in providing technical assistance to the working group and specialist sub groups.

MULTILATERAL AND BILATERAL AGREEMENTS

52 Another means of promoting animal welfare internationally - complementing progress via international reference bodies like the OIE - is through the negotiation of bilateral or multilateral agreements.

53 A starting point could be agreements in specific sectors (as for example the trade in eggs) with our major trading partners, open to all relevant WTO members. However, an important consideration here is guarding against high standards already adopted by the EU being compromised. Past experience in other areas (e.g. the "humane trapping" agreement signed with Canada and Russia) points to the danger of a lowering of standards established in the Community.

54 Since such agreements - dealing specifically with animal welfare - are not yet a reality, the Commission intends to incorporate animal welfare standards in the bilateral veterinary agreements (covering trade in animal products and live animals) to be negotiated (notably with the Mercosur countries[40]) or already in place (notably with Canada, New Zealand and the United States). The recently signed agreement with Chile already contains provisions in relation to animal welfare standards[41].

[40] Argentina, Brazil, Chile, Paraguay and Uruguay

[41] The "Agreement on sanitary and phytosanitary measures applicable to trade in animals and animal products, plants, plant products and other goods and animal welfare" states in Article 2 that reaching a common understanding between the Parties concerning animal welfare standards constitute one of its objectives

55 In the sanitary agreements with the USA (1997) and Canada (1998) no reference to animal welfare standards was made. In the EU/Canada and EU/New Zealand agreement (1997) the scope may be broadened to "veterinary issues other than sanitary measures" applicable to trade in live animals and animal products. With New Zealand it was understood that this could include animal welfare standards. For equivalent products, New Zealand agreed to specifically certify compliance with EU animal welfare standards concerning stunning and slaughter.

56 As regards future agreements the Commission aims at including animal welfare as an issue, with the objective to commonly develop standards later on, taking also into account future evolutions at multilateral level.

REINFORCING LINKS BETWEEN ANIMAL WELFARE, ANIMAL HEALTH AND FOOD SAFETY

57 As mentioned before, there is increasingly wide acceptance of the link between animal welfare and food safety. However, further scientific work is needed in this area.

58 The EU should encourage efforts to research and detail these links between animal welfare and animal health and between animal welfare and the quality and healthiness of foodstuffs - and to have them recognised.[42] For the latter purpose, the most appropriate forum would again seem to be the OIE, given the content of its 5-year work programme as alluded to earlier.

59 Further efforts would be necessary to understand how the developments in the modern farming could be redirected to ensure that in the future this activity could become more socially acceptable without being detrimental to the health of the animals and the safety of the products.

60 In the mean time, all EU legislation on veterinary subjects should be drafted and enforced in a way that integrates the dimensions of animal welfare and public health. A Commission proposal on meat hygiene, for example, already contains provisions on *ante mortem* animal welfare inspections at the slaughterhouse or on the farm, which will also be a condition for the signing of the health certificates.

[42] DG Research and Technical Development - Seminar on Farm Animal Welfare. Press: Commission supports research into better conditions for animal breeding and better food quality
http://www.europa.eu.int/comm/research/quality-of-life/animal-welfare/seminars/index_en.html

THE LABELLING OF ANIMAL PRODUCTS

61 Labelling is becoming increasingly important as more and more consumers want to know about the foodstuffs they are buying. This interest is partly met by existing mandatory labelling (ingredients, nutritional values, "best before" dates, etc.). But recent sociological studies show that concern among many EU consumers today about food production methods goes beyond these criteria and extends also to animal welfare. Indeed, a recent EU sociological study revealed that a lack of labelling on production methods was preventing consumers from possibly shifting toward "animal friendly" products[43].

62 Labelling is probably the least trade-distorting means of meeting the specific demand for products produced in accordance with acceptable animal welfare standards. Nevertheless an immediate problem with the issue is the suspicion it arouses among some of our WTO partners that it could be used as a disguised restriction on imports from third countries. Conversely, the labelling of animal welfare aspects could even facilitate the placing of products derived from extensive farming on the EU market, since consumers tend to attach great value to this form of production. Many third countries have a comparative advantage in this respect which could be exploited to commercial advantage.[44]

63 The extra production costs that labelling entails is a lesser problem, as these can usually be recouped in part by higher retail prices.

64 Labelling can take one of two forms: mandatory or voluntary. The latter subdivides in turn into supervised schemes to which producers freely subscribe (e.g. organic labelling) and labelling self-imposed by producers or traders.

MANDATORY LABELLING

65 To date only one EU instrument making animal welfare -related labelling compulsory has been passed. It is a Regulation[45] - effective from 1 January 2002 - on eggs that will require specification of the rearing method applied (in replacement of current voluntary practice). An initiative in this area was necessary as the methods by which hens are farmed had become a major factor for EU consumers when buying eggs. Existing labelling provisions were considered inadequate and there were justified claims that consumers were being misled regarding the rearing methods concerned. There were also concerns that the efforts incurred by some producers in raising standards were being undermined by the confusion arising from the lack of clarity in labelling requirements.

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43 "Consumer Concerns About Animal Welfare And The Impact On Food Choice" - EU FAIR-CT36-3678 - Dr Spencer Henson and Dr Gemma Harper -Centre for Food Economics Research -Department of Agricultural and Food Economics - The University of Reading

44 The presentation of the policies on animal welfare of New Zealand could be regarded as an example how to promote the positive image of extensive animal production, http://www.maf.govt.nz/biosecurity/animal-welfare/animal-welfare-in-nz.pdf

45 Council Regulation (EC) 5/2001 of 19.12.2000 amending Regulation (EEC) n 1907/90 on certain marketing standards for eggs – OJ L 2 of 5.1.2001.

66 The effects of the different farming systems on production costs in the EU, USA and Switzerland were recently studied and point to the clear potential for competitive disadvantages arising from differences in standards.[46]

67 In the case of eggs produced in non-EU countries (though only for direct consumption), an indication of the farming method may be replaced by certain other indications where the third-country procedures are not sufficiently equivalent to the technical rules and standards applying in the Union. The Council Regulation therefore says that, where necessary, the Commission is to negotiate with countries exporting eggs to the EU so as to arrive at appropriate ways of proving compliance with labelling standards equivalent to those in the EU.

68 These new rules reflect the fact that product traceability has become a high priority for Europe's consumers, and that there is wide public support for compulsory labelling.

69 Such mandatory labelling rules raise, however, the possibility of conflict with our external trading partners. The Commission presented a note[47] on mandatory labelling to the December 2001 session of the WTO Agriculture Committee (an initiative which it should follow up within both TBT and Agriculture Committees) highlighting that the right of WTO Members to choose a level of consumer information and protection as regards the characteristics and the production and processing methods of food and agricultural products should be maintained.

70 On a more general level, the Union should seek to develop a comprehensive policy on mandatory labelling and to secure international recognition of its legitimacy. This should include ensuring that all stages of the development of labelling schemes take place in a transparent manner, especially the definition of criteria and the operation of such schemes. All interested parties should have the opportunity to be involved in a meaningful way as early as possible.

71 The mutual recognition of other countries' labelling schemes as well as the recognition of animal welfare standards applied within third-countries as being equivalent to those contained in EU law (as foreseen, e.g., for the purposes of the egg marketing Regulation) should be treated as a priority by the Commission.

VOLUNTARY LABELLING

72 Voluntary labelling appears to be on the increase worldwide. As indicated earlier, it subdivides into supervised public schemes to which producers freely subscribe and labelling self-imposed by producers and traders[48]. Organic farming is probably the most popular subject of voluntary labelling[49]. However, its impact on animal welfare is in certain respects limited, since other major aims of those schemes, as the preservation of the environment and sustainability of agriculture, could conflict with animal welfare objectives. Worldwide, such guidelines and codes of conduct outweigh mandatory legislation.

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46 "Hardboiled reality – animal welfare-friendly egg production in a global market", 2001, presented by RSPCA (Royal Society for the Prevention of Cruelty to Animals) and Eurogroup for Animal Welfare

47 "Mandatory Labelling for Agricultural Products – Note by the European Communities", Appendix 7

48 See for example the "Free farmed label" in the USA, www.freefarmed.org

49 See for example: US National Organic Program, on the Web: http://www.ams.usda.gov/nop/index.htm

73 The usual motive for such schemes is to exploit a market for higher-quality products commanding higher prices. In practice voluntary labelling has a very positive effect in raising standards to higher levels. And consumer interest in such products (e.g. organic produce) is increasing.

74 Such consumer pressure is strongest in areas where farming methods are the most intensive and, therefore, less welfare-friendly. This is the case of pig and poultry production, where squeezed profit margins (due to international competition) have caused significant increases in average animal numbers per holding and in the proportion of large-scale holdings. This has led to several voluntary labelling schemes being launched across the EU to reassure consumers about how animals are farmed (including environmental concerns).

75 Further reflection is needed on the approach to adopt towards non-governmental schemes, which, judging by the data received for this communication, are becoming increasingly widely disseminated world-wide.

76 In the absence of international harmonisation, recognition of equivalency has the potential to increase trade flows by labelling requirements. Accordingly, mutual recognition of voluntary labelling schemes with non-EU countries is desirable, possibly on the basis of criteria to be worked out by the TBT Committee of the WTO.

77 Animal welfare only features in some of the existing labelling schemes relating to production methods (e.g. the Community's organic label). This dimension should be further developed - again with the involvement of all interested parties at all stages.

DIRECT PAYMENTS TO PRODUCERS FOR ANIMAL WELFARE - REVIEW OF THE CAP

78 The reform of the common agricultural policies foreseen by Agenda 2000 follows the trend of more market oriented measures decoupling subsidies from production. In July 2002 the Commission adopted the Mid-Term Review (MTR) of the Agenda 2000, putting it into the wider context of the recent public debate about the CAP and its future[50]. Europe's citizens no longer want systems which encourage more production of food to the exclusion of other priorities. Instead, farming is seen as fundamental to other key societal goals such as food safety and quality, animal welfare, environmental protection, sustainability, rural development and the upkeep of the countryside. There is an increasing acceptance that these wider objectives must be promoted but existing price mechanisms do not necessarily allow for the recovery of the associated costs. This has inevitable implications for the competitiveness of farming. Farmers contend that they should be compensated for any loss in competitiveness which they might suffer because of higher welfare standards.

79 The decisions taken in Doha in November 2001 fully safeguard the rights of governments to take measures like this which they deem necessary to protect their consumers' interests.

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50 COM(2002) 394 final

80 One priority for the Community is therefore to define this "multifunction" role of agriculture and to find the right way to make it work in a sustainable fashion. As for the implications of animal welfare for international trade, the reallocation of financial resources in particular would help preserve the *acquis* and support further development of the level of protection. Furthermore the enforcement of "good farming practices" as outlined in the MTR of the CAP will promote the supporting of animal welfare encompassing mandatory standards.

81 Turning to future initiatives, the EU's proposal to the WTO in June 2000 highlighted the possibility of making direct payments to producers to offset costs incurred due to higher welfare standards. An example for such an increase in production cost is described in the earlier mentioned study[51] on egg production. It concludes that the higher welfare standards for laying hens recently adopted in the EU will lead to higher costs, compared to third country trading partners.

