



FOR EXTERNAL PEER REVIEW

**Draft Good Practice Note: Improving Animal Welfare in
Livestock Operations**

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Draft Good Practice Note: Improving Animal Welfare in Livestock Operations

Introduction

Worldwide, the recognition of animal welfare as an important element of commercial livestock operations has increased markedly during the last decade and is still increasing. This has far-reaching implications for an industry with complex historical and cultural roots.

Animal welfare is being addressed not only by governmental agencies and academic institutions, but also by a growing number of professionals at different points in the agricultural supply chain. A number of regional and global initiatives have therefore emerged to provide guidance on acceptable practices to actors ranging from individuals caring for animals on farms to large-scale commercial enterprises providing animal-based products from different livestock systems. Many corporate groups—from producers to retailers—also acknowledge social and environmental responsibilities and pursue programs designed to enhance animal welfare.

Animal welfare is first and foremost important for the animal. Farm animals can feel, experience, and suffer. Animal sentience has been recognized by European Union law since 1997¹ and forms the basis of many standards of animal welfare around the world.

Animal welfare is just as important to humans for reasons of food security and nutrition. Better management of, and care for, livestock can improve productivity and food quality, thereby helping to address nutritional deficiencies and food shortages as well as contributing to food safety.

Higher animal welfare standards are also seen to be a prerequisite to enhancing business efficiency and profitability, satisfying international markets, and meeting consumer expectations. Businesses that address, or enhance animal welfare, are likely to win or retain a competitive advantage in the global marketplace in a variety of ways, such as

¹ Protocol on Improved Protection and Respect for the Welfare of Animals, Treaty of Amsterdam 1997; European Union. 2010. Article 13 in the Consolidated Version of the Treaty on the Functioning of the European Union, Official Journal of the European Union, C83, 30.3.2010. <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:C:2010:083:SOM:EN:HTML>

- potential cost savings due to improved human-animal relationships and other welfare benefits, which can lead to increased productivity;²
- realizing growing market opportunities for food produced in animal welfare friendly systems;
- becoming the producer of choice for retailers and consumers concerned with animal health and welfare, food safety and quality, human health, and the environment.

IFC is committed to work with and support its clients in reducing losses, potentially increasing productivity, and/or accessing new markets through the application of sustainability principles, including animal welfare standards. This Good Practice Note contributes to IFC's continuing commitment to provide enhanced support to its clients in the development of a responsible and forward-looking approach on classical livestock production (dairy, beef, broilers, layers, pigs, and ducks) in intensive production systems to, among other things, help producers access and maintain entry into high quality and value market segments³. It provides guidance on a range of approaches to animal welfare. It also complement IFC's Performance Standards on Environmental and Social Sustainability, especially as it relates to animal husbandry-specific requirements relevant to IFC clients under Performance Standard 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources), which specify the following: "Clients who are engaged in the primary production of living natural resources, including ... animal husbandry ... will be required to implement sustainable management practices of such primary production to one or more relevant and credible standards as demonstrated by independent verification or certification"⁴. IFC values superior animal husbandry practices part of which is the recognition of the importance of animal welfare in intensive livestock industries.

² Hemsworth PH and Coleman GJ. (2011). Human-Livestock Interactions: the Stockperson and the Productivity and Welfare of Farmed Animals, 2nd Edition. CAB International, Oxon, UK.

³ IFC is not investing directly into extensive production systems (aside from supply chain considerations) or in animals used for laboratory research.

⁴ A credible certification system would be one which is independent, cost-effective, based on objective and measurable performance standards and developed through consultation with relevant stakeholders, such as local people and communities, indigenous peoples, and civil society organizations representing consumer, producer and conservation interests. Such a system has fair, transparent and independent decision-making procedures that avoid conflict of interest.

What Animal Welfare is and How it is Assessed

The 178 members of the intergovernmental World Organization for Animal Health (OIE) have adopted the following animal welfare definition⁵: *Animal Welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.* Stakeholders in the animal welfare arena agree that standards of animal welfare have to be based on sound science, research, and practical experience.

Common measures of animal welfare include behavior and physiology, productivity and reproductive success, mortality rates, and the incidence of injuries and diseases. Attention to animals' housing, food, water, and health typically leads to improvements in measures of welfare and profitability. Productivity is often used as an indicator of animal health. However, focusing only on improving productivity—particularly in large-scale operations—can in some cases lead to poor conditions of animal welfare. Productivity should therefore be assessed in conjunction with other elements to ensure that the welfare of the individual animal is not being ignored.

Animal welfare assessment and monitoring go hand in hand. Simple scoring systems as well as complex computer models can be used. These can incorporate specific measures as well as whole animal observations, and can focus on inputs to the livestock management system being used or on the performance of the animals within those systems. Different monitoring systems have varying advantages and disadvantages. Scoring systems are arguably the most common and are used to integrate a number of parameters.

Using these scoring systems, various participants in the food supply chain have developed or are in the process of developing and participating in auditing programs to assess how well a particular producer or

⁵ OIE (2012). Introduction to the Recommendations for Animal Welfare. In: Terrestrial Animal Health Code, 21st Edition. OIE, Paris, Article 7.1.1. Available at: http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.7.1.htm

supplier is doing when it comes to animal health and welfare. One approach, the 5-Step Animal Welfare Rating Standards System, was developed by the Global Animal Partnership, which was founded in 2008 by a diverse group with the common goal of improving the welfare of agricultural animals.

