

# A Holistic Approach to Consumer Research on Expectations Regarding Animal Husbandry

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## **Abstract**

Based on existing literature this paper reviews expectations of consumers, producers, other interest groups and citizens with respect to animal welfare and animal husbandry and indicates knowledge gaps as well. Findings enable us to develop a holistic research approach to analyse consumers' and other interest groups' preferences, expectations and concerns as well as requests of citizens. In order to reduce the gap between different perspectives regarding modern animal husbandry, these results will be used to improve communication between farmers and consumers or the society, respectively. It will facilitate the necessary integration of social concerns in the development of animal husbandry systems. An interdisciplinary network of researchers is aimed at.

**Keywords:** *Consumer research, farm animal welfare*

## **1 Background**

Animal husbandry and the welfare of farm animals have been topics in public discussions during the last years. Contemporary, modern animal husbandry seems no longer to match demands and concerns of consumer groups or other parts of the society. Consequently, a better understanding of currently diverging interests is needed which enables the animal farming to match better the needs of the society. Thus, animal husbandry systems could come closer to a societal optimum which will contribute to overcoming the emerging difficulties of animal production in Europe. Particular challenges in this regard are:

- heterogeneous society's and consumers' expectations and requests;
- difficult implementation of farming systems which are better equipped to enable a consent with consumers and society;
- consumers' reactions when new products will be offered at perhaps higher prices and with other properties.

When studying existent literature various loose ends in the ongoing discussion on consumer perceptions and expectations regarding animal welfare in animal husbandry are revealed:

- a lack of a concrete and uniform definition of animal welfare;
- a lack of overall studies where all concerned parties (society as a whole but also citizens, consumers, producers and other stakeholders like retailers or processors) are surveyed, compared and similarities as well as differences are presented in detail;
- imprecise definitions of the analysed group(s). Especially, it remains often an open question whether the society, citizens or consumers are regarded in the studies, and if relevant, how they are to distinguish;

- often isolated snapshots of current-interest topics instead of long-term studies are available. But it is assumed that attitudes, perceptions and decisions are changing over time. Results describing e. g. consumer expectations ten years ago may be obsolete by now. Repeated studies which show changing trends over time are an exception;
- only single or just few methods (descriptive, quantitative analysis based on surveys or focus groups) are applied per study although a broader range would lead to much better understanding;
- purely economic, sociological or scientific interpretation of results are put forward;
- underlying drivers of consumer behaviour and their associated decision making processes remain unclear as well as the role of different stakeholders ; and
- in general, there is just a weak understanding of what consumers really have in mind when they think about animal welfare.

With respect to the transferability of research outcome into practice frequently a gap between stated and revealed preferences and willingness to pay for additional animal welfare is addressed (Andersen, 2011; Verbeke et al., 2010). Producers, industry, and politicians often interpret this difference as prove for hypothetical bias and lacking validity of results.

Difficulties arise when asking consumers for their preferences and willingness to pay for animal welfare products. First, consumers may not only answer as consumers but also as citizens. Well-designed questionnaires are needed in order to identify the perspective the respondents take. Second, at the place of purchase consumers face various constraints, such as budget constraints, lacking information, or time shortage (Selfa et al., 2008). Third, lacking availability of animal welfare products may hamper consumers to reveal their preferences for these products when those are not offered in preferred shopping places, or not identifiable animal welfare products, e. g. by poor labelling or by poor advertising. Thus, an important aspect is animal welfares' ambiguity - it is not just black or white. The same holds true for producers. Possible that they exactly know what might be improved on their farm but they are still businessmen who need to think and act in an economic way.

Although, there are already numerous articles providing good insights systematic long-term studies are often missing. Currently, the Institute of Market Analysis and Agricultural Trade Policies of the Thünen-Institute is developing a research platform "Agriculture and Consumers" aiming to implement a holistic approach which offers the opportunity for long-term and continuous research where animal husbandry and animal welfare are among the focal research topics.