82 The Commission believes that it is legitimate that compensation for additional costs of this kind should be exempted from subsidy-reduction commitments whenever it can be clearly shown that these extra costs stem directly from the higher standards in question and thus have no, or at most minimal, trade-distorting effects. This initiative fully respects the principle agreed in Doha that the commitment to reforming the trading system in agriculture is paired with a commitment to recognising non-trade concerns, and as consequence the reform of farm support must leave room for accompanying measures that are minimally or not at all trade-distorting. Clearly, any solutions in this area to meet the concerns for one country should not create problems for others.

83 A clear difficulty is in identifying and quantifying any additional costs arising from animal welfare legislative requirements. The extent to which such costs are recouped through the higher prices paid by consumers needs to be taken into account. Options other than direct compensation are available, such as investment aids to install upgraded facilities through the structural and rural development funds. National funding can also be provided for this purpose provided the relevant state aid provisions are respected.

84 In this perspective, priority should be given to assessing the impact of animal-welfare measures on the cost of end-products. Another aspect to be looked at is the form of payments to farmers which will apply welfare standards beyond mandatory requirements. Studies are under way but no reliable economic parameters are yet available in this field. Accordingly, efforts should be made by the EU to develop models for evaluating the additional costs of animal welfare requirements, starting with the most intensive systems of farming such as for pigs and poultry.

85 In addition, determining the costs and form of payments to farmers would probably clarify the EU position in the WTO negotiations.

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51 See footnote 46

86 The benefits of the proposed MTR are considerable: in particular direct compensation would increase the acceptability of higher animal-welfare standards to producers themselves. A positive attitude among producers would lead to a faster acceptance of animal-welfare higher standards. The inclusion of food safety and animal health and welfare in cross-compliance and their systematic monitoring through the farm audit framework will improve transparency and give consumers greater confidence. Once modern production systems become more widespread, the management practices employed will develop further. This would have positive side-effects on all kinds of related issues, including food safety and animal health, since hygiene conditions for example constitute a link between them. In addition the MTR foresees that decoupling will encourage farmers to respond to market signals generated by consumer demand rather than by quantity-related policy incentives.

87 The MTR proposals will help address citizens' concerns as the one for animal welfare. Dynamic modulation will allow a shift towards the increased provision of public goods such as environmental services and animal welfare, as well as measures focused on improving the competitiveness of the sector.

88 Furthermore, the broad application of advanced standards could lead to a stronger defence of animal-welfare issues by the agricultural sector in the international context.

89 Later on, it will be necessary to define which measures call for compensation and to whom it would be paid. Politically sensitive decisions would be needed in this context.

90 Any direct payments to producers have to be justified under the Agreement on Agriculture within WTO. The so-called "Green Box" is the interface for addressing internal support schemes geared to societal goals. Negotiations with our trading partners will be necessary. The Commission has already taken a first step by presenting a non-paper on Green Box issues at the special session of the Committee on Agriculture in September 2001. This needs to be followed up by actively maintaining a close relationship with all the other areas of action set out in this communication.

APPENDIX 1

ANIMAL WELFARE LAW IN 30 COUNTRIES

- DATA RECEIVED BY THE COMMISSION

The Commission contacted 106 third countries, 73 of which replied but only 30 with information directly relevant to the survey. This information is organised in the table below as follows:

1. Animal welfare (or animal protection) act: does the country have an "umbrella" animal welfare (or animal protection) act (i.e. an act covering all animals - including pets and those kept for scientific purposes - but usually not including specific provisions on methods of farming animals, e.g. stocking densities)?;
2. animals on farms: do any rules exist on the farming of animals, and, if so, do they take the form of (binding) legislation or (voluntary) guidelines/codes of conduct?;
3. transportation of animals: do rules exist, and, if so, (binding) legislation or (voluntary) guidelines/codes of conduct?;
4. killing of animals: do rules exist, and, if so, (binding) legislation or (voluntary) guidelines/codes of conduct?

Relevant information received on animal protection rules (at 1999)

COUNTRY	An animal welfare act?	animals on farms:	Transport of animals:	Slaughter of animals:
(1) Argentina			x	X
(2) Australia		●	●	X
(3) Botswana				●
(4) Bulgaria				X
(5) Canada		●	●	X
(6) Cape Verde			●	X
(7) Chile			●	
(8) Croatia	yes	x	x	X
(9) Cyprus		●	x	X
(10) Czech Republic		x	x	X
(11) Estonia	yes	●	x	X
(12) Hong Kong	yes			X
(13) Hungary	yes	●	x	X
(14) India	yes	●		
(15) Japan		●	●	X
(16) Latvia		x	x	X
(17) Lithuania	yes	x	x	X
(18) Malta	yes		x	X
(19) Mexico			●	●
(20) Namibia		●	●	●
(21) New Zealand	yes	●	x	X
(22) Norway	yes	x	x	X
(23) Philippines	yes			

COUNTRY	An animal welfare act?	animals on farms:	Transport of animals:	Slaughter of animals:
(24) Poland	yes	x	x	X
(25) Slovak Republic	yes	●	x	X
(26) Slovenia	yes	x	x	X
(27) South Africa		●	●	X
(28) Swaziland			●	X
(29) Switzerland	yes	x	x	X
(30) U. S. A.	yes	●	●	X

X indicates legislation; ● indicates guidelines and codes of conduct.

(Where both exist, legislation takes precedence.)

APPENDIX 2

COUNCIL OF EUROPE CONVENTIONS ON FARM ANIMAL PROTECTION

Founded in 1949, the Council of Europe has 43 member countries, including all 15 EU Member States. Over the years it has drawn up, and continues to develop, five conventions on various aspects of animal welfare. The following are relevant to *farm* animal protection:

- The European Convention for the protection of animals during international transport (Paris, 13/12/68);
- The European Convention for the protection of animals kept for farming purposes (Strasbourg, 10/03/76);
- The European Convention for the protection of animals for slaughter (Strasbourg, 10/05/79).

The second of these ("on animals kept for farming purposes") contains specific recommendations for the protection of the main species of animals farmed in Europe, and the specific aim of Directive 98/58/EC was to give effect to the principles contained in the Convention and ensure their uniform application throughout the EU.

To date the Community has itself ratified the same Convention as well as that on "animals for slaughter". And during 2001 the Commission received authorisation from the Council to negotiate a modified version of the Convention on "animals during international transport" on behalf of the Community.

The following table indicates which of the three Conventions have been signed by other Council of Europe members.

Non-EU Countries and the Council of Europe animal protection conventions

Non-EU member of the Council of Europe	Convention on protection of animals kept for farming	Convention on protection during international transport	Convention on protection of animals for slaughter
Bosnia and Herzegovina	X		X
Croatia	X		X
Cyprus	X	X	
Czech Republic	X	X	
Hungary			
Iceland	X	X	
F.Y.R.O.M.	X		X
Malta	X		
Norway	X	X	X
Romania		X	
Russian Federation		X	
Slovenia	X		X
Switzerland	X	X	X
Turkey		X	
Yugoslavia	X		X

APPENDIX 3

EXTERNAL TRADE IN LIVE ANIMALS & ANIMAL PRODUCTS COVERED BY EU ANIMAL WELFARE LEGISLATION

This Appendix contains data on trading flows with third countries for collation with the information on legislation. It also contains data on changing farm structures within the EU. Data concerning trade in agricultural products not derived from animals (as cereals) are shortly presented to demonstrate the relevance of animal trade in relation to the all sector.

EC live animals trade and slaughter (year 2000) (*)

Species		EC trade live animals				EC slaughtering (b)
		Total trade (a)	Intra-community	Import	Export	
Bovines	heads	3.767.369	2.965.784	501.401	300.184	26.847.000
	tonnes	975.506	740.101	62.931	172.474	7.393.343
Pigs	heads	11.957.246	11.869.227	57.247	30.772	203.021.000
	tonnes	579.582	576.945	1.157	1.480	17.563.320
Sheep and Goats	heads	4.193.501	2.567.720	1.564.951	60.830	77.585.000
	tonnes	110.741	76.973	30.730	3.038	1.954.000
Equidae	heads	212.935	65.028	138.309	9.598	359.000
	tonnes	95.748	25.545	63.996	6.207	84.347
TOTAL tonnes		*1.761.577*	*1.419.564*	*158.815*	*183.199*	*26.995.010*

Source: EUROSTAT

(*) The table describes the amount of live animals transported over a distance of 50 km subject to EC legislation on animal protection during transport.

Value of imports of live animal and animal products from Third Countries
- Average 1992/2001 in 1000 ECU -

	Live animals	Meat	Dairy products and eggs	Total
TOTAL EXTRA EU	646.155	2.611.365	960.659	4.218.180
New Zealand	2.080	648.680	222.478	873.238
Hungary	71.817	293.362	20.772	385.951
Brazil	411	378.310	751	379.473
Argentina	3.652	329.160	35.708	368.519
Poland	139.078	114.734	33.005	286.816
USA	157.605	88.736	17.934	264.275
Switzerland	5.376	8.390	198.860	212.626
Australia	6.808	119.501	44.887	171.196
Uruguay	572	99.774	5.807	106.153
Thailand	50	98.495	470	99.014
Switzerland	4.658	1.710	87.266	93.634
China	5.667	45.981	37.527	89.175
Canada	11.589	29.607	35.303	76.499
Czech Rep.	23.872	15.313	23.337	62.522
U.A.Emirates	54.302	21	118	54.441
Romania	34.718	4.667	7.462	46.847
Botswana	98	44.552	5	44.654
Bulgaria	5.169	31.066	7.580	43.815
Other countries	118.634	259.306	181.389	559.329

Source: EUROSTAT

Detailed value of imports of certain animal products from Third Countries - Average 1992/2001 in 1000 ECU

	Bovine fresh meat	Bovine frozen meat	Pork meat	Sheep or goat meat	Horse and alike meat	Offals	Poultry meat	salted or dried meat	Eggs in shell	Eggs not in shell	TOTAL
TOTAL EXTRA EU	494.624	295.338	85.539	645.473	196.614	67.194	493.716	102.047	26.126	6.325	2.412.996
New Zealand	1.788	11.327	300	554.035	1.063	22.361	34	2	0	0	590.909
Brazil	60.884	139.415	24	58	21.405	5.095	104.079	46.908	161	53	378.081
Argentina	195.584	46.917	5	3.720	57.562	10.487	1.093	87	0	68	315.524
Hungary	10.019	2.468	55.396	3.020	585	1.090	194.831	371	1.577	138	269.496
Australia	30.715	5.119	10.567	50.919	7.135	9.434	15	15	4	8	113.930
USA	12.434	2.800	10.084	122	52.140	7.697	2.137	210	9.403	2.719	99.746
Thailand	1	23	0	1	5	0	53.580	44.775	83	105	98.574
Uruguay	34.026	36.576	7	11.852	10.689	5.148	90	2	0	1	98.390
Poland	4.488	5.670	1.089	155	13.575	858	65.292	86	86	18	91.318
Botswana	27.875	16.674	0	0	0	0	0	0	5	0	44.553
Canada	1.236	203	80	5	26.046	1.623	337	10	8.623	327	38.489
Namibia	30.164	7.805	0	9	0	0	0	0	278	0	38.257
Zimbabwe	24.361	7.030	0	0	0	11	0	0	11	0	31.413
Bulgaria	33	11	144	10.845	0	14	19.279	24	26	553	30.929
Other countries	61.017	13.300	7.844	10.732	6.410	3.376	52.949	9.555	5.869	2.335	173.387