A set of basic principles underpin international dialogue on animal welfare. Popularly called “The Five Freedoms”, these principles have been developed for, and/or are reflected in, various animal welfare guidelines, recommendations, codes, and legislation prepared by countries of the European Union, North America, Australasia and Asia, and by the OIE, to address animal welfare issues.

Box 1. The 5-Step Animal Welfare Rating Standards System

This system was developed by the Global Animal Partnership (GAP), a non-profit charitable organization founded in 2008. The Partnership consists of a diverse group of farmers, scientists, ranchers, retailers, and animal advocates who have the common goal of improving the welfare of animals in agriculture. Their signature program, the 5-Step Animal Welfare Rating Standards System, recognizes and rewards producers for their welfare practices, promotes and facilitates continuous improvement, and better informs consumers about the production systems they choose to support. To date, more than 2,405 operations, raising more than 140 million animals annually, have been audited and certified to their higher welfare standards by independent, third-party certification companies. Founded in the United States, GAP plans to expand globally in the future. This kind of audited set of standards is likely to be popular with retailers and food companies.

www.globalanimalpartnership.org

Setting Standards

A number of international recommendations, codes, and laws now focus on animal welfare and a growing number of countries have enacted animal welfare legislation outlawing specific animal husbandry practices.

The World Organisation for Animal Health (OIE), as an intergovernmental organization, has a global mandate to improve animal health, animal welfare and veterinary public health and a mission statement, “protecting animals, preserving our future.” The OIE provides international leadership on animal welfare

through a number of science-based standards, expert advice, and the promotion of relevant education and research. Specific OIE animal welfare initiatives taken during the last decade have include the following: mounting three global conferences⁶; producing three focused publications⁷; recognizing four dedicated Collaborating Centres in Italy, New Zealand/Australia, Chile/Uruguay/Mexico and the USA; appointing liaison persons (Focal Points) in each of its member countries; and instigating the successful development of international animal welfare strategic plans in its five regions. Also, the OIE has published 12 global animal welfare standards that were adopted unanimously by its member countries, with priority given to animals used in agriculture and aquaculture^{8 9}. Although useful in all countries, these standards are expected to be particularly helpful to those with poorly developed animal welfare frameworks.

In addition, the OIE has recently developed *10 General principles for the welfare of animals in livestock production systems*.¹⁰ These principles, which highlight specific practices that support animal welfare, are demonstrably underpinned by at least 50 years of scientific research.¹¹ The organization has also formally provided support for a proposed Universal Declaration on Animal Welfare (UDAW).

The OIE considers animal welfare to be a complex, multifaceted, public policy issue that includes important scientific, ethical, social, religious, economic, and political dimensions. As a complex topic, the OIE encourages broad stakeholder involvement and collaborates with a wide range of groups to ensure the standards, guidelines, and recommendations represent a broad international view.

⁶ 'An OIE Initiative' (Paris, 2004); 'Putting OIE Standards to Work' (Cairo, 2008); 'Implementing OIE Standards – Addressing Regional Expectations' (Kuala Lumpur, 2012).

⁷ 'Animal Welfare: global issues, trends and challenges', OIE Scientific and Technical Review, Volume 24, 2005; 'Scientific Assessment and Management of Animal Pain', OIE Technical Series, Volume 10, 2008; *Animal Welfare – Focusing on the future*, OIE Scientific and Technical Review, Volume 33, April 2014.

⁸ OIE Terrestrial Animal Health Code (2012).

http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm

⁹ OIE Aquatic Animal Health Code (2012). http://www.oie.int/index.php?id=171&L=0&htmfile=titre_1.7.htm

¹⁰ OIE Terrestrial Animal Health Code (2012). http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm

¹¹ Fraser D., Duncan I.J.H., Edwards S.A., Grandin T., Gregory N.G., Guyonnet V., Hemsworth P.H., Huertasm S.M., Huzzey J.M., Mellor D.J., Mench J.A., Paranhos da Costa M., Spinka M. and Whay H.R. (2013). – The welfare of animals in production systems: general principles and the scientific study of animal welfare. *The Veterinary Journal* 198, 19-27.

¹² http://www.fao.org/fileadmin/user_upload/animalwelfare/i0483e00_1.pdf

¹³ <http://www.fao.org/docrep/017/i3164e/i3164e00.pdf>

Box 2. The ‘Five Freedoms’ of Animal Welfare

Originally put forward by the UK Farm Animal Welfare Council, the “Five Freedoms” refer to idealized states of welfare rather than standards. They emphasize that the welfare of an animal includes its physical and mental state; that good animal welfare implies both fitness and a sense of well-being; and that any animal kept by man must, at least, be protected from unnecessary suffering.

Each of the Five Freedoms is aligned with actions designed to safeguard and improve animal welfare whether on farm, in transit, at market, or at a place of slaughter. These actions provide a comprehensive framework to guide welfare assessment within any system, and indicate the steps and compromises necessary for effective welfare management within the proper constraints of a responsible livestock industry. Stockmanship, plus the training and supervision necessary to achieve required standards, are considered key factors in the handling and care of livestock.