In this article, the main objective is to present a literature review on the expectations of consumers, producers, and other groups of society regarding animal husbandry and animal welfare. Gaps of existing studies are elaborated in detail and considerations to the outline for further research are given. The paper is organised as follows: Chapter two presents a literature review on societies', consumers', producers' and other interest groups' views on the definition of animal welfare and on products or processes improving animal welfare. An overview of applied methods to analyse attitudes and expectations regarding animal welfare products is given as well. The chapter closes with some examples of different already existent approaches to improve animal welfare. Chapter three provides a description of our

research approach and an exemplary presentation of the implementation for the question of animal welfare. A final section draws some conclusions.

## 2 Literature Review

What do people have in mind when talking about animal welfare and acting in accordance to it? The answer to this question depends on the people being asked: In principle, the literature review reveals the requirement to separate four different groups: society or citizens, consumers, producers and other interest groups. Unfortunately, there is no clear cut between these groups. Everyone, living in a certain country belongs to its society. Subgroups of the society are those people paying taxes or those who have civil rights and, thus, can be referred to as citizens of the country. Hence, consumers as well as producers are always part of this society as well and usually citizens of the country. But, not every citizen is a consumer e. g.; a vegetarian does not consume meat. Moreover, producers are also not just part of the society and potential citizens, they are also consumers. Additionally, other interest groups like NGOs, retailers or processors have specified expectations and definitions regarding animal welfare and animal welfare products. They are also part of the society, quite often citizens and/or consumers, too. Therefore, the answer to the question what people have in mind if they talk about animal welfare is not straight forward. Within the following literature review, we are going to answer that question for the four most often regarded groups: society, consumers, producers and others. Hence, not all authors do always distinguish between the society and citizens. Thus, within the group “society” all articles regarding either the society or citizens are pooled.

### *a. Animal welfare in the light of different groups of society*

Several studies tackle issues, which are relevant from the society’s perspective regarding animal welfare. What do they understand when talking about animal welfare?

Respondents’ perception of animal welfare is well described using one single word: naturalness. This generic name can be classified in higher-ranking aspects: housing system (e. g. stock density, sufficient space including access to grassland, distraction material like straw, daylight, fresh air and rest), feed (e. g. sufficient feed and water, natural feed, especially the absence of genetically modified feed), medicines (e. g. avoidance of inappropriate chemicals), breeding methods (e. g. no artificial insemination, no separation of calf and dam) and daily farmer-animal contact. Animal welfare production methods result in healthy, satisfied and calm animals, physical and mental wellbeing, the absence of mutilations and longer life times compared to intensive animal husbandry (Boehm et al., 2010; Boogaard et al., 2006, 2008, 2010b, 2011; Evans et al., 2008; Vanhonacker et al., 2010). It became also obvious that respondents realise the two sides of modern animal husbandry: aspects like modernity (e. g. clean and hygienic working practice) are well esteemed but on the other side a traditional and natural type of farming (family farming, animals interests) is also valued (Boogaard et al., 2010a, 2011).

When thinking about animal welfare society groups seem to distinguish between different animal species. It is argued that laying hens have the poorest living conditions, followed by pigs whereas dairy cows are perceived to be kept under much better conditions (Boogaard et al. 2011; European Commission, 2005, 2007b; Evans et al., 2008). Asked for the three

species that should be protected as a priority laying hens, broiler and pigs were mentioned (European Commission, 2005, 2007b).

Finally, the overall perception of animal welfare in Europe seems to be not that bad. Approximately 60% of about 29.000 questioned citizens of EU-25 countries indicate that the welfare standards have improved during the last decade. Nevertheless, 77% think that further improvements are required (European Commission, 2007a).

It is difficult to conclude from existing research on the relative importance of animal welfare compared to other product attributes, mainly because of very variable research approaches. In a study conducted by Pouta et al. (2010) country of origin was the most important attribute, followed by animal welfare production and organic farming. Other research showed that outdoor access for animals was more important than environmental protection, type of litter, physical product quality, farm size and fat content in pig production (Krystallis et al., 2009).