Sources: EUROSTAT

Supply balance - pigmeat					
	1 000 t (1)				% TAV
	1997	1998	1999	2000	2000/1999
1	2	3	4	5	6
Gross internal production	16 290	17 657	18 065	17 564	-2.8
Imports – live animals	6.8	16.7	1.2	0.7	-39.6
Exports – live animals	21.0	12.2	27.9	0.5	-98.1
Intra-EU trade	291	386	501	343	-31.6
Usable production	16 276	17 662	18 038	17 564	-2.6
Change in stocks	3	161	4	0	x
Imports	70	44	68	48	-28.4
Exports	948	1 139	1 524	1 260	-17.4
Intra-EU trade	3 583	3 861	3 957	2 928	-26.0
Internal use (total)	15 178	16 227	16 350	16 384	0.2
Gross consumption in kg/head/year	40.8	43.3	43.4	43.5	0.2
Self-sufficiency (%)	107.3	108.8	110.5	107.2	-3.0

(1) Carcass weight

World production and gross domestic production of principal pigmeat-producing or exporting countries

	%				1 000 t				% TAV
	1997	1998	1999	2000	1997	1998	1999	2000	2000/1999
1	2	3	4	5	6	7	8	9	10
World	100.0	100.0	100.0	100.0	82 146	87 647	89 867	90 909	1.2
- EU-15	19.8	20.1	20.1	19.3	16 249	17 636	18 026	17 564	-2.6
- Peop. Rep. China	45.2	45.5	45.7	47.4	37 155	39 899	41 048	43 058	4.9
- USA	9.5	9.8	9.7	9.4	7 835	8 623	8 758	8 532	-2.6
- Russia	1.9	1.7	1.7	1.4	1 546	1 505	1 485	1 250	-15.8
- Poland	2.4	2.3	2.3	2.1	1 981	2 026	2 043	1 900	-7.0
- Japan	1.6	1.5	1.4	1.4	1 283	1 286	1 277	1 270	-0.5
- Brazil	1.8	1.9	1.9	2.0	1 518	1 652	1 752	1 804	3.0
- Canada	1.5	1.6	1.7	1.7	1 257	1 390	1 562	1 525	-2.4
- Romania	0.8	0.7	0.7	0.7	667	620	610	626	2.6
- Hungary	0.7	0.6	0.7	0.7	581	569	664	664	0.0

Sources: FAO

Changing structure of pig farms, by Member State

	EU-15	Belgique/ België	Dan-mark	Deutschland	Elláda	España	France	Ireland	Italia	Luxem-bourg	Neder-land	Öster-reich	Portugal	Suomi/ Finland	Sverige	United King-dom
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Holding (x 1 000)																
1993	1 552	15	27	294	51	440	106	3	273	1	27	125	150	11	12	17
1995	1 276	13	21	239	23	301	90	3	280	1	22	112	139	7	11	13
1997	1 152	12	19	205	21	285	78	2	250	1	21	100	130	6	8	14
1999	:	11	15	:	:	236	:	:	252	0	16	86	130	5	6	12
% TAV 1999/1993	x	-5.2	-9.8	x	x	-10.4	x	x	-1.3	x	-8.7	-6.2	-2.4	-13.1	-11.6	-5.8
% TAV 1999/1997	x	-4.4	-11.8	x	x	-9.4	x	x	0.4	x	-13.6	-7.5	0.0	-9.1	-14.4	-7.7

Animals (x 1 000)																
1993	121 227	7 165	11 568	26 486	1 144	18 188	14 291	1 487	8 348	72	14 964	2 822	2 665	1 381	2 777	7 869
1995	117 812	7 268	11 084	24 674	916	18 126	14 531	1 542	8 063	68	14 398	3 706	2 402	1 394	2 305	7 335
1997	121 954	7 313	11 383	24 250	939	19 556	15 473	1 717	8 281	74	15 189	3 680	2 365	1 444	2 351	7 939
1999	:	7 706	11 626	:	:	22 418	:	:	8 414	84	13 567	3 433	2 350	1 493	2 115	7 010
% TAV 1999 / 1993	x	1.2	0.1	x	x	3.5	x	x	0.1	2.6	-1.6	3.3	-2.1	1.3	-4.5	-1.9
% TAV 1999 / 1997	x	2.6	1.1	x	x	6.8	x	x	0.8	6.3	-5.6	-3.5	-0.3	1.7	-5.3	-6.2
Average number of animals per holding																
1993	78.1	477.7	428.4	90.1	22.4	41.3	135.0	495.7	30.6	107.6	554.2	22.6	17.8	125.5	231.4	462.9
1995	92.3	557.3	517.5	103.1	39.1	60.2	161.5	514.1	28.8	121.8	643.1	33.1	17.2	189.4	214.4	545.1
1997	105.8	629.1	604.7	118.1	44.7	68.7	198.5	858.5	33.1	138.1	722.9	36.6	18.2	239.1	277.0	557.4
1999	x	703.2	750.9	x	x	95.0	x	x	33.4	187.6	825.9	39.8	18.1	307.0	351.7	573.5

Source: European Commission, Eurostat

1999 world production and trade in the principal agricultural products – The EU share of the world market

	World production (1 000 t)	World trade [1] (1 000 t)	Proportion of production traded (%) (3/2) x 100	% of world trade		
				Imported by EU	Exported by EU	Net EU share of world trade [2] (6–5)
1	2	3	4	5	6	7
Total cereals (except rice) [3]	1 468 979	205 035	14.0	3.0	13.1	10.2
of wich: - total wheat	586 422	106 337	18.1	3.1	15.1	12.0
Feed grain (except rice) [3]	882 556	98 698	11.2	2.8	11.0	8.2
of which – maize	605 016	69 451	11.5	3.2	0.2	-3.0
Oil seeds (by weight produced)	329 482	55 651	16.9	34.4	3.5	-30.9
of which – soya	157 783	38 771	24.6	35.9	0.1	-35.8
Wine	28 405	2 670	9.4	24.3	41.5	17.1
Sugar	134 062	39 249	29.3	4.5	13.3	8.8
Total milk	481 997	709	0.1	6.7	20.2	13.5
Butter	7 031	782	11.1	16.4	20.5	4.1
Cheese	16 092	1 234	7.7	13.0	31.9	18.9
Milk powder (skimmed and whole)	5 905	2651	44.9	3.2	32.0	28.8
Total meat (except offal)	228 547	16 028	7.0	7.6	20.4	12.8
of which: - beef and veal	56 196	5 572	9.9	7.1	16.7	9.6
- pigmeat	88 838	3 177	3.6	2.4	41.6	39.2
- poultrymeat	65 109	6 363	9.8	5.8	15.7	9.9
Eggs	53 823	469	0.9	1.8	27.6	25.8

(1) Exports (excluding intra-EU trade) and excluding processed products.

(2) Net balance EU trade/world trade.

(3) Cereals as grain; processed products excluded.

Sources: FAO

World production and production of principal beef/veal producing/exporting countries (1)

	%				1 000 t				% TAV
	1997	1998	1999	2000	1997	1998	1999	2000	2000/1999
1	2	3	4	5	6	7	8	9	10
World	100,0	100,0	100,0	100,0	55 309	55 078	55 962	57 170	2,2
- EU-15	13,9	13,4	13,8	12,9	7 896	7 657	7 697	7 401	– 3,8
- USA	20,1	20,2	21,6	21,5	11 714	11 803	12 123	12 311	1,6
- Russia	4,1	3,8	4,0	3,7	2 394	2 247	1 868	2 126	13,8
- Brazil	9,0	9,1	11,1	11,3	5 921	5 794	6 182	6 460	4,5
- Argentina	0,0	4,0	4,7	5,1	2 712	2 452	2 653	2 900	9,3
- Uruguay	0,8	0,8	0,8	0,8	454	449	458	453	– 1,1
- Australia	3,8	3,8	3,6	3,5	1 810	1 955	2 011	1 988	– 1,1
- New Zealand	1,1	1,0	1,0	1,1	646	634	561	623	11,1
- Peop. Rep. China	7,3	7,6	8,4	8,8	4 105	4 485	4 711	5 023	6,6
- Canada	2,6	2,7	2,2	2,2	1 076	1 148	1 238	1 260	1,8
- Mexico	2,5	2,8	2,5	2,5	1 340	1 380	1 401	1 415	1,0
- Colombia	1,2	1,2	1,3	1,3	763	766	724	754	4,1
- Poland	0,8	0,8	0,7	0,6	429	430	385	341	– 11,4
- India	2,4	2,4	2,5	2,5	1 378	1 401	1 421	1 442	1,5
- Japan	0,9	0,9	0,9	0,9	530	529	540	534	– 1,1
- South Africa	0,8	1,1	0,9	1,0	484	518	553	590	6,7
- Switzerland	0,3	0,3	0,3	0,2	152	147	146	131	– 10,3
- Hungary	0,1	0,1	0,1	0,1	55	47	45	45	0,0
- Norway	0,2	0,2	0,2	0,2	89	91	91	93	2,2

(1) Net production.

Sources: FAO and other international organizations (GATT)

APPENDIX 4

THE OIE AND ANIMAL WELFARE

The World Organisation for Animal Health, or OIE ("Office International Des Epizooties") is an intergovernmental organisation set up under the International Agreement of 25 January 1924, which was originally signed in Paris by 28 countries. By May 2001, the OIE had a total 158 members.

It operates under the authority and supervision of an International Committee comprising delegates designated by the contracting governments - on the egalitarian basis of one delegate per country. The Committee at least once a year.

Several third countries indicated as main animal welfare requirements recommendations on the protection of animals during transport from OIE (Office International Des Epizooties). It should be noted that the OIE's current *International Animal Health Code* (10th Edition - 2001) contains a section devoted specifically to the protection of animals during transport.

The OIE Code provides guidelines and recommendations on the following aspects:

- general principles to be observed common to all forms of transport;
- special considerations according to methods of transport;
- general recommendations on air transport.

RESOLUTION No. XIV

Animal Welfare Mandate of the OIE

(Adopted by the International Committee of the OIE on 29 May 2002)

CONSIDERING THAT

At the 68th General Session in May 2000 the International Committee examined and approved the OIE Third Strategic Plan,

At the 69th General Session in May 2001 the International Committee adopted the Director-General's Work Programme to implement the recommendations of the Third Strategic Plan for the period 2001–2005. The Work Programme indicated that new areas identified in the Third Strategic Plan would be given special attention,

An OIE Ad hoc Group on Animal Welfare met from 2 to 4 April 2002 and drafted recommendations for the consideration of the International Committee concerning the scope of OIE involvement in the area of animal welfare, priorities for the OIE and a modus operandi,

This Ad hoc Group noted the OIE's 75-year history of achievement as the international reference organisation for animal health with an established infrastructure and international recognition.

Recognising the essential link between animal health and animal welfare, the Ad hoc Group believed that the OIE was well placed to provide international leadership on animal welfare,

THE COMMITTEE

RECOMMENDS THAT

1. As animal welfare is a complex, multi-faceted public policy issue that includes important scientific, ethical, economic and political dimensions, the OIE develop a detailed vision and strategy to incorporate, balance and take account of these dimensions.

2. The OIE then develop policies and guiding principles to provide a sound foundation from which to elaborate specific recommendations and standards.

3. The OIE establish a Working Group on Animal Welfare to coordinate and manage animal welfare activities in accordance with the tasks listed below, and the Working Group advise on specific tasks to be carried out by Ad hoc Groups.