1. Freedom from thirst and hunger - by ready access to fresh water and a diet to maintain full health and vigor
2. Freedom from discomfort - by providing an appropriate environment including shelter and a comfortable resting area
3. Freedom from pain, injury or disease - by prevention or rapid diagnosis and treatment
4. Freedom to express normal behavior - by providing sufficient space, proper facilities and company of the animal's own kind
5. Freedom from fear and distress - by ensuring conditions and treatment that avoid mental suffering

Modified from: Farm Animal Welfare Council (UK) <http://www.fawc.org.uk/freedoms.htm>

The United Nations Food and Agriculture Organisation (FAO) is engaged in international animal welfare capacity building, for example, by organizing conferences on implementing good animal welfare practices,¹² enhancing animal welfare and farmer income through improved animal nutrition¹³ and

¹⁴ http://ec.europa.eu/food/animal/welfare/seminars/docs/expert_call_en.pdf

¹⁵ <http://www.fao.org/ag/againfo/themes/animal-welfare/aw-abthecat/aw-whaistgate/en/>

evaluating the welfare of working animals.¹⁴ The organisation has also established an Internet information exchange, the FAO Gateway to Farm Animal Welfare.¹⁵

The European Convention for the Protection of Animals kept for Farming Purposes is a set of principles that outlines requirements with respect to housing, food, water, and care necessary to safeguard the welfare of animals, particularly those kept in modern, intensive farming systems.

European Union Directives set minimum legally binding standards of welfare for various farm animals, such as laying hens, pigs, and calves. As these are minimum standards, individual member states can set higher standards for animals within their own territories. EU Regulations cover animal transport and slaughter and are identical in all EU Member States.

Some welfare organizations have drawn up labelling schemes for animal products from farms that meet certain higher welfare standards, such as the RSPCA's Freedom Food program in the UK.

Box 3. Freedom Food Farm Assurance Scheme

Freedom Food is a farm assurance and food labelling scheme, inspired by the Five Freedoms and set up by the UK Royal Society for the Prevention of Cruelty to Animals (RSPCA). Its aim is to improve the lives of as many farm animals as possible by implementing welfare standards on farms, during transport, and in abattoirs.

For example, avoiding the mixing of animals of different ages, sexes, and social groups, which can cause stress and/or injury, helps to free them from fear and distress. Allowing generous feeding and drinking spaces help to minimize bullying and competition. A clean, dry, bedding area for mammalian species and plenty of space to move around help to minimize discomfort. Providing a physically safe and hygienic environment compatible with good health helps animals to remain free from pain, injury, and disease. Finally, giving animals enough space, appropriate environmental enrichment, and company of their own kind gives them greater freedom to express normal behavior. Farms, transport vehicles, abattoirs and their operators are subject to regular inspections.

¹⁴ http://ec.europa.eu/food/animal/welfare/seminars/docs/expert_call_en.pdf

¹⁵ <http://www.fao.org/ag/againfo/themes/animal-welfare/aw-abthegat/aw-whaistgate/en/>

Freedom Food has been operating for almost 20 years in the UK where it has achieved a 90% share of free-range egg production, 36% of total retail eggs sales, and a 30% penetration of pig production.

http://www.freedomfoodpublications.co.uk/impact_report/ImpactReport_Optimised.pdf

A growing number of multinational food retailers have responded to consumer demand for eggs and meat produced with higher animal welfare standards by developing assurance programs and requiring compliance on the part of their suppliers. McDonald's Corporation, with more than 34,000 restaurants in 119 countries¹⁶, adopted a set of guiding principles on animal welfare¹⁷, transitioned to using only cage-free eggs in 2011¹⁸ and is committed to eliminating gestation stalls from its U.S. supply chain by 2022¹⁹. Likewise, Burger King Corp. has committed to use only cage-free eggs for all U.S. locations by 2017, and to only purchase pork from suppliers that have documented plans to end their use of gestation stalls for breeding pigs²⁰. WalMart²¹ and Compass Group²² (the world's largest foodservice provider) have similar animal welfare objectives.

The British retailer Marks & Spencer has adopted the recommendations of the independent Farm Animal Welfare Council as part of a business strategy to achieve brand differentiation by requiring higher welfare standards from their suppliers of chicken.²³ The Co-operative has introduced its self-branded, higher welfare chicken, turkey and pork lines.²⁴ Also, in the interests of transparency, Tesco's publishes its

¹⁶ http://www.aboutmcdonalds.com/mcd/our_company.html

¹⁷ http://www.mcdonalds.com/content/dam/AboutMcDonalds/Sustainability/Sustainability%20Library/McD_AnimalWelfareGuidingPrinciples.pdf

¹⁸ <http://hsus.typepad.com/wayne/2011/05/mcdonalds-cage-free.html>

¹⁹ http://www.humanesociety.org/news/press_releases/2012/05/mcdonalds_sets_timetable_053112.html#.UoLCaGQpYz0

²⁰ <http://www.bk.com/en/us/company-info/news-press/detail/burger-king-corp-makes-industry-leading-commitment-to-enhance-animal-welfare-2511.html>

²¹ http://www.humanesociety.org/issues/confinement_farm/timelines/timeline_farm_animal_protection.html

²² <http://compass-usa.com/Pages/CageFree.aspx>; <http://www.prnewswire.com/news-releases/worlds-largest-food-service-company-announces-animal-welfare-initiative-141915543.html>

²³ http://corporate.marksandspencer.com/documents/how_we_do_business/food_animal_welfare_2013.pdf

²⁴ <http://www.co-operativefood.co.uk/ethics/Animal-welfare/>

supplier standards and minimum requirements on the Internet, as well as details of how they are implemented through the supply chain.²⁵

The transnational corporation Unilever is developing farm animal welfare criteria to be part of their sustainable sourcing program²⁶, which could have marked impact throughout their global supply chain, including in emerging markets. There are many more organizations, including multinational livestock producer groups, food processing and distribution companies, supermarket groups, restaurant chains, and others²⁷, that are committed to cage-free egg procurement policies and the elimination of gestation stalls for pigs, developments which further highlight the growing demand by consumers for higher animal welfare standards.