Other studies deal with issues, which are relevant from the consumers' perspective regarding animal welfare.

Consumers' perception about main animal welfare concerns is similar to the one of the society. Mentioned aspects were physical health, housing system (e. g. deep litter boxes, indoor-outdoor boxes, stock density, sufficient heating, freedom to move, protection), high quality feed (e. g. enough food, no traces of medicines or pesticides in food), freedom to fulfil natural desires, type of castration (regarding pigs), mobile slaughters as an alternative to transportation to the slaughterhouse, no mixing of animals from different herds and a personal farmer-animal relationship (Evans et al., 2008; Harper et al., 2002; Liljenstolpe 2008; Skarstad et al., 2007; Te Velde et al, 2002). Therefore, animal welfare products are seen as indicators for safe and healthy food (Harper et al., 2002). Liljenstolpe (2008) evaluated the relative importance of several animal welfare attributes (regarding pig production). A stock limit of 100 pigs was ranked higher than mobile slaughter, a stock limit of 200 pigs and the fact that there was no mixing of unfamiliar pigs.

Poor living conditions were perceived for chickens and pigs, whereas cows were seen to be kept better. Sheep were perceived to have the best living conditions (Evans et al., 2008).

Regarding the relative importance of animal welfare compared to other product attributes does not have a large weight. However, studies differ a lot in this respect. While Bernués et al. (2003) show that animal welfare is somewhere in the middle of different attributes (feeding, origin of meat, environmentally friendly, animal welfare, storage, processing, animal breed) Sepúlveda et al (2011) found that animal welfare and environmentally friendly production were the two lowest-rated attributes. Here, more important were direct appraisal of meat at the time of purchase, animal feeding, price, quality labels, and correct disease control. But when respondents are segmented it was obvious that for some consumers animal welfare was of particular importance.

Consumers' purchase decisions are often dependent on production labels like "free range", "outdoor access" and "organic". These labels are considered as indicators of higher welfare standards and products were perceived to be healthier due to fewer potential stress-toxins, fewer routine medicine or more natural feed and to have a higher quality as well as better taste (Evans et al., 2008).

Some studies deal with producers' perception of animal welfare. Again, results are quite similar to the ones achieved for society groups and consumers. They describe animal welfare

as the provision of the animals' basic biological needs (e. g. enough food, sufficient heating, and protection), good health, high zootechnical performance, and animals' opportunity to express natural behaviour (Skarstad et al., 2007; Te Velde et al., 2002). Results of Vanhonacker et al. (2010) are equal for producers and the society. Within their research animal welfare can be described by the dimensions animal health, suffering and stress, ability to engage in natural behavior, housing and barn climate, feed and water, transport and slaughter as well as human-animal relationship.

Animal welfare is not very important when product attributes are ranked. Environmentally friendly and animal welfare production were the two lowest rated attributes (like for the consumers). Producers gave animal welfare a significantly lower score than consumers. More important are the also above-mentioned attributes appraisal of meat at the time of purchase, animal feeding, price, quality and production labels, correct disease control (Sepúlveda et al., 2011). Franz et al. (2010) confirmed these results.

As already mentioned, all other interest groups being involved in the topic of animal welfare are compiled in 'other interest groups'. These include NGOs, researchers, processors and retailers. They all have defined expectations regarding animal welfare. Pouta et al. (2010) discussed with animal scientists about welfare aspects of poultry production. They defined animal welfare in poultry production with vegetarian feed containing 65 % cereal, approximately 14 birds/m<sup>2</sup>, outdoor access during summer time, 5 weeks of rearing time, perches as a stimulus and a maximum of 2 hours of transportation time to the slaughterhouse.