4. In consultation with the OIE, the Working Group develop a detailed operational plan for the initial 12 months, addressing the priority issues identified.

5. The Working Group and its Ad hoc Groups consult with non-governmental organisations (NGOs) having a broad international representation and make use of all available expertise and resources, including those from academia, the research community, industry and other relevant stakeholders.

6. The scope of OIE involvement in animal welfare issues be grouped into the following:

   - animals used in agriculture and aquaculture for production, breeding and/or working purposes,
   - companion animals including 'exotic' (wild-caught and 'non-traditional') species,
   - animals used for research, testing and/or teaching purposes,
   - free-living wildlife, including the issues of their slaughter and trapping,
   - animals used for sport, recreation and entertainment, including in circuses and zoos,

   and that, for each group, in addition to essential animal health considerations, the topics of housing, management, transportation and killing (including humane slaughter, euthanasia and killing for disease control) be addressed.

7. The OIE give priority to animal welfare issues regarding animals used in agriculture and aquaculture and, regarding the other groups identified, the OIE establish relative priorities to be dealt with as resources permit.

8. Within the agriculture and aquaculture group, the OIE firstly address transportation, humane slaughter, and killing for disease control, and, later, housing and management. The OIE also consider the animal welfare aspects as issues arise in the areas of genetic modification and cloning, genetic selection for production and fashion, and veterinary practices.

9. When addressing zoonoses, the OIE give priority to addressing the animal welfare aspects of animal population reduction and control policies (including stray dogs and cats).

10. The OIE incorporate within its communication strategy key animal welfare stakeholders, including industry and NGOs.

11. The OIE incorporate animal welfare considerations within its major functions and assume the following specific roles and functions:

    - development of standards and guidelines leading to good animal welfare practice,
    - provision of expert advice on specific animal welfare issues to OIE stakeholder groups, including Member Countries, other international organisations and industry/consumers,
    - maintenance of international databases on animal welfare information, including different national legislations and policies, internationally recognised animal welfare experts, and relevant examples of good animal welfare practice,

- identification of the essential elements of an effective national infrastructure for animal welfare, including legislation/legal tools and the development of a self-assessment check list,
- preparation and circulation of educational material to enhance awareness among OIE stakeholders,
- promotion of the inclusion of animal welfare in undergraduate and post-graduate veterinary curricula,
- identification of animal welfare research needs and encouragement of collaboration among centres of research.

APPENDIX 5

PROTECTION OF FARM ANIMALS: MAIN EU LEGISLATION

Farming:

- Council Directive 1999/74/EC of 19 July 1999 laying down minimum standards for the protection of laying hens - Official Journal L 203, 03.8.1999 p. 53 – 57
- Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes - Official Journal L 221, 08.8.1998 p. 23 – 27
- Council Directive 97/2/EC of 20 January 1997 amending Directive 91/629/EEC laying down minimum standards for the protection of calves - Official Journal L 025, 28.1.1997 p. 24 – 25
- Council Directive 91/629/EEC of 19 November 1991 laying down minimum standards for the protection of calves - Official Journal L 340, 11.12.1991 p. 28 – 32
- 97/182/EC: Commission Decision of 24 February 1997 amending the Annex to Directive 91/629/EEC laying down minimum standards for the protection of calves - Official Journal L 076, 24.02.1997 p. 30 - 31
- Council Directive 91/630/EEC of 19 November 1991 laying down minimum standards for the protection of pigs - Official Journal L 340, 11.12.1991 p. 33 – 38
- Council Directive 88/166/EEC of 7 March 1988 complying with the judgement of the Court of Justice in Case 131/86 (annulment of Council Directive 86/113/EEC of 25 March 1986 laying down minimum standards for the protection of laying hens kept in battery cages) - Official Journal L 074, 19.03.1988 p. 83 – 87
- 78/923/EEC: Council Decision of 19 June 1978 concerning the conclusion of the European Convention for the protection of animals kept for farming purposes – Official Journal L 323, 17.11.1978 p. 12 – 13

Transport:

- Council Directive 91/628/EEC of 19 November 1991 on the protection of animals during transport and amending Directives 90/425/EEC and 91/496/EEC - Official Journal L 340, 11.12.991 p. 17 – 27
- Council Directive 95/29/EC of 29 June 1995 amending Directive 90/628/EEC concerning the protection of animals during transport - Official Journal L 148, 30.6.995 p. 52 – 63
- Council Regulation (EC) No 1255/97 of 25 June 1997 concerning Community criteria for staging points and amending the route plan referred to in the Annex to Directive 91/628/EEC - Official Journal L 174, 02.7.1997 p. 1 – 6

– Council Regulation (EC) No 411/98 of 16 February 1998 on additional animal protection standards applicable to road vehicles used for the carriage of livestock on journeys exceeding eight hours - Official Journal L 052, 21.2.1998 p. 8 – 11

– Commission Regulation (EC) No 615/98 of 18 March 1998 laying down specific detailed rules of application for the export refund arrangements as regards the welfare of live bovine animals during transport - Official Journal L 082, 19.3.1998
p. 19 - 22

Slaughter and killing:

– Council Directive 93/119/EC of 22 December 1993 on the protection of animals at the time of slaughter or killing - Official Journal L 340, 31.12.1993 p. 21 – 34

– 88/306/EEC: Council Decision of 16th May 1988 on the conclusion of the European Convention for the protection of animals for slaughter – Official Journal L 137, 2.6.1988 p. 25

APPENDIX 6

EU SUBMISSION TO WTO ON ANIMAL WELFARE AND AGRICULTURAL TRADE

In order to highlight the issue of animal welfare, the EU made the following submission in June 2000 to the special session of the WTO's Committee on Agriculture. The aim of this paper is to ensure that the liberalisation of trade does not undermine EU efforts to improve the protection of farm animals.

G/AG/NG/W/19

28 June 2000

EUROPEAN COMMUNITIES PROPOSAL

ANIMAL WELFARE AND TRADE IN AGRICULTURE

Introduction

Animal welfare is an issue of growing importance, notably in the European Community (EC). The European Commission is currently finalising a Report which analyses the provisions on animal welfare in non-EC countries which supply the EC with live animals and animal products. The information received from non-EC countries demonstrates that animal welfare is not only an "EC concern".

There is an increasing awareness among consumers and producers about the effects that breeding and farming techniques may have on animals, on their health and welfare and, not least, on the environment. More and more, consumers claim their right to make informed choice between products, including products produced to different welfare standards. To enable them to make such a choice they want to be informed about how farm animals are kept, transported and slaughtered. The producers, on whom such demands are made, want a stable and coherent basis on which to provide such information.

The EC has progressively adopted a body of legislation on the protection of animals, covering farming, transport, slaughter and experimentation. The EC and its Member States have also played a pro-active role in the development of international conventions for the protection of animals (e.g. during international transport, kept for farming purposes, for slaughter, for experimental and scientific purposes).

The objectives of the European Community:

Ensuring that trade does not undermine our efforts in improving the protection of the welfare of animals:

The EC believes that there are limits to the ways in which it should produce its food. The EC has established such limits in its legislation, in many cases based on the work of international conventions such as the Council of Europe. Many other countries have also established legislation in such areas. But there is a growing concern along consumers, producers, as well as welfare organisations, that while the WTO is working to enhance the framework for the liberalisation of international trade, which is the primary purpose of the WTO, the WTO does not provide a framework within which to address animal welfare issues. They particularly fear that in the absence of such a framework, animal welfare standards, notably those concerning farm animal welfare, could be undermined if there is no way of ensuring that agricultural and food products produced to domestic animal welfare standards are not simply replaced by imports produced to lower standards.

Different countries have varying cultural and ethical attitudes towards animals, and husbandry practices. The impact of high animal welfare standards on the relative competitiveness of their agriculture may be very different.

As a consequence, when a country provides for animal welfare standards that go beyond those applied by other trading partners, this can have a number of effects. Consumers may not be provided with coherent information on the welfare standards to which imported products are produced, and domestic producers may be economically disadvantaged.

This is why the EC believes that there is a genuine need to discuss animal welfare in the WTO context. The questions are real, whether from consumers or producers, and the WTO, as the leading international trade organisation, must be ready to address these questions. Given the interrelationship between animal welfare measures and international trade in agriculture and food products of animal origin, the EC considers that this issue must be addressed in the negotiations on agriculture within the framework of Article 20, while not excluding that animal welfare should be considered under other aspects of the WTO.

Avoiding trade protectionism:

The objective of the EC in raising animal welfare issues in the context of the WTO negotiations is not to provide a basis for the introduction of new types of non-tariff barriers.

The European Community has been and is often strongly criticised for referring to animal welfare. The EC is accused of hidden protectionism, and yet the EC no more applies its domestic animal welfare rules to imports from other WTO Members than other WTO Members. Where the EC has openly taken a different stance, is in drawing attention to the need to address the question of animal welfare within the WTO.

The EC is the world's second largest exporter of agriculture and food products, and the EC has no interest in allowing WTO members to adopt unjustified non-trade barriers. Our objective is to promote high animal welfare standards, to provide clear information to consumers, while at the same time maintaining the competitiveness of the EC farming sector and food industry.

Some of our competitors argue that the EC is trying to have established in the WTO provisions that could allow WTO members to refuse imports of animals and animal products from countries which did not apply the same welfare legislation as they do. Such an approach could end up dividing the world into different trading blocks, with exporters matching their animal welfare legislation to that of their principal import markets, and possibly some importers adopting high animal welfare standards for protectionist reasons. This is not what we are aiming at, as this would not further animal welfare.
Equally, the EC does not want to turn back or neglect the need to use trade to improve world prosperity, in particular the prosperity of the least developed countries. The EC is the world's biggest importer of agricultural products, from a vast range of countries, including many developing and least developed countries. We fully recognise the role of trade in helping to raise human living standards in developing countries. We only want to ensure that the process of liberalising world trade supports what we are building in the EC about the protection of animals.
In practice, our concerns with animal welfare are most acute in relation to highly-intensive and industrialised production methods for certain species, in particular poultry and pigs. This type of production is most often found in developed rather than developing and least developed countries.

Several ways of addressing the issue in the WTO framework:

The issue of animal welfare is a complex issue, which is at the crossroads of economic, ethical, animal health, public health, food production and legal issues. It is evident that the importance attached to animal welfare varies amongst WTO members. Nevertheless, the fact that animal welfare is an emerging trade issue has been recently acknowledged by the OECD, and the international conventions already in place and ongoing work within the Organisation des Epizooties confirm this.
We fully recognise the complexity of this issue, and the fact that each WTO member has the right to choose its own animals welfare measures adapted to their own circumstances. Nevertheless, the impact of trade liberalisation on animal welfare, in particular the welfare of farm animals and the transport of live animals, cannot be denied. WTO members should not hamper trade in agriculture and food products because of animal welfare. But equally, it is important to secure the right of those WTO members that apply high animal welfare standards to maintain them.
The existing WTO Agreements (Agreement on the application of Sanitary and Phytosanitary measures, the Agreement on Technical Barriers to Trade, and Article XX of GATT, as well as Article 20 of the Agreement on Agriculture) already provide a basis on which some of the issues related to animal welfare can be discussed. However, we are of the view that animal welfare should be globally addressed in a consistent manner within the WTO. The debate in recent times has shown very clearly the need to establish common ground and understanding on this important issue. That is why the EC wishes to raise animal welfare as an important non-trade concern in the current negotiations.