The Business Case for Improved Animal Welfare

Animal welfare is important for commercial as well as ethical reasons. The health and well-being of animals can have a direct impact on growth, reproduction, or meat quality, and as illustrated above is important to producers, food retailers, customers, and others in the supply chain. For the producer in particular, adherence to animal welfare guidelines and standards can increase business profitability by improving productivity and efficiency, as well as by reducing losses.

Disease is a good example of a joint threat to animal welfare and—especially for small-scale livestock production in emerging market countries—business sustainability. Outbreaks of diseases transmissible to humans, such as avian influenza, have shown the catastrophic effects that disease can have on livestock operations and have triggered international demands to tighten disease control. The humane destruction of affected animals is a further welfare issue as well as entailing significant costs to businesses. Controlling disease makes a major contribution to animal welfare but can also make a difference to a business's survival.

Commercial Successes on the Farm

Initial steps to improve animal welfare may mean an additional financial cost. However, experience shows that the long-term savings and commercial benefits can outweigh initial expenditures. Sometimes

²⁵ <http://realfood.tesco.com/our-food/tesco-farming.html>

²⁶ <http://www.unilever.com/sustainable-living/sustainablesourcing/targets/index.aspx>

²⁷ http://www.humanesociety.org/issues/confinement_farm/timelines/timeline_farm_animal_protection.html

very simple changes in how animals are treated can have dramatic effects on the bottom line. For example, improved handling practices resulted in a more than 50% reduction in carcass bruising compared to routine farm handling practices.²⁸²⁹

Market Drivers and Opportunity

Affluence in many parts of the world has increased consumer choices and heightened expectations about food production standards, especially food safety and quality. There is also a growing demand for assurances about how animal-derived food is produced, and livestock operations are coming under increasing pressure to adopt and practice animal welfare principles. The result has been a growth in farm assurance schemes that include animal welfare criteria.

Box 4. The Benefits of Good Stockmanship

Good stockmanship has proven to be a crucial component in improving the health and wellbeing of livestock, with clear business benefits. Animals in intensive farming systems, for example, are reliant on people for most of their needs. The animals therefore require well-trained and motivated personnel with practical ability, knowledge, and professional competence to ensure that their physical, health, and behavioral needs are met. Knowledge of the normal behavior and function of stock is essential. The ability to recognize early signs of ill-health, injury, disease, or distress allows for prompt remedial action, thereby reducing mortality rates and negative effects on meat quality.

Poor interactions between people and their animals are also known to limit both animal welfare and livestock productivity. People with appropriate attitudes and positive rather than aversive behaviors towards animals do not elicit as much fear in their livestock and this is reflected in improved livestock performance (e.g. growth, reproduction, and meat quality).

Careful selection of stock handlers, or educating existing staff to improve their attitudes and stock handling, can improve livestock productivity. There are a number of examples:

²⁸ Appleby MC and Huertas SM.(2011). International issues. In: Animal Welfare, second edition (MC Appleby, JA Mench, IAS Olsson & BO Hughes, eds), CAB International, Wallingford, 304-316.

²⁹ Paranhos da Costa MJR, Huertas SM, Gallo C, and Dalla Costa OA. (2012). Strategies to promote farm animal welfare in Latin America and their effects on carcass and meat quality traits. Meat Science 92, 221-226.

- Handling pigs in an aversive manner, as little as 2- 5 minutes three times per week, markedly reduced growth (by 11%) and reproductive performance (pregnancy rates by 62%) in some experimental studies.
- Fear of humans was associated with less efficient feed conversion amongst broiler chickens over 22 commercial farms, and was probably influenced by the quality of stockmanship.
- Fear may also be a factor in limiting the production of layer hens. The responses of birds towards humans accounted for 23-63% of the variation in peak, hen, day production over 14 commercial farms.
- Interventions designed to improve the attitude and behavior of people interacting with stock led to an average 4-5% increase in milk yield, milk protein, and milk fat over 94 commercial dairy farms.

Major source: Hemsworth PH and Coleman GJ. (2011). *Human-Livestock Interactions: the Stockperson and the Productivity and Welfare of Farmed Animals, 2nd Edition*. CAB International, Oxon, UK.

There are several different types of schemes which aim to ensure compliance with good practices. Some companies have individual programs, while others are working with restaurant and food marketing groups to bring together common programs. McDonald's, for instance, requires its suppliers to abide by specific welfare guidelines that exceed those of many governments. All these assurance schemes are founded on good and best management practices so that consumers can be assured of the quality of animal-based products.

Standards can help to secure and maintain demand for products in welfare-sensitive markets. Although these may lead to an increase in production costs, some of the additional cost can be recouped through market premiums. Surveys in Europe and North America have found that the majority of consumers care about animal welfare and report a willingness to pay significantly more for animal products they perceive to have come from farm animals raised humanely. Cage-free eggs, for example, enjoy a price premium often more than twice that of cage eggs. Several emerging market industries have benefited from this approach.³⁰

³⁰ Source: Developing Animal Welfare: the Opportunities for Trade in High Welfare Products from Developing Countries. RSPCA & Eurogroup for Animal Welfare, <http://www.rspca.org.uk/ImageLocator/LocateAsset?asset=document&assetId=1232719194076&mode=prd>

Box 5. Developments in Animal Welfare Policy and Practice during the Last Decade

Policy and Regulation

A global momentum for governmental policy development that provides regulatory support to improve animal welfare standards is well established. For example, many countries in Africa, Asia, Latin America and the Middle East that previously offered little or no statutory protection for farm animals are currently developing generic anti-cruelty/animal welfare legislation and some specific regulations. And others, including Australia, Canada, members of the EU, New Zealand, and the USA, are refining their existing regulatory frameworks by extending the standards that apply to particular farming systems or species. In both cases, intensive production systems for pigs and poultry have received particular attention.