Literature concerning other interest groups is very thin. An obvious reason is that they comprise on the one hand NGOs and animal welfare activists and on the other, processors, retailers and the like. For first category it is an apparent objective to influence the society, in general, in such a way that its members will act accordingly. Thus, very outspoken views and activities by these groups are required. In turn, from a scientific perspective and perhaps from the perspective of funding organisations, a real added value of a survey capturing those expectations may not exist, since it is freely available. In contrast, expectations of processors and retailers are much more easily enforced due to their higher market power. However, they may not want their opinions to become public and by that also known to their competitors. Hence, a better transparency concerning their views would also help to align the product development to the societal needs.

Although this literature review is far away from being complete it is obvious that there are many different perceptions of animal welfare even within the same societal group. This will lead to several difficulties if, e. g., an animal welfare label is to be established. All parties concerned have a range of opinions and concerns, varying implicit and explicit expectations and different languages (scientific versus laymen language).

To summarise, existing studies provide some insights into what consumers expect regarding the products from animal husbandry: high meat quality, no chemical residues (medicines or pesticides) and moderate product prices. Concerning animal welfare naturalness, particularly animals' possibility to behave naturally, their physical health, outdoor access, high quality feed, and a personal farmer-animal relationship were mentioned by consumers. Producers' perception covers aspects like meet the animals' basic needs, good animal health, animals' ability to express natural behaviour, productive animals and good economic performance. The society expects naturalness in animal husbandry with regard to housing, outdoor access, natural feeding, no artificial insemination as well as healthy, satisfied and

calm animals, which are physically and mentally sane, and a personal farmer-animal relationship.

For all groups together, only a few studies exist where the relative importance of animal welfare is discussed in a comparative manner. Although most of them found out that animal welfare is of interest for many people, it does not seem to be more important than other intrinsic product attributes on average.

*b. Methods used to analyse people's perceptions and preferences regarding animal welfare*

Several methods and combinations of methods are used for analysing people's perceptions of animal welfare.

To get a deep insight in respondents' perceptions and expectations of animal welfare focus groups are a very popular method employed by numerous authors (Evans et al. 2008; Harper et al., 2002; Heid et al., 2011; Skarstad et al., 2007). Other qualitative methods are semi-structured interviews that were used by Franz et al. (2010), Skarstad et al. (2007) and te Velde et al. (2002). The latter used the laddering technique additionally. Written or oral surveys were another main method to capture respondents' perceptions. Questionnaires were analysed using descriptive statistics (European Commission, 2005, 2007a, 2007b) and/or multivariate data analysis like factor, cluster or conjoint analysis (Boogaard et al., 2006, 2008, 2010a, 2010b, 2011; Krystallis et al., 2009; Selfa et al., 2008; Sepúlveda et al., 2011). Some authors used combined methods: they used focus groups to set up surveys in order to reach more respondents (Bernués et al., 2003; Liljenstolpe, 2008; Pouta et al., 2010; Vanhonacker et al., 2010). Surveys were analysed with several quantitative methods like factor analysis (Bernués et al., 2003; Vanhonacker et al., 2010), cluster analysis (Bernués et al., 2003) or choice experiments (Liljenstolpe, 2008; Pouta et al., 2010).

Two very different approaches were carried out by Boehm et al. (2010) and Andersen (2011). The former analysed web-based social media to get information about the topic and the latter analysed household panel data.

Altogether, we found that a good variety of different methods is used. But we also think that just a combination of methods will lead to meaningful results. For the topic of animal welfare we would suggest focus groups to get a deep insight in respondents' perceptions and expectations, quantitative surveys to reach more respondents and to carry out other analyses and in the end panel data to analyse revealed purchases.

### **3 Animal welfare in practice**

As an indicator for producers' and consumers' concern the availability of animal welfare products in the market may serve. In the end, it is usually the market share, which is used to evaluate consumers' preferences. However, particularly in new market segments it is difficult to deduce from the market share of specific products on consumers' preferences because of the lacking availability as well as lacking information and communication activities.