There are a number of ways in which animal welfare could be addressed. These are not mutually exclusive, and an outcome could be envisaged which encompasses a combination of a number of actions. These include:

- the development of multilateral agreements dealing with the protection of animal welfare. This approach would be facilitated by the achievement of greater legal clarity on the relationship between WTO rules and trade measures taken pursuant to provisions of multilateral animal welfare agreements;
- appropriate labelling, compulsory or voluntary, as provided for under Article 2.2 of the TBT Agreement, could facilitate the wish of consumers to make an informed choice as regards food products, whether domestically produced or imported, including as regards the production conditions, e.g. products produced in compliance with certain animal welfare standards;
- high animal welfare standards can increase costs to producers over and above any possible increased returns from the market. Trade liberalisation can exacerbate this effect and lead to unequal conditions of competition, and even to drive down welfare standards in exporting countries. This could fuel opposition to trade liberalisation and the WTO. It may therefore be necessary to consider whether it would be legitimate to provide for some sort of compensation to contribute to the additional costs where it can be clearly shown that these additional costs stem directly from the higher standards in question. For any such compensation to be acceptable, it would have to have no or at most minimal effects on trade and production.

To conclude, the EC believes that detailed examination of the approaches set out above would allow WTO members to develop an approach to address adequately the issue of animal welfare within the WTO, without conflicting with the long-term objective of trade liberalisation in agricultural and food products. The EC's work on animal welfare is continuing, and the EC reserves its right to make further submissions in the light of developments.

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APPENDIX 7

EC SUBMISSION TO THE DECEMBER 2001 INFORMAL SESSION OF THE WTO SPECIAL COMMITTEE ON AGRICULTURE

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MANDATORY LABELLING FOR AGRICULTURAL PRODUCTS

Note by the European Communities

1. The question of labelling of food and agricultural products whose objective is to provide information and protection of consumers is of growing interest and importance to many WTO members. Labelling in general has been discussed several times mainly, but not exclusively, in the TBT Committee. As Article 1 of the TBT Agreement specifies that agricultural products are subject to its provisions, it is appropriate in the context of the Article 20 negotiations on agriculture to examine developments on this issue under the TBT Agreement to see to what extent existing rules need clarification. The fact that this paper deals only with mandatory labelling in the context of the TBT Agreement is merely in order to focus on this type of labelling and should not be construed as implying a policy preference for mandatory over voluntary labelling nor that other WTO Agreements, like the SPS Agreement, may not be applicable to labelling requirements in certain specific circumstances.

2. The aim of clarifying TBT rules as they pertain to mandatory labelling should be to ensure that members can pursue their legitimate policy objectives, including relevant agriculture non-trade concerns, through labelling requirements for food and agricultural products, thereby supporting market led, least trade restrictive approaches to international trade. At the same time, clarification should avoid creating scope for allowing mandatory labelling to be applied in a way which would constitute a means of arbitrary or unjustifiable discrimination between members or a disguised restriction on international trade. Clarification should, therefore, be sought in full conformity with the basic concepts and principles of existing WTO agreements and should incorporate the relevant findings of WTO dispute settlement bodies. Moreover, clarification should neither add to nor diminish the basic rights and obligations of members, and should take into account, to the fullest extent possible, the needs of developing and least developed participants.

3. While this paper focuses on issues under TBT provisions, it is important not to lose sight of the close links between the WTO and the discussions in other relevant international fora in this field, such as the *Codex Alimentarius*. Where international standards for labelling of food and agricultural products exist, they should provide the basis for national labelling schemes in accordance with the provisions of the TBT Agreement. Accordingly, the EC continues to support efforts for the development of multilateral guidance on mandatory labelling for food and agricultural products. Whilst such work is ongoing, it is nevertheless important to clarify the situation regarding in particular the relationship between TBT rules and mandatory labelling schemes.

4. From the EC perspective, there are some developments since the TBT Agreement was concluded which may be relevant to this issue:

(a) The right of consumers to be fully and accurately informed is now more easily and widely acknowledged. Consumer demands for a broad range of information relating in particular to food and agricultural products has substantially increased in nearly all WTO members.

(b) The Appellate Body in its report of 12 March 2001 on "EC – Asbestos", while considering for the first time some provisions of the TBT Agreement, in particular the definition of 'product characteristics' in relation to technical regulation, refrained from ruling on the claims based on Article 2 of the TBT Agreement, leaving still untested the interpretation of the provisions of this Agreement. However, the same report confirmed consumers' tastes and habits as a general criterion for determining the 'likeness' of a product. Providing accurate and full information through labelling requirements may, therefore, be essential in allowing consumers to make an informed choice. Consumers perceive this information aspect as particularly important and sensitive for food products. Such labelling may also avoid consumer deceptive practices. Mandatory labelling schemes will, therefore, allow WTO members to set the level of consumer information and the level of enforcement they wish to achieve by their laws and regulations in their territory in conformity with the TBT Agreement.

(c) It appears increasingly necessary to dispel a misperception in some quarters that TBT rules could represent an obstacle to governments to address, via information tools such as labelling requirements, fundamental societal values or concerns relating to the way agricultural and food products are produced, processed and marketed.

(d) Similarly, concerns expressed in particular by some developing countries over the potentially negative effect of mandatory labelling schemes on trade, would also need to be addressed.

5. It was against this background that the EC in its comprehensive negotiating proposal called for the development of labelling schemes relating to the production and processing of food and agricultural products in order to meet consumers' concerns and to ensure that these schemes are appropriately covered by the WTO.

The EC proposes the following guidelines for the introduction of labelling requirements, which it believes to be consistent with Article 2 of the TBT Agreement.

(a) Firstly, the right of WTO Members to choose a level of consumer information and protection as regards the characteristics and the production and processing methods of food and agricultural products should be maintained.

(b) Depending on the level of consumer information and law enforcement chosen by a TBT member, mandatory labelling schemes for food and agricultural products can be the least trade restrictive alternative and they should also be presumed not to create as such an unnecessary obstacle to international trade.

(c) WTO members should ensure that, at all stages, the creation of a mandatory labelling scheme is conducted in a transparent manner, in particular the drafting of criteria and the operation of schemes. All interested parties should have the opportunity to be involved in a meaningful way as early as possible.

(d) Whilst the details of a mandatory labelling scheme depend on the particular agricultural product or category of products to which it applies, it would need to be able to provide information to consumers on the characteristics of a product, its process and production methods, including ways animals or plants are reared or grown, the organic or non-organic nature of the production process, the modified properties of agricultural products, etc.

6. As regards the problems that labelling measures concerning food and agricultural products may pose for developing countries, the EC believes that:

(a) appropriate mandatory labelling schemes for food and agricultural products could actually facilitate trade and improve market access, by reinforcing transparency and consumers' confidence and, thus, increasing the overall commercial value of products.

(b) aid to developing countries for the development of regulatory initiatives in the field of labelling for food and agricultural products should be considered as an important element of development assistance.

7. To conclude, the EC believes that it is important for Members to reach a common understanding, interpretation or guidance on the criteria and guidelines for the implementation of mandatory labelling requirements in respect of food and agricultural products, as described under paragraph 5 above.

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LIST OF ABBREVIATIONS

AoA	Agreement on Agriculture
CAP	Common agricultural policy
EC	European Community
EU	European Union
FAO	Food and Agriculture Organisation
GATT	General Agreement on Tariffs and Trade
LEAD	"Livestock, Environment and Development"
MTR	Mid-Term Review of the Common Agricultural Policy
NGO	Non-governmental organisation
OECD	Organisation for Economic Cooperation and Development
OIE	International Office of Epizootics
SCAHAW	Scientific Committee on Animal Health and Animal Welfare
SPS	Sanitary and Phytosanitary Standards
WTO	World Trade Organisation

Welfare Quality and the European Research Frameworks

Laurent Bochereau, DG Research

Welfare Quality was one of the first of the so-called "new instruments" (integrated projects and networks of excellence) to be funded in the Food Quality and Safety priority of the 6th Framework Programme. The integrated project represented a new ambition to fund large-scale, multi-strand projects that integrate a series of research areas and include a significant communication and training component. Welfare Quality admirably reflects these different components, interfacing social science with on-farm research with the aim of producing a workable system for reliably measuring animal welfare in livestock systems and, thus, making it possible to set up a coherent European standard on animal welfare.

Welfare Quality comes at an important time for animal welfare research in Europe. Following on from a series of smaller projects in the 4th and 5th Framework Programmes, it responds to the increased importance articulated by European consumers about how livestock are managed. It comes at a time when the world health organisation for animal health, the OIE, has for the first time adopted common guidelines[52] on animal welfare for its 167 member countries and also at a time when the directorate general for health and consumer protection, SANCO[53], is increasingly involved in bi-lateral agreements with non-European suppliers on high welfare production systems. It also comes at a time when SANCO is developing an action plan on animal welfare in order to lay out a clear path for the future. Europe is at the forefront of integrating and protecting animal welfare in its livestock production systems, and research will help to maintain this lead on the world stage and maximise the benefits of sustainable animal production in Europe.

In the new Framework Programme, the seventh, the Commission proposal[54] made in April 2005, and developed into the more detailed specific programme[55] published in September 2005, includes animal welfare of farm animals more explicitly than in previous programmes, reflecting its importance to consumers and, with its potential impact on trade, to European competitiveness. It is also an area that will need to interact effectively with the developments in farming that will take place over the next few years, whether these include a move to increased use of biotechnologies or, indeed, to more extensive and lower-input farming – both have significant implications for animal welfare.

The Welfare Quality Conference "*Science and society improving animal welfare*" addresses demands for improving animal welfare from European society and puts them into the context of European policy and the science needed to back them up. The meeting has participation from a wide range of stakeholders and organisers, and it is particularly relevant that it is held in the magnificent new premises of the European Economic and Social Committee in Brussels, whom we thank, together with all the participants and the Welfare Quality consortium for organising this important conference.

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[52] http://www.oie.int/eng/bien_etre/en_introduction.htm
[53] http://europa.eu.int/comm/food/animal/welfare/index_en.htm
[54] http://europa.eu.int/eur-lex/lex/LexUriServ/site/en/com/2005/com2005_0119en01.pdf
[55] http://europa.eu.int/comm/research/future/documents_en.cfm

Welfare Quality
Science and society improving animal welfare

European Economic and Social Committee

Short biographies of the key speakers

Blokhuis, Harry J.
Has been involved in animal welfare science for more than 25 years. His research focused on welfare related to housing and management and included studies on disturbed behaviours like feather pecking in laying hens. For many years Harry has been leading research groups studying housing, stress and animal welfare in cows, pigs, poultry and horses. At present he is Manager International Research Networks at the Animal Sciences Group of Wageningen University and Research Centre. He also has a professorship in Integrative Animal Welfare Science at the Swedish Agricultural University in Uppsala. He is coordinator of the Welfare Quality project and at present also coordinates another EU research project 'Welfare implications of changes in production systems for laying hens'. Harry Blokhuis is also chairing an action in the framework of COST (European co-operation in the field of scientific and technical research). The Action (no. 846) is called "Measuring and monitoring farm animal welfare". Harry is member of the Scientific Panel on Animal Health and Animal Welfare of the European Food Safety Authority (EFSA). He is also member of the Advisory Board of the Dutch Food and Consumer Product Safety Authority (VWA). He is Dutch representative in Technical Committee of COST in the domain Agriculture, Food Science and Biotechnology. Harry is also member of an ad hoc Group on killing for disease control purposes of the World Organisation for Animal Health (OIE).
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Is head of the Unit "Safety of Food Production Systems" European Commission - Research Directorate General. A laureate from Ecole Polytechnique and ENGREF in Paris, he earned a Master's degree from University of California and a PhD from the University of Paris VI. After spending several years working as a research project leader at CEMAGREF, he served two years in the French Ministry for Research. He then joined the European Commission in 1995 and worked for several years as assistant to the director for life sciences before taking his current Head
of Unit functions. His unit covers a wide range of topics including animal and plant production systems, animal health and welfare, food safety and traceability, as well as providing scientific support to European agriculture, rural development, forestry and animal health and welfare policies.