Scientific Thinking

A change in scientific thinking about farm animal welfare, highlighted by the recognition that animals are “sentient beings”, has become well consolidated during the last decade. This is based on an ever-increasing body of peer-reviewed scientific publications.³¹ Previously, welfare in each production system was assessed mainly using measures of biological functioning related to health and to meat, milk, fiber, or egg outputs. Although such measures are still used, greater attention is now also focused on the animals themselves with regard to the following scientifically supported understanding:

- Animal welfare states reflect what animals experience – i.e. their emotional or affective states – and these experiences may be negative or positive.
- In the past, the alleviation of negative experiences was strongly emphasized, now the promotion of positive experiences is also recommended.
- Validated measures of negative welfare states are focused on established physiological, clinical and/or behavioral responses of animals to adverse conditions, and these measures guide preventative and remedial actions.
- Some behavior-based indices of positive welfare states are well validated and in current use, and science-based support is being sought for others.
- The negative-positive experiential balance reflects an animal’s quality of life such that a net negative balance represents a poor quality of life, and vice versa.

³¹ Green, T.C. and Mellor, D.J. (2011). Extending ideas about animal welfare assessment to include ‘quality of life’ and related concepts. *New Zealand Veterinary Journal* 59, 316–324.

- Human-animal relationships can have marked effects on animal welfare. Good welfare-related knowledge, skills and attitudes towards animals by stockpersons enhance the welfare and productivity of livestock, and vice versa.
- The acceptability of production systems is now judged mainly by animals' welfare-related responses to them.

Standards and Assessment

There has been a significant shift in the primary focus of animal welfare standards away from rigidly defined *inputs* relating to husbandry practices, resources and facilities design towards the greater flexibility of specifying the health and welfare *outcomes* for the animals. This recognizes that the same welfare benefits for animals can be achieved by using a range of practical approaches that are most suited to local conditions in different countries or regions. Supporting these changes has been the identification and increasing use of animal-based health and welfare assessment criteria³².

Retail Marketing

Transnational and national commercial companies have adopted animal welfare policies and higher standards that regulate their own livestock activities or those of their suppliers of livestock-derived products. In some countries such standards may be higher, and can be applied more quickly, than those required by government regulations.

Veterinary Involvement

Globally, the veterinary profession has become more active in the animal welfare arena. Thus, more veterinary undergraduate curricula now include animal welfare content and postgraduate specialist qualifications have been established. Animal welfare has also become an explicit focus of many veterinary policies and is highlighted in many veterinary conferences. It is anticipated that the veterinary profession will make an increasingly significant contribution to animal welfare policy and practice worldwide.

Major source: Mellor, D.J. & Bayvel, A.C.D. (eds) (2014). "Animal welfare: Focusing on the future." Scientific and Technical Review, Volume 33(1).

³² For example: the Welfare Quality ® (<http://www.welfarequality.net/everyone>) and Animal Welfare Indicators (<http://www.animal-welfare-indicators.net/site/>) projects.

The Costs of Improving Animal Welfare

While improving animal welfare is critical for increasing business sustainability and can strengthen business performance in a variety of ways, it is also acknowledged that in some cases there are costs associated with such improvements. The most effective approach will be one that balances costs by taking full advantage of livestock performance improvements and new opportunities offered by the marketplace.

Costs in the Supply Chain

Common perceptions are that economic costs are a major or strong constraint on improving animal welfare, especially in intensive livestock industries, but will vary depending on the sector, feed supplies, and other factors. Recent analyses, however, suggest that likely costs may be somewhat lower than early estimates. For example, changing U.S. pork production from sow stalls to group housing would increase costs at the farm level by 9% and the retail level by 2%, and changing from sow stalls to free range would increase costs at the farm level by 18% and at the retail level by 5%, if all costs were passed on to the consumer.³³

Standards may therefore be improved without impacting significantly on retail prices, but with a risk of placing additional burdens of setup and other costs on the producer. This raises the question of how the structure of the food chain might be reformed to allow for a more equitable distribution of the costs of improving animal welfare.

Differences between developed and developing countries

IFC, when investing in emerging markets, has noted differences in opportunities and costs when improving animal welfare between developed and developing countries. For instance, the varying cost of labor means that animal welfare improvements in developed countries are more likely to be made through the automation of systems, while cheaper labor in developing countries offers more scope to increase human contact where this could have a positive effect.

Developed countries tend to have more financial resources and infrastructure to support animal welfare. This includes housing, feeding systems, and transportation; greater ability to address problems such as

³³ Seibert, L and Norwood, BF (2011). Production costs and animal welfare for four stylised hog production systems. *Journal of Applied Animal Welfare Science* 14(1): 1-17.

drought, cold, and predators; and stronger research programs in the area of animal welfare. Developed countries are also likely to have a greater number of veterinarians and animal production specialists; more developed industries for vaccine and animal health supplies; and enhanced education and industry awareness regarding animal welfare.