Nevertheless, in order to close the gap between sciences and practice this section gives a short overview on existing approaches and initiatives aiming at increased animal welfare in contemporary animal husbandry.

Animal welfare aspects are to be found in the organic farming standards and in specific animal welfare standards. The roots of almost all of these standards lay in the 70ies and 80ies of the last century. Various activities were initiated in order to develop alternatives to existing farming practices. Motives of the founders of the animal welfare labels were mostly ethically driven regarding animal health and welfare, whereas environmental concerns being not as relevant. In contrast, the organic farming movement was targeted at environmental concerns, other concerns like social and animal welfare aspects also being important. Animal welfare standards and organic farming standards are closely related and have large intersections. Comparing animal welfare and organic standards with respect to animal welfare regulations no general conclusion can be drawn which ones grant higher animal welfare in practice, since there are large differences between existing animal welfare standards.

Common organic farming standards in the EU are defined by the EU Regulation 834/2007 on Organic Farming. Overall aims of these standards are (1) establishing a sustainable management system which respects nature and animals, contributes to biological diversity and makes responsible use of resources, (2) producing products of high quality and (3) producing a wide variety of food and other agricultural products without affecting the environment, human health or animal health and welfare negatively (European Commission, 2008). According to the underlying principles of this regulation, the physical and ethological needs are to be respected in animal husbandry. Animals must have access to free-range and pasture whenever possible, stocking densities must avoid overgrazing, erosion or pollution of soil and water (Schmid, 2009). Additionally, specific rules exist by animal species aiming at the integration of animal welfare in farming systems. Generally, farm animal welfare is one of the core values of organic farming (Lund et al., 2001). Several publications indicate that the organic sector was successful in communicating also the animal welfare aspect of its standards, since animal welfare is one of the frequently mentioned motives for purchasing organic food in Europe (Torjusen et al. 2004; Zanolli et al. 2004; Padel et al., 2005; Hughner et al. 2007; Zander et al., 2009).

In contrast to organic farming, there are no common standards regarding higher animal welfare at the European legislation. Nevertheless, there are several initiatives, which aim at producing and offering such products in the markets. These initiatives are founded by animal welfare organisations, farmers, consumers or retailers. They created standards and labels in order to communicate with customers. Switzerland seems to be strongly engaged in increasing animal welfare standards, since there are various private labels like KAGfreiland, Naturafarm, Engagement or Swiss Premium Rindfleisch. Further private labels are Neuland in Germany, Label Rouge in France, Freedom Food in UK and Scharrel meat in The Netherlands (Deimel et al., 2010).

The following section shortly describes three examples of specific animal welfare standards in animal husbandry. Although all three initiatives have a rather long history they have been initiated by different stakeholders.

KAGfreiland is a Swiss initiative founded in 1972 by consumers. KAG stands for 'consumers working group for animal and environmentally friendly animal husbandry' (in German: 'Konsumenten-ArbeitsGruppe für tier- und umweltfreundliche Nutztierhaltung'). The founders created standards for animal welfare husbandry and a label for the market, and since mid seventies KAG products can be found in Swiss markets. The focus is on access to open air and pasture for all animals and a ban on GMO feed (KAGfreiland, 2011a). The KAGfreiland regulations are in accordance with the animal protection law including the

related directive, as well as governmental programs. However, KAGfreiland standards are reported to be the highest regarding animal welfare (KAGfreiland, 2011b). Products are labeled with the KAGfreiland sun. Additionally to market activities KAGfreiland members were politically active for farm animal welfare and in 1993; they were successful with the ban of egg batteries.

A German initiative is 'Neuland' – association for animal and environmentally friendly animal husbandry – (in German: Verein für tiergerechte und umweltschonende Nutztierhaltung e.V.) was founded in 1988 by five NGO's among which the German Animal Humane Society and the BUND<sup>1</sup> (Neuland, 2011a). Production criteria are straw litter, free-range all year, no tethering, only domestic feed, no GMO's and production on family farms (Neuland, 2011b). Neuland promises farmers to buy and market all their meat at fair prices. The market share of Neuland-meat is still small.