Bock, Bettina
Is Assistant Professor in Rural Sociology and Rural Gender Studies at Wageningen University, The Netherlands. Her research deals with politics of rural transformation and agricultural change in Europe. In addition she investigates gender-specific patterns of political participation and the gendered impacts of rural development and change. She is engaged in EU funded research regarding animal welfare, food safety and sustainable agriculture. She teaches in political sociology and rural gender studies and supervises several PhD-students in the field of rural governance, rural gender studies and sustainable agriculture.
Bock is vice-president of the European Society for Rural Sociology and board-member of the International Rural Sociology Association. She chaired the Scientific Committee of the 2005 ESRS conference in Hungary and is chairing the Local Organization Committee of the next ESRS conference to be held in Wageningen in 2007.

Busch, Lawrence

Is a University Distinguished Professor of Sociology and Director of the Institute for Food and Agricultural Standards Michigan State University and is coauthor or coeditor of ten books including Making Nature, Shaping Culture: Plant Biodiversity in Global Context (Nebraska, 1995), The Eclipse of Morality: Science, State, and Market (Aldine deGruyter, 2000), and most recently Agricultural Standards: The Shape Of The Global Food And Fiber System (Springer, 2005), as well as more than 100 other publications. He is past president of the Rural Sociological Society, past president of the Agriculture, Food, and Human Values Society and a fellow of the American Association for the Advancement of Science. Several years ago he was named Chevalier de l=Ordre du Mérite Agricole by the French government. Dr. Busch's interests include biotechnology policy, food and agricultural standards, agricultural science and technology policy, higher education in agriculture, and public participation in the policy process.

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Butterworth, Andy

Is a Zoologist and veterinarian with a background in practical assessment of production related disease and welfare related topics in farm animals with combination of practical experience from veterinary agriculture, business interests, and a research focus. He works at the Veterinary School in the University of Bristol UK in a group with a culture of research into practical approaches to animal welfare topics. He has studied, and advised on, animal production systems in a number of countries including S America, New Zealand, Canada, and Asian countries and has over 50 academic journal trade journal papers and popular articles in the area of animal use.

Evans, Adrian

Is a research associate on the Welfare Quality project at the School of City and Regional Planning at Cardiff University. His current research interests include the consumption of welfare-friendly products, the social construction of nature, informal science education, alternative historical geographies of practice and eighteenth-century material cultures. He has worked as a research assistant on the ESRC's 'science in society' research program (2003-4). He has held an Economic and Social Research Council Post-doctoral fellowship in Historical Geography at the University of Bristol (2002-2003). His PhD thesis, which was completed in 2001 under the supervision of Dr Paul Glennie, focused on historical geographies of material cultures and consumer practices. He also obtained an Mphil in Environment and Development from Cambridge University (1997).

Welfare Quality
Science and society improving animal welfare

European Economic and Social Committee

Gavinelli, Andrea

Since 1999 Andrea Gavinelli has been an administrator at the European Commission in charge of developing Community legislation on animal welfare in the framework of the Directorate General for Health and Consumer Protection.

From January 2003, with the creation of a specific sector of the Commission competent for animal welfare legislation and animal identification, he became Head of Sector.
The preparation of the legislation implies wide consultation with experts from the Member States of the European Union and the major stakeholders. He promoted the first web consultation of the Commission on animal welfare and the most recent European survey on the attitudes of consumers towards animal welfare. Prior to his current position, he was dealing with animal welfare legislation and cattle identification in the Italian Ministry of Health, Rome.

Born in 1965, he grew up in Novara, Italy, graduated as a veterinary surgeon at the University of Milan with a thesis on the behaviour of dairy calves during the first 30 days of life. During the last 8 years he has participated in all relevant negotiations in the European Union (Council and European Parliament) in relation to animal welfare legislation. He is member of the Working Group established in 2004 on animal welfare in the framework of the EU Chile Sanitary and Phytosanitary agreement.

Since 2002 he is the European member of the World Animal Health (OIE) permanent working group on animal welfare entrusted to develop the recently adopted standards and guidelines on animal welfare that have been adopted last May 2005 as an integral part of the OIE Terrestrial Animal health Code. In the working group he is having the role of representing the European views on the issue coordinating the positions of the EU members of OIE. He actively contributed to the organisation of the first Global Conference on Animal Welfare organised by the OIE in Paris (February 2004).
Since 1998 he has had the role of vice chairman of the Standing Committee of the European Convention for the Protection of Animals kept for farming purposes in Strasbourg.

Husu-Kallio, Jaana Riita

Is Deputy Director General *Of the European Commission – Directorate General Health and Consumer Affairs (*specific responsibility for Directorates D, E and F.)
She was born in 1959 in Heinola, Finland. She has a Specialised Veterinarian Diploma – Post graduate qualification in infectious animal diseases, University of Helsinki, a Docent of Food Microbiology (diploma as specialised lecturer) University of Helsink, a Doctor of Veterinary Medicine, PhD. Veterinary Medicine. Post graduate thesis on “Epidemiological and experimental studies of listeria infection” University of Veterinary Medicine, Helsinki, a Licentiate in Veterinary Medicine – University of Veterinary Medicine, Helsinki.

Jaana has been granted the following awards;

- Special Award from the Finnish Consumers’ Association on handling the crisis communication on BSE in 2001
- Special Award from the Finnish Agricultural Journalists’ Association on handling the crisis communication on BSE in 2002
- Multiple memberships and chairmanships at national level in different working groups (1988-2002 from laboratory diagnostics on animal infectious diseases to national public health programmes)

- Vice-President of the OIE Regional Committee for Europe (2000-2002)
- Vice-President of the International Foot and Mouth Disease Vaccine bank (2001-2002)
- Chairman of the scientific working group on listeria, International Dairy Federation (1989-1990)
- Specialised courses on management and leadership for high level Finnish civil servants and business managers (1994-2001) including the *Crossing the Boundaries Programme* for European female leaders (1999) and a three week intensified management course "Maanpuolustuskurssi" (2001)

Kaeppel, Reinhard

Is Assistant Vice President – Quality Assurance for McDonald's Europe

In his role at McDonald's, Dr. Kaeppel is accountable to European Management for leadership and alignment of Quality Assurance in Europe. This includes setting and maintaining standards, specifications, and policies from raw materials to the finished products, as well as handling known and emerging food issues.

Dr. Kaeppel has been with McDonald's since 1984, when he started as the Purchasing Manager for Switzerland. He participated in the development of the supply chain in many new markets, and built the Quality Assurance function in Europe, as well as the European Quality Center in Frankfurt, which includes a sensory laboratory, the food safety team, and several product specialists. From 1997 - 2000, Dr. Kaeppel was based at the Headquarters of McDonald's Corporation in Oak Brook, Illinois, in the position of Director International Quality Assurance. He holds a Ph.D. in Agricultural Science and is one of the founders of the McDonald's Agricultural Assurance Programme (MAAP), which includes farm management practices, animal husbandry and environmental requirements.

Keeling, Linda

Received her PhD in Zoology from the University of Edinburgh. Since then she has worked in Scotland, Canada and Sweden and is now Professor of Animal Welfare in the Department of Animal Environment and Health at the Swedish University of Agricultural Sciences. Her research has been mainly in the area of behaviour, asking basic behavioural questions related to social behaviour and motivation, as well as applied questions related to behavioural problems such as feather pecking and cannibalism in poultry and tail biting in pigs. More recently she has initiated research in horse and dog welfare. The Section of Animal Welfare, where she is the leader, is also responsible for education in animal welfare to veterinary and agriculture students as well as to animal welfare inspectors.

Kjaernes, Unni

Is a senior researcher at the National Institute for Consumer Research (SIFO); Oslo, Norway. She has long experience in comparative projects on food consumption and food policy issues, including studies of controversies and consumer scepticism towards meat. She coordinated the TRUSTINFOOD project funded by the European Commission and has also been a partner in several other EU funded projects. She is now the coordinator of the work package on consumers in the Welfare Quality project. She has a large number of publications within the field of food consumption, consumer concerns and food policy,

including a series of articles, reports and books in Norwegian and articles in English. A book on Consumer Trust in Food is forthcoming on Palgrave, co-authored by Alan Warde and Mark Harvey, University of Manchester. More information can be found on www.sifo.no

Longfield, Jeanette

Jeanette's degree in International Relations and a Masters in Development Studies led to work as a Policy Analyst at the National Council for Voluntary Organisations. After five years she moved onto campaigning at the Coronary Prevention Group. Four years on she became Co-ordinator of the National Food Alliance, alongside undertaking consultancy work for other health-related organisations. As Sustain's Co-ordinator, Jeanette liaises with the Food Standards Agency, contributes to a number of food policy committees, and appears regularly in the media representing a public interest view on food policy issues.

Manteca-Vilanova, Xavier

Was born in Barcelona in 1964 and is a Lecturer in Animal Behaviour and Animal Welfare, Department of Cell Biology, Physiology and Immunology, School of Veterinary Science, Universitat Autònoma de Barcelona, Spain. He has a BVSc, Universitat Autònoma de Barcelona, Spain, 1987, a PhD, Universitat Autònoma de Barcelona, Spain, 1992
(Supervisors: Dr. E. Goñalons and Dr. E. Fernández, Department of Cell Biology, Physiology and Immunology, School of Veterinary Science, Universitat Autònoma de Barcelona, Spain). and an MSc with honors (Applied Animal Behaviour and Animal Welfare), University of Edinburgh, United Kingdom, 1993 (see below for details). His main research interests are (1) farm animal welfare during transport and at slaughter, (2) social and feeding behaviour of domestic cattle and pigs, and (3) behavioural problems in companion animals and has around 50 scientific papers in peer-reviewed journals. He is a member of the Panel on Animal Health and Animal Welfare of the European Food Safety Authority.
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Marsden, Terry

Is Professor of Environmental Policy and Planning and Head of School of the School of City and Regional Planning at Cardiff University. He is also Co-Director of the UK Economic and Social Research Council funded research centre on Business Relationships,Accountability, Sustainability and Society (BRASS) which conducts research on the regulation of food and rural development. His main research interests are comparative agri-food studies, rural development and environmental policy. His recent major books include: The Condition of Rural Sustainability (Royal van Gorcum Press, The Netherlands, 2003); The Differentiated Countryside (Routledge, 2003); The Worlds of Food: power, provenance and place in the food chain. (Oxford University Press, in press 2006), and The Sage Handbook of Rural Studies (Sage, in press, 2006).