Although developing countries often face significant challenges with regard to resources, knowledge, research, and awareness around animal welfare, they have an opportunity to benefit from the experiences of developed countries and more advanced technology. Thanks to NGO campaigns that have led to stronger legislation and raised consumer expectations in developed countries, the emerging markets are in a good position to capitalize on increased market premiums for more sustainable products. Moreover, as awareness about animal welfare issues and food safety/quality increases globally, they may also be able to benefit from future demand in their home markets.

How Can Improvements in Animal Welfare be Made?

The World Organization for Animal Health (OIE) standards on animal welfare have become the international reference for animal welfare in the trade of animals and products and the control of eradication of animal diseases. They also act as a guide for the development of national and regional assurance programs and serve as a reference for the development of domestic legislation, especially as it relates to the definition of quality of veterinary services, surveillance, prevention, control and eradication of diseases. Animal welfare is also important for national improvement of animal production. It is envisaged that these standards will be increasingly used as a basis for bilateral agreements between member countries. The organization also promotes the development and implementation of regional strategies on animal welfare in line with these standards. As an example, animal welfare can be assured or enhanced by following good management practices.^{34 35 36 37 38}

³⁴ US National Chicken Council welfare guidelines for broiler chickens:
<http://www.nationalchickencouncil.org/industry-issues/animal-welfare-for-broiler-chickens/>;
<http://www.nationalchickencouncil.org/wp-content/uploads/2012/01/NCC-Animal-Welfare-Guidelines-2010-Revision-BROILERS.pdf>

³⁵ US National Pork Board Swine Care Handbook:
<http://www.pork.org/filelibrary/AnimalWellBeing/swine%20care%20handbook%202003.pdf>

Codes of welfare, or standards, aim to ensure that the needs of terrestrial (especially intensive pig and poultry) and aquatic animals are met by setting minimum requirements for treatment of animals throughout the production process. In conjunction with relevant legislation in particular countries, these good practices apply to all persons responsible for the welfare of farm animals. While producers may have less control over some of food chain participants (e.g. transport and slaughter company personnel), they all contribute to enhanced animal welfare—and therefore product quality and profitability—and should also be encouraged to follow good practice.

The following sections provide general guidance on accepted good practice in animal welfare. Additional references are provided at the end of this document, indicating where more detailed information and quantitative guidance can be obtained. References to specific OIE standards are also contained at the end of relevant sections.

Genetics and Breed Selection

Breeds should be selected for good skeletal and cardiovascular health, low aggression, and suitability for both the environment/climate and the system in which they are bred.

Breeding objectives should be assessed not only by production characteristics, but also by rates of injury, disease, and mortality in both breeding stock and offspring.

Feed and Water

Animals should receive a daily diet adequate in composition, quantity, and containing appropriate nutrients to maintain good health, meet their physiological requirements, and avoid metabolic and nutritional disorders. Feed should be palatable and free of contaminants, moulds, and toxins.

³⁶ US United Egg Producers Layer Hen animal husbandry guidelines / certification program:
http://www.unitedegg.org/information/pdf/UEP_2010_Animal_Welfare_Guidelines.pdf

³⁷ US Beef Quality Assurance Program (based upon Cattle Industry Guidelines below):
http://www.explorebeef.org/CMDocs/ExploreBeef/FactSheet_BeefQualityAssurance.pdf

³⁸ US Cattle Industry Guidelines for the Care and Handling of
Cattle:<http://www.bqa.org/uDocs/Guidelines%20for%20the%20Care%20and%20Handling%20of%20Cattle.pdf>

It should be noted that food and water requirements vary with feed composition, physiological state, stage of growth, size and condition, pregnancy, lactation, exercise and activity, and climate. Access to feed should be at intervals appropriate to the physiological needs of the animals, and at least once daily.

Animals should have an adequate daily supply of water that is palatable and not harmful to their health.

Food and water should be provided in such a way that all animals have an opportunity to feed or drink without undue competition and injury.

Animals on highly concentrated diets may also require access to bulky or high fiber feed in order to satisfy hunger. Medicated or enriched food and water should only be used on professional advice.

Reserves of food and water should be maintained to allow for interruption to supply.

Housing Systems

Animal accommodation should be designed, constructed, and maintained to allow all animals space to stand, stretch, sit, and/or lie down comfortably at the same time. They should also allow all animals to directly interact with herd or flock mates, unless isolated for veterinary or nursing reasons.

Stocking densities should be low enough to prevent excessive temperatures and humidity; competition, stress, and aggression between animals, and abnormal behavior; and to enable good litter management.

All animals should have access to a clean and dry place. Floor litter must be kept free of excessive moisture, and be loose and friable in the case of broiler chickens. All surfaces and flooring should be non-slip, without sharp projections or edges likely to cause injury, and provide for the animal to bear weight on the entire sole of the foot.

There is an international trend to move from the use of sow stalls to group housing systems, with or without limited stall use in the four-week period after mating. The use of alternatives to farrowing crates

is, however, the subject of ongoing research to develop a system which delivers benefits to the sow but does not increase piglet mortality, and is cost effective.^{39 40 41}

Housing should be constructed of fire-resistant materials and electrical and fuel installations planned and fitted to minimize fire risk. Firefighting equipment and smoke detectors should be installed with sufficient exits to enable evacuation of the building in an emergency. There should be sufficient drainage to protect animals from flooding.

Automated feeding and watering systems should allow all animals the opportunity of access to sufficient feed and water without undue competition (including intimidation, bullying and aggression) likely to cause injury or distress.

Feeding and watering systems should be designed, constructed, placed, and maintained to prevent contamination or spoiling, and minimize spillage.

All automated systems supplying food and water, removing waste, and controlling temperature, lighting, and ventilation should be checked and maintained regularly, and backup systems should be available in case of failure.