Label Rouge poultry is a French initiative founded in 1965 by a group of poultry breeders who were concerned about animal welfare in poultry production. They aimed at traditional farming and at offering consumers high quality products (Label Rouge, 2011). Indicators for animal welfare are:

- the use of slow growing breeds, well adapted to outdoor conditions and providing excellent meat,
- outdoor access with lot of space, grass and shade,
- 100% feed from plants, mainly based on cereals,
- good health and hygiene conditions.

According to their homepage, in 2009 about 6000 farms were producing chicken meat and eggs mainly for the domestic parts. Exports are to Belgium, Germany, Netherlands, Switzerland and the UK (Synalaf, 2011). In volume, the market share of Label Rouge chicken was 50% in 2009, followed by industrial broilers with a share of 28% and organic of 9% (Synalaf, 2011).

#### **4 Implementation by consumer research**

In the following, a holistic approach to analyse consumers', producers', societies' and other interest groups' attitudes and expectations towards animal welfare and animal welfare products is presented. The approach is characterized by the following three attributes: long-term, coordinated and integrative.

Long-term research: It is unlikely that attitudes and expectations towards animal welfare are constant over time. Singular surveys or ad-hoc opinion polls provide a very good snapshot but the findings are always related to a certain period. The time span of the period is not defined and it depends on several factors of which many are uncertain and not predictable, such as catastrophes or diseases. Hence, long-term and coordinated consumer research will help to detect changes in attitudes and expectations. Also the impact of different information and knowledge about animal welfare issues and trade-offs between different goals need to be investigated.

Coordinated research: The holistic approach includes networking activities. There are already many very good studies in different fields of consumer research. Unfortunately,

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<sup>1</sup> BUND: Friends of the Earth Germany, a non-profit, non-partisan, and non-confessional federal grassroots NGO



there seem to be only weak interactions between researchers in this field. Research activities are described as scatter plots in which researchers hardly know each other (Oehler et al., 2011). Our approach aims at linking researchers who are currently working in the field of expectations and preferences regarding animal husbandry.

Integrative research: An interdisciplinary network of researchers will be established since research needs input from several research disciplines. Additional to knowledge about surveys or experiments it is crucial to have profound knowledge about the object of research. We seek to combine scientific findings from different disciplines. For example in the field of animal husbandry technical – natural science analyses should be matched with socio-economic analyses, i.e. consumer research. An early feedback between both fields allows improvements in the development of animal husbandry systems at an early stage.

Consumers are in the focus of many agents. Companies want to optimise their existing products or develop innovations according to consumers' wants, researchers want to analyse their behaviour, NGO's want to influence them in order to support their own aims and associations and policy wants to protect consumers or strengthen their position in the market. Thus, value would be added to our approach by linking all these agents instead of working separately.

From the methodological point of view, various approaches are applied to determine and analyse consumers' attitudes, expectations and preferences regarding animal welfare: conduction and analysis of focus groups, surveys and analysis of panel data.

As "a method for eliciting respondents' perceptions, attitudes and opinions" (Wilson, 1997: 209) focus groups are moderated group discussions that focus on one topic such as animal welfare. Focus groups take advantage of group interactions to determine participant's motives, which cause their behaviour. Each participant will be confronted with perceptions, opinions or ideas of other participants and may have to justify her or his own perception, opinion and ideas. Hence, "individual response becomes sharpened and refined, and moves to a deeper and more considered level" (Finch et al., 2003: 171).