Miele, Mara

Has been a post doctoral research fellow at the School of City and Regional Planning at Cardiff University since January 2004. She is a member of the steering committee and the leader of subproject 5 (Science and Society Dialogue) of the Welfare Quality project. Her main research interests include: organic farming, rural development and the commercialisation of organic and "animal friendly" products. She is the primary author/editor of several books and articles on the market for organic production including the book "La Commercializzazione dei prodotti biologici in Europa" (The commercialisation of organic products in Europe, 1998). During the last five years she has played a leading role in several major European research projects. She was the principal investigator for Italy in the EU-Project (FAIR CT 94-0046) 'Quality Policy and Consumer Behaviour'. She coordinated the comparative analysis of the development of organic farming across six study-countries in the EU project DGVI-Fair CT-98-4288 'The Socio-Economic Impact of Rural Development Policies: Realities and Potentials'. She was the principal investigator for the Italian team in the EU-Fair CT-98- 3678 project 'Consumer Concern about Animal Welfare and Food Choice'. She was the national co-ordinator of the EU-project QLK5-CT-2000-01112 'Overcoming Barriers to Conversion to Organic Farming in the European Union through Markets for Conversion Products'.

Murdoch, Jonathan

Has managed large-scale research projects in the field of rural development, environmental and food policy funded by the OECD, the UK Economic and Social Research Council, the Welsh Office. Prof. Murdoch has participated to the EU COST A12 project on Rural Innovation and currently runs two projects: one funded by the ESRC, Title is 'Going Local' (100,000£, two years) looking at the CAP reform and local food chains. The second project is been funded by the Welsh Assembly Government, title 'The Rural Observatory' which is to examine economic and social changes in Rural Wales (three years project, 900,000£)

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Nielsen, Leif E.

Of the Danish Agricultural Council was born 1942 - domicile Birkerød, Denmark;
And has a Practical training in agriculture, Studies in law at the University of Copenhagen, a degree in agricultural economy and politics at The Royal Veterinary and Agricultural University Copenhagen,and was a member of the Danish Agricultural Council since 1968 (with exception of the two following

periods), and member of the Commission consultative committees for veterinary questions and animal velfare 1979/00; 1974/79 Principal administrator at the European Commission, DG Agriculture; 2000/03 Secretary General of the Federation of Danish Cooperatives, member of the Danish Competition Council and the board of the European Committee for Agricultural Cooperation in EU (COGECA); Member of the European Economic and Social Committee since 1994, Vice-President 2002-04 Axeltorv 3, DK-1609 Copenhagen V Phone: +45 3339 4511 len@landbrug.dk

Nilsson, Staffan

Has been a member of the European Economic and Social Committee, EESC, since 1995, when Sweden became member of EU and is president of Group III. He has been a farmer since 1976 with 30 milk cows (together with three hens and one cock). He was a member of the national board of Federation of Swedish Farmers, LRF, 1993-2004 and active at local and regional levels before that time.

Peelding, Dil

Is a veterinarian who has worked for the last 13 years on the policy and institutional aspects of natural resource management, in particular on animal welfare, service delivery and rural development. He also has 9 years experience as a large animal veterinarian in the UK.
He has worked within government departments across the world. He has recently completed five years of secondments to the UK's Department for International Development, and is now Senior Policy Officer for Farm Animal Welfare with Eurogroup for Animal Welfare.
Career experience includes:

- Animal Welfare
- Public sector reform;
- Developing pro-poor policy in the natural resource sector;
- Institutional development;
- Veterinary practice

Retureau, Daniel

Is of French nationality, was born in 1944, and is an honorary teacher in economics, DEA in history and law, specialized in human rights.A participant as NGO representative in UN
Human rights Commission and sub-Ctee, Geneva, 1987/96) member EESC since 1997, and a member of the section "agriculture, environment" for the past 8 years. His personal interests include participation in animal welfare working groups like the welfare of laying hens and transport conditions for live animals. Other interests include maritime safety, human rights and the new information and communication technologies, freedom of knowledge and citizens involvement in European lawmaking.

Roe, Emma

Is a Research Associate on the WelfareQuality project at the School of City and Regional Planning at Cardiff University. Her main interests are the geography of nonhumans (animals and plants) within agro-food networks, embodied consumption practices and social theory that engages with the 'material'. She has held an Economic and Social Research Council Post-doctoral fellowship in the Geography Discipline at the Open University (2003-4); lectured at the School of Geographical Sciences, University of Bristol (2001-3) where she also completed her PhD thesis in 2002, under the supervision of Professor Sarah Whatmore with the title 'Things becoming food: practices of organic food consumers'.

Sahlberg, Per-Åke

Was born 1941 and grew up on a dairy farm in Skaraborg Sweden.
After education to machine engineer and officer in the Signal Corps Reserves he studied agriculture engineering and management at the University of Agriculture at Alnarp.
In 1970 he took over his Parents Farm of 28 dairy cows and 100 ha of arable land and expanded to 110 dairy cows 140 young stocks and 170 ha of arable land. Since 1976 he has been active in the Farmers Union and Cooperatives, with about 150 000 members. He has been member of the main board of Farmers Union and president at his home region with 23 000 members. He has, besides politics and opinion building, been working specially with research, data processing and advice services for farmers. Per-Åke has been representative in the Faculty board of the Agricultural University, National Veterinary Institute, Farmers Data processing Company and other committees according to Farmers Representative. In 1982 he was elected member of the Swedish Royal Academy of Forestry and Farming and at the moment he is president of the Agricultural Sector.

He is member of the board of Swedish Employers´ Association and member of the Gesamtausschusses of German Agricultural Society (DLG). He took 1991 initiative to build up a regional research centre at Skara with Farmers Cooperatives, Agricultural University and Regional Developing Agency as partners and foundations. Special projects where Per-Åke is president are: Precision Farming in Sweden and Forage production.\From Nov 2002 he is President of European Dairy Farmers.
Per-Åke is married with Gunilla and has two children, one daughter project leader at Vodafone Telephone Company and one son data- and farm engineer. The son is just in the process of taking over the farm.

Sandøe, Peter

Peter Sandøe was educated at the University of Copenhagen (MA in philosophy 1984) and at the University of Oxford (D.Phil. in philosophy 1988). From 1985 to 1994 he held a series of research posts at the Department of Philosophy at the University of Copenhagen. From 1994 to 1997 he was Associate Professor of philosophy at the University of Copenhagen. From 1992 to 1997 he was Head of the Bioethics Research Group at the University of Copenhagen. Since September 1997 he is Professor in Bioethics at The Royal Veterinary and Agricultural University in Copenhagen. He is director of the Centre for Bioethics and Risk Assessment, an interdisciplinary research centre founded January 2000. Since 1992 he has served as Chairman of the Danish Ethical Council for Animals, an advisory board set up by the Danish Minister of Justice. As from August 2000 he has been president of The European Society for Agricultural and Food Ethics. Since 1990 the major part of his research has been within bioethics with particular emphasis on ethical issues related to animals, biotechnology and food

production. He is committed to interdisciplinary work combining perspectives from natural science, social science and philosophy.

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Veissier, Isabelle

Is a research director of the French National Institute for Agricultural Research (INRA). She qualified in Veterinary Medicine in 1983 and as a PhD in biology in 1986.
Since she joined INRA in 1983, she carried researches on the behaviour and the welfare of farm animals. She studied learning abilities of cattle, their reactions to social separation, and the way they adjust their behaviour to constraining environments. More specifically she carried researches on veal calves, studying their reactions to physical restriction, to lack of social contacts, to lack of solid foods or of suckling, and to human behaviour and amount of human contacts. Similar approaches are currently followed to study the welfare of fattening bulls and dairy cows. The links between animal welfare, animal production and product quality are addressed.
Isabelle Veissier is the head of the INRA team on *Adaptation and social behaviour* of ruminants used for farming (cattle, sheep). She represents the International Society for Applied Ethology (ISAE) at the *standing committee of the European convention for the protection of farm animals* of the Council of Europe. She is also largely involved in the coordination of research networks: the French network for researches on animal welfare (AGRIBEA, 130 members), the European COST action 846 *Measuring and monitoring farm animal welfare* (17 European countries) and the present Integrated Project *Welfare Quality*.
The main objective of her activities is to reconcile animal production and animal welfare by a better understanding of animals' perception of the world and the proposal of welfare friendly farming practices.

Publishable executive summary

Project full title	Integration of animal welfare in the food quality chain: from public concern to improved welfare and transparent quality.
Project acronym	WELFARE QUALITY
Contract number EU	FOOD-CT-2004-506508
Project Coordinator	Dr. ir. Harry J. Blokhuis, the Netherlands

Introduction to the objectives

The Integrated Project WELFARE QUALITY addresses citizens' concerns for the welfare of farm animals. In a 'fork to farm' approach the project recognizes that consumer's perception of food quality is not only determined by overall nature and safety but also by the welfare status of the animal from which it was produced. Thus, animal welfare is an integral part of an overall 'food quality concept'.

To accommodate societal concerns about the welfare quality of animal food products as well as related market demands, e.g. welfare as a constituent aspect of product image, WELFARE QUALITY develops reliable monitoring systems for assessing the animals' welfare status (from farm to slaughter) and a standardized conversion of welfare measures into accessible and understandable information, thereby addressing concerns and allowing informed animal product consumption as well as clear marketing and profiling of products. Our development of a European-wide food product welfare information standard with several grades or levels will promote transparency and offer guarantees about welfare issues and production conditions. This will allow consumers (and retailers) to purchase products of known standard.

WELFARE QUALITY also identifies and evaluates potential welfare risks, and develops and validates practicable strategies to improve farm animal welfare from farm to slaughter. This will improve animal welfare by minimising the occurrence of harmful behavioural and physiological states, improving human-animal relationships, and providing animals with safe and stimulating environments.

Implementation of the welfare monitoring and product information systems as well as the welfare improvement strategies identified here will support the development of husbandry systems and genotypes offering different facets of animal welfare, thus contributing to the diversification and societal sustainability of farm animal production in Europe.

The welfare assessment systems developed in the present project will also be used to identify strengths and weaknesses in animal husbandry systems and/or particular genotypes, to guide and monitor future remedial developments (e.g. new husbandry systems or breeding programmes that enable production of high quality, high welfare status food products), and to inform legislative initiatives.

Consumers, retailers and producers

Although animal welfare is now a major issue on the public agenda throughout Europe, and people refer to their role as consumers in public debates and in collective mobilization, these concerns are not reflected in the actual market shares of animal friendly products across Europe. Limited availability and insufficient information have been listed as important barriers, along with problems of trust.

Reviews made by WELFARE QUALITY in six countries (Sweden, United Kingdom, Netherlands, Norway, Italy, France) revealed that the level of social scientific knowledge about animal welfare topics

is very variable. Building on existing data, farm animal welfare seems to be an issue everywhere, but the degrees of interest, the framing of the interest and the connection between improved animal welfare and consumption practices vary considerably. Analyses of cross-country variations in how people relate to animal welfare will have to consider not only their role as buyers, but also as eaters of animal foods and as citizens. It is emphasized that consumer views and practices are very much influenced by the context in a specific country. For instance where they purchase their food (eg. fresh products from the local region sold through a butcher shop vs. globally sourced, processed and prepacked products sold through big supermarket chains), the conditions at farm level, existing standards and the enforcement of those, the public debate, etc. This paves the way for integrated analyses with other parts of the WELFARE QUALITY project.