Natural or artificial light (of an intensity of at least 20 lux) should be available in all buildings for a minimum of eight hours daily, and there should be a period of darkness sufficient to allow proper rest.

Air quality should be maintained by removing excessive heat and moisture, minimizing transmission of airborne infectious agents, preventing the buildup of noxious or harmful waste gases, and to reasonably control humidity and minimize dust particles.

³⁹ Hales J, Moustsen V, Nielsen M and Hansen C. (2013). Higher preweaning mortality in free farrowing pens compared with farrowing crates in three commercial pig farms. *Animal: an international journal of animal bioscience*, 1-8.

⁴⁰ KilBride AL, Mendl M, Statham P, Held S, Harris M, Cooper S and Green LE. (2012). A cohort study of preweaning piglet mortality and farrowing accommodation on 112 commercial pig farms in England. *Preventive Veterinary Medicine* 104, 281-291.

⁴¹ Morrison R, Farish M, Whyte M, Baxter E. (2013). Piglet mortality in the PigSAFE loose farrowing system compared to farrowing crates during autumn and winter. In: JR P, JM P (eds). *Manipulating Pig Production XIV*, Melbourne Australia, p 35. Australasian Pig Science Association

Effluent and waste should not be allowed to build up where it leads to discomfort and compromised welfare.

Animals should be protected from extreme temperatures or abrupt temperature fluctuations, cold draughts, and from predators, vermin, and excessive noise.

Animals with access to, or living, outdoors should have access to shade and shelter and protection from predators.

Box 6. Going further

Housing systems that allow animals to engage in natural behaviors, such as nesting, dust-bathing, or perching, are accepted by animal scientists and veterinarians to greatly improve animal welfare. As such, providing environmental enrichment in housing systems, including appropriate and well-maintained bedding and secure access to the outdoors, can be incorporated into the business model.

Husbandry Practices

Each operation should have strategies to prevent overheating and cooling.

Handling and restraining techniques should minimize distress and avoid injury.

Animals in intensive systems should be inspected at least daily, or more regularly under circumstances likely to affect welfare (e.g. introduction of new foods, outbreaks of disease).

Health and Disease

Personnel responsible for the care and management of animals should have an appropriate level of knowledge of the normal health and behavior of the animals in their care so as to be able to recognize poor health and welfare. Animals should be inspected regularly, at least daily, and more frequently during periods of significant risk to health and welfare.

Animals must be maintained in good body condition and remedial action (veterinary attention, improved nutrition, or husbandry) taken when in poor condition, or when there are signs of significant distress, ill-health, disease, or injury.

Animals should be periodically checked for the presence of parasites, and any corrective treatment deemed necessary to prevent distress and suffering should be administered as soon as possible.

Any sick or injured animals should be treated or cared for as soon as practically possible, including being isolated or humanely destroyed if necessary.

Staff should be properly trained in humane destruction methods and when to apply them, and be supplied with the required equipment. Animals should be confirmed dead before disposal, and any still alive should be killed immediately. Dead animals should be removed promptly and disposed of appropriately.

Veterinary care should be available at all times and medications and treatments given in accordance with advice and instructions. Good record keeping will assist with managing health and disease problems.

A preventative health program should be established in consultation with a veterinarian. External audits are encouraged.

See: *Killing of Animals for Disease Control Purposes*, World Organization for Animal Health (OIE), http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm

Transport

Facilities for loading, transporting, and unloading should be designed, constructed, and maintained so as to permit proper handling of animals and prevent increased risk of injuries.

Catching, handling, and loading should be carried out quietly and confidently by trained and competent personnel, and animals should not be inverted when handled.

Animals should be fit to travel without unreasonable or unnecessary pain or distress, and non-ambulatory and other unfit animals must be promptly and humanely euthanized on-site.

Provision should be made for care of animals during the journey and at the destination. Particular care should be taken with animals that are fatigued, old, young, infirm, pregnant, and/or nursing.

Animals should be neither too loosely nor too tightly loaded so as to reduce the risk of excessive movement or overcrowding resulting in injury.

The distance animals are transported, and the time taken, should be minimized. Where animals are transported over long distances, appropriate provision needs to be made for feeding and watering.

During transport animals should be protected from extremes of heat and cold and provided with adequate ventilation.

Casualty animals should not be transported. However, should an animal become a casualty during a journey, then it should receive immediate veterinary attention or be euthanized without delay.

See: *Transport of Animals by Land, Sea and Air*, World Organization for Animal Health (OIE),
http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm

Slaughter

Prior to slaughter, proper handling techniques, and lighting, space, and ventilation should be used to keep the animals calm. Holding facilities should protect animals from adverse weather, have adequate and uniform lighting, sufficient space to allow animals to stand up and lie down, be well ventilated and drained, and be free from smooth floor surfaces and sharp protrusions.

Animals should be slaughtered as close as possible to the farm of origin to minimize the rigors of transport.

Animals should be slaughtered as soon as possible after arriving at the slaughter facility. In cases where animals are kept for long periods prior to slaughter, feed and water must be provided.

All animals must be handled and restrained, rendered unconscious, and slaughtered in the least distressing and most pain-free manner possible by trained and competent staff. All animals should be rendered unconscious by a means which causes unconsciousness to persist until death occurs.

Contingency plans should be made for animal slaughter or accommodation in the event of the slaughter facility being unable to continue through unforeseen disruption or plant failure.

See: *Slaughter of Animals*, World Organization for Animal Health (OIE),
http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm

Stockmanship

Animals in intensive farming systems are reliant on humans for most of their needs, requiring people with knowledge and experience and the observance of high standards.

There should be a sufficient number of trained and well-motivated personnel with practical ability, knowledge and professional competence to maintain animal health and welfare and ensure that the physical, health, and behavioral needs of animals are met.

Good stockmanship is crucial and requires people who are competent and well-trained, patient, careful, and caring, and who display empathy with animals and handle them quietly and firmly. Stock people should not be cruel and should at all times endeavor to avoid causing pain, suffering, or distress to animals.

Stock people should be skilled at handling, preventing, and treating illnesses and diseases and caring for affected animals, including minimizing aggression. Knowledge of the normal behavior and function of stock is essential and individuals should be able to recognize early signs of ill-health, injury, disease, or distress requiring prompt remedial action.

Intensively managed animals must be inspected at least once per day (or more frequently, dependent on the likelihood of any risk to animal health and welfare). Ill or injured animals must be treated to alleviate pain and distress promptly, or be killed humanely.

Ongoing professional training programs should be available to stock people, and the development of such programs should be encouraged so that a culture of caring and responsible planning and management is developed.

Stock managers and handlers should have access to a disaster response and recovery plan (e.g. failure of feed or water supply, electricity supply, structural damage, or fire and flood).

Quality Management

To ensure that high levels of animal husbandry are maintained, and that principles of animal welfare are adhered to, a quality assurance system that provides for written procedures should be implemented by producers.^{42 43 44} Staff should be trained in animal welfare, including knowledge of relevant legal requirements and codes of practice.

The quality assurance system should require continual review of the existing system and practices, with the aim of enhancing the welfare of animals. Regular inspections should take place, including some visits that are unannounced. Welfare audits are encouraged.

Systems of monitoring and recording are encouraged in order to ensure good husbandry and welfare and especially so that problems can be averted before they arise.

Aquaculture

In addition to the relevant good practices above, farmed fish and other aquatic animals have specific requirements and demands which can affect their welfare.

The water supply should be of sufficient flow, quality, and quantity to ensure the well-being of the species being farmed. The physical environment should be designed, sited, and maintained so as to enhance animal health and welfare.

All fish and other aquatic animals should receive adequate quantities of feed, using the correct nutritional composition for the species farmed, and for their physiological state, especially the stage of growth. Food should be presented in a form and distributed in a manner that ensures that all individuals have sufficient access to the feed supplied.

The stocking density for fish and other aquatic animals should be adjusted to the specific requirements of the species so as to minimize crowding and stress, aggression, injuries, and ill health. This will need to

⁴² Australian Pig Quality Assurance (APIQ) Program: <http://www.apiq.com.au/>

⁴³ Canadian Pork Quality Assurance Program (CQA): <http://www.cqa-aqc.ca/documents/producer-manual/AFEng1.pdf>

⁴⁴ US Pork Quality Assurance (PQA): http://www.pork.org/certification/11/pqaplus.aspx#.UvLm_kKSwpI

take account of the average size of the animal, their health and behavioral needs, the environment, the availability of oxygen, and the removal of wastes that may cause stress or toxic effects if allowed to accumulate.

Any unnecessary distress to the animal should be avoided. Fish and other aquatic animals should be kept in good health and inspected frequently enough to ensure that significant behavioral and physical changes would be detected and remedial action taken. Proper diagnosis should be made if the presence of disease is suspected. Handling of live fish and other aquatic animals should be kept to a minimum to avoid stress and injury. Dead or dying animals should be promptly removed and immediately and humanely euthanized.

The movement and transport of live fish and other aquatic animals should be done without unnecessary delay, with an adequate oxygen supply, avoiding rapid changes in variables such as temperature and water quality, and in containers designed to eliminate injury.

Whenever possible, predators should be excluded from the areas where live fish and other aquatic animals are held. Parasites should be controlled where they have the potential to compromise animal health and welfare.

When fish and other aquatic animals are required to be fasted before slaughter to induce a completely empty digestive system, the period of fasting should only be for as long as is necessary. Fish and other aquatic animals should be killed quickly and humanely.

See: *Welfare of farmed fish during transport; Welfare aspects of stunning and slaughter of farmed fish for human consumption; and Killing of farmed fish for disease control purposes* – World Organization for Animal Health (OIE), http://www.oie.int/index.php?id=171&L=0&htmfile=titre_1.7.htm

Additional Resources

General

European Convention for the Protection of Animals Kept for Farming Purposes. Council of Europe.
<http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?CL=ENG&NT=087>

Broiler chickens

- *Animal Welfare (Layer Hens) Code of Welfare.* Ministry for Primary Industries, Wellington, New Zealand, 2012. <http://www.biosecurity.govt.nz/animal-welfare/codes/layer-hens/index.htm>

- *Code of Recommendations for the Welfare of Livestock: Meat Chickens and Breeding Chickens.* DEFRA Publications, London, 2002.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69372/pb7275meat-chickens-020717.pdf

- *Meat Chickens Animal Welfare (Meat Chickens) Code of Welfare.* Ministry for Primary Industries, Wellington, New Zealand, 2012. <http://www.mpi.govt.nz/Default.aspx?TabId=126&id=1432>

- *Primary Industries Standing Committee Model Code of Practice for the Welfare of Animals: Domestic Poultry.* Fourth edition. CSIRO Publishing, Collingwood, 2002.

<http://www.publish.csiro.au/nid/22/sid/11.htm>

- *Recommended Code of Practice for the Care and Handling of Farm