Knowledge gained from exploratory focus groups will be used to develop questionnaires for quantitative surveys. These surveys will elicit consumers' motives, attitudes, expectations and preferences using standardised and structured questionnaires. By including socio-demographic and psychometric characteristics of respondents, models, which explain consumers' expectations and behaviour, can be estimated. Usually, choice experiments or contingent valuation are methods for the identification of consumers' preferences and their willingness to pay. These stated preference methods can be subject to hypothetical bias (Andersen, 2011). Thus, the validity of the results is reduced since the consumers react differently in reality than in the experiment.

While surveys elicit stated behaviour and preferences, panel data are used to analyse revealed purchase behaviour. Household panels provide ideal information about consumer behaviour because they document real purchase behaviour. Usually, panellists use handheld scanners to scan barcodes of all products they buy and record respective prices (Brooks, 2010). Products without barcode are normally compiled manually based on codebooks. Such data can be captured at different frequencies such as daily, weekly or yearly. Panels usually include socio-demographic characteristics of participating persons or households as well which can be linked to their purchases (Lusk, 2011). Usually, additional interviews are conducted with the panel members from time to time to capture psychographic variables. Although panel data offer the possibility to compare stated with real purchase behaviour

one problem still exists and has to be kept in mind: Only purchases of existing products can be monitored. Regarding animal welfare products, the market and thus the possibilities of panel data analysis are still very limited.

## 5 Conclusions

Although we found abundant literature, research on perceptions and expectations regarding animal welfare is still not well investigated in detail. The reasons are diverse: animal welfare is an issue, which is very difficult to define precisely. Moreover, different farming practices in different countries make common standard setting even more complicated. Consequently, joint definitions and standards with respect to farm animal welfare are missing. That is why a common understanding of animal welfare has to be created first. And also the regarded groups (society as a whole, citizens, consumers, producers, other interest groups) have to be defined correctly to make research studies comparable.

Another less researched topic is the relative appraisal of different product attributes, e. g. animal welfare versus price, or quality, or safety, are missing. However, knowledge on relative preferences would be required to better align producers' and consumers' as well as processors' and retailers' interests. The same holds true for the relevance of specific aspects of animal welfare with respect to different animal species. Additionally, studies covering the whole supply chain are missing, in order to generate a common understanding and to bring together producers and consumers within a medium term perspective. To overcome the obstacles, communication between consumers, citizens and producers in all directions needs to be improved.

Thus, future consumer research on animal welfare needs to deal with two superior topics: First, analysis of consumers' preferences and concerns and second, analysis of requests of the society. Results of both research topics will have to be used to improve communication between all involved groups (also including producers, NGO's, other interest groups), respectively, in order to reduce the gap between different perspectives.

Regarding the market solution, the task consists in better mutual understanding by improved communication and to reconnect producers, processors, retailers and consumers alike. The implementation of higher animal welfare standards in animal husbandry causes higher production costs. In turn, these costs would lead to higher consumer prices. However, a precondition hereof is that consumers or buyers, respectively, addressed by the products have an additional benefit or higher utility consuming these products and thus reveal an additional willingness to pay. Here, different challenges exist: buying decisions of consumers are influenced by various interest groups while, at the same time, the consumer is only loosely connecting the final product with the production process and animal welfare. Additionally, the consumer has to take his/her budget constraint into account. Only if increased willingness to pay will compensate higher production costs products can be successfully established in the market.

The second topic relates to the alignment of societies' expectations and contemporary animal husbandry. For this aim, citizens' expectations will have to be identified. By means of extensive discussion processes with producers and all relevant interest groups, animal husbandry systems will have to be developed which on the one hand allow farmers to succeed and which on the other hand are backed up by society.

Establishing a holistic research approach will facilitate the integration of social concerns in the development of animal husbandry systems. Long-term analysis of consumers', producers', other interest groups', citizens' and societies' expectations concerning animal welfare and animal husbandry built up on an interdisciplinary network of research, industries, NGOs and other stakeholders. It will provide a broader insight into perceptions, attitudes and motives which finally will allow to develop promising communication strategies and to improve societies' relation with contemporary animal husbandry.

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