Amongst welfare organizations there is some suspicion that 'the food industry, notably the retailers, have chosen to keep the public largely unaware of the state of modern food production'. In WELFARE QUALITY this hypothesis was taken as a starting point in assessing the (potential) role of retailers in the welfare friendly food chain.
A market audit revealed a whole variety of products bearing some relationship to animal welfare, but defining this relationship is far from easy. The communication of animal welfare through the market is unclear. In some countries, e.g. UK and Italy, there are examples of retailers using animal welfare as a competitive issue whereas there is very little evidence of this in the other study countries.

Research demonstrates that producers vary in their response to the public concern on animal welfare and increased regulation, but knowledge of what is driving and constraining animal friendly production among farmers is lacking. It is known that increasing production costs play a role as well as fear of risks to animal health and food safety. Animal friendly production is stimulated by farmers' wishes to improve the public image of animal production.

WELFARE QUALITY summarized and compared the main animal welfare schemes and regulations in the six focus countries and made a first sketch of farmers engaged in animal welfare schemes. A case-study among pig producers was started. By way of a semi-structured questionnaire pig producers are questioned about their participation in animal welfare schemes, their experiences and interest in and ideas about animal friendly production. The respondents include participants and non participants in such schemes as well as conventional and organic producers. At the end of the reporting year about half of the interviews were completed.

Welfare monitoring and assessment

WELFARE QUALITY aims to develop an integrated standardized methodology for the on-farm assessment of welfare in cattle, pigs and poultry from farm to slaughter, based on measuring the actual welfare state of the animals. Welfare is a multidimensional concept that cannot be monitored using a single measure and in WELFARE QUALITY parameters of behaviour, health, physiology, and performance are measured using existing and innovative methods. Such animal-based measures include the effects of variations in the way the farming system is managed as well as specific system-animal interactions. A set of resource and management measures will also be proposed so that causes of poor welfare can be identified on farms and remedial measures proposed.

Discussions in WELFARE QUALITY focused on the rationale for developing monitoring schemes and from these it was emphasized that for broad acceptability a welfare assessment scheme must cover all of the main welfare definitions. The five freedoms of the Farm Animal Welfare Council (1992) and the three principles defined by Fraser (1995) provided bases for a WELFARE QUALITY framework for monitoring systems. Within this framework animal-based, management-based and resource-based measures that could be used to monitor welfare on-farm, during transport and at slaughter for cattle, pigs and poultry were reviewed and identified. Each parameter was evaluated with regards to its validity, repeatability and feasibility for inclusion in a future monitoring scheme and this resulted in a list of potential parameters. Following extensive discussion by the WELFARE QUALITY consortium a synthesised list of parameters for each species was favourably reviewed by WELFARE QUALITY's Advisory Committee, showing that we have successfully addressed the concerns of a wide range of stakeholder groups. The results arising from the consumer focus groups as well as the representative consumer surveys in seven countries will indicate whether the chosen measures have to be completed by other measures, to fully address consumer concerns.

Continued development of the assessment system includes attention to several parameters, for instance to further standardize the measurement or to check repeatability. Further work also includes determining the way in which the measurements should best be integrated. Finally, monitoring systems (based on validated measures and integration) that meet the requirements of high sensitivity and low complexity will be proposed, tested and validated.

Practical strategies to improve animal welfare

The work on practical strategies in WELFARE QUALITY addresses six particular welfare problems: handling stress, harmful traits, injurious behaviours, lameness, neonatal mortality, and social stress. These areas represent key welfare problems that are perceived as important by the European consumers and they offer the potential to greatly improve animal welfare through innovative, high quality scientific research.

Research in pigs, beef and dairy cattle over the last two decades clearly demonstrated strong variability between farms in the animals' fear responses to humans. There are also strong links between the behaviour of the stockpersons towards the animals, and the animals' reactions and welfare. WELFARE QUALITY aims to improve handlers' technical knowledge with regard to animal welfare and the animals' perception of the human, to develop knowledge on husbandry practices and systems and to positively influence EU farmers' attitudes towards handling livestock.

Experimental and epidemiological studies show that provision of a foraging substrate reduces tail-biting in pigs, but the age at which that substrate is optimally protective is unclear. WELFARE QUALITY is working to identify the most effective strategy for its provision. Further, individual animals are followed from birth onwards to determine which behavioural and physiological measurements predict the subsequently development of tail chewing or biting behaviour and which pigs become recipients. Our results currently support previous suggestions that a 'tail-chew' test can be a practical option with reasonable predictive value for the occurrence of tail biting.

Despite significant effort to control feather and vent pecking in laying hens, both still impose a serious and widespread threat to the birds' welfare. Epidemiological studies have highlighted different aspects of the multifactorial origin of this behavioural problem. WELFARE QUALITY focuses on the relative importance of different risk factors for feather and vent pecking, particularly during rearing.

Despite the use of sophisticated feeding and management regimes many farm animals still suffer from various behavioural or health problems, which may seriously compromise their welfare and require frequent use of medication. It is strongly suggested that, in addition to environmental conditions, biological qualities of the individual animal are highly influential. WELFARE QUALITY therefore studies the relevant characteristics or traits underlying adaptability and their relationships with production-related traits and the ability to perform (in terms of welfare and production) in commercial conditions.

Large numbers of cows on European dairy farms suffer from locomotory problems (including lameness) for prolonged periods. This causes substantial welfare problems, e.g., behavioural restriction, pain and reduced longevity. By determining the relative importance of different risk factors and developing standardized protocols WELFARE QUALITY will provide a knowledge base that can be used as decision support for extension services and farmers and to guide the development of a lameness control programme for use on individual farms. Remedies for major risk factors that are applicable to dairy farms in general are also required.

In intensively reared broiler chickens, lameness is highly prevalent throughout Europe. Between 10 and 30 % of broilers may suffer from painful leg disorders, representing one of the most serious animal welfare problems. An experiment carried out in WELFARE QUALITY in which male broilers were fed either a standard diet or different diets on consecutive days suggests that that sequential feeding can be an effective way of reducing the incidence of leg problems.

Many environmental and genetic factors can influence piglet survival. There has been considerable focus on the influence of the farrowing environment on piglet mortality but the interactive effects of the farrowing environment, management and husbandry have received little attention. In addition there has been little work on the role of the sow and her litter in piglet mortality, and on how the sow-litter unit interacts with the environment. There is, however, growing evidence to suggest that characteristics of the sow and piglets are critical risk factors for piglet mortality in their own right, and that piglet mortality can be improved through genetic selection.

Social stress caused by aggressive interactions or competition for resources such as food or lying space can be a major cause of poor welfare in many species and housing systems. WELFARE QUALITY combines two different approaches to address the issue of social stress in pigs and cattle: use of specific genotypes (selection) aimed at decreasing aggressiveness and changes in housing conditions and feeding systems to reduce competition and aggression. In addition, we assess play behaviour as an indicator of welfare and ascertain how rearing conditions affect its development in calves and piglets.

Science-society dialogue and stakeholder interaction

In WELFARE QUALITY considerable effort is focused on analysing and addressing the perceptions and concerns of principal stakeholders (public, industry, government, and academia) and providing appropriate feedback. A dedicated website (www.welfarequality.net) was established in the first year and interaction with stakeholders and society in general was further stimulated through a electronic newsletter (Welfare Quality UPDATE). Educational and media initiatives, web-based platforms etc. will further enhance societal involvement. Representatives of many influential stakeholder groups, as well as academics, will attend a WELFARE QUALITY Workshop in Brussels later in 2005.

Issues related to the collaboration with other research groups, SMEs etc have also received attention. The basic principles here are to create transparency through open communication between while protecting each partner's interests. Related projects for possible future collaboration were identified

mainly from the point of improving knowledge transfer to potential users of the WELFARE QUALITY results.

Ensuring research of high quality

Within WELFARE QUALITY, leading European research groups with the most appropriate specialist expertise are integrated to build on European research strengths and to realise important societal and policy objectives. WELFARE QUALITY ensures that the research carried out is of high quality, timely and relevant, and that it receives broad support from academics and stakeholders. We also aim to assure that the output (papers, newsletters, reports etc) generated by activities within WELFARE QUALITY is of high quality. A crucial achievement in the first year was the establishment of the Scientific Board and the Advisory Committee, thereby ensuring effective and impartial evaluation of the progress of the research and of incoming proposals.

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SIXTH FRAMEWORK PROGRAMME

Welfare Quality
Science and society improving animal welfare

Participant list Welfare Quality project

Acronym	Participant name	Country
ID	ID-Lelystad, Instituut voor dierhouderij en diergezondheid	NL
ITP	Institut Technique du Porc	F
UWC	Cardiff University	UK
CIALYN	Coopérative Interdépartementale Aube, Loiret, Yvonne, Nièvre	F
DIAS	Danish Institute of Agricultural Sciences	DK
BOKU	University of Natural Resources and Applied Life Sciences Vienna	A
UNIK	University of Kassel	D
INRA	Institut National de la Recherche Agronomique	F
L'Elevage	Institut de l'Elevage	F
IRTA	Institut de Recerca i Technolgia Agralimentàries	E
ISA Lille	Institut Supérieur d'Agriculture Lille	F
VUWIEN	Veterinärmedizinische Universität Wien	A
KULEUVEN	Katholieke Universiteit Leuven	B
KVL	The Royal Veterinary and Agricultural University	DK
LIMOUSINE	UPRA France Limousin Selection	F
NFC	Teagasc - The National Food Centre	IRL
SIFO	National Institute for Consumer Research	N
NILF	Norwegian Agricultural Economics Research Institute	N
RIAH	Praktijkonderzoek Veehouderij BV	NL
SAC	Scottish Agricultural College	UK
SLU	Sveriges Lantbruksuniversitet	S
UAB	Universitat Autònoma de Barcelona	E
UGOT	Goteborg University	S
UMIL	Università degli Studi di Milano	I
UNEW	University of Newcastle upon Tyne	UK
UNILUND	Department of Business Adminstration, School of Economics and Management, Lund university, Sweden	S
UNINORW	Agricultural University of Norway, Department of Animal and Aquacultural Sciences	N
UNIPARMA	Università degli Studi di Parmai	I
UNIPD-DSZ	Università degli Studi di Padova-Dipartimento di Scienze Zootecniche	I
UNIPI	University of Pisa Dipartimento di Agronomia e Gestione dell'Agroecosistema- Sezione Economia'	I
UNIVBRIS	The University of Bristol	UK
UPMC-LIP6	Université Pierre et Marie Curie (Paris 6 University)	F
UREADAG	The University of Reading	UK
WUR	Wageningen University	NL
STATSVET	Department of Political Science, Stockholm University	S
CRPA	Centro Ricerche Produzioni Animalia SpA	I
VUZV	Vyzkumny ustav zivocisme vyroby, Prague	CZ
UNEXE	The University of Exeter	UK
UTM	University of Toulouse le Mirail	F

Welfare Quality
Science and society Improving animal welfare

Young researchers:
Training and Mobility on animal welfare

The European project *Welfare Quality* supports 'in lab' training of young researchers for the study of animal welfare. A training and mobility desk has been set up to help young researchers refine their professional plans, find a grant for a thesis or a post-doc position, and get into contact with potential host institutions in Europe.

This help is free of charge, within the budget limits of Welfare Quality.

For more information and contact
with the **Training and Mobility help desk**: visit
http://www.welfarequality.net/everyone/27181
or contact Isabelle VEISSIER (veissier@clermont.inra.fr)

For more information on the Welfare Quality project:
www.welfarequality.net

Colophon

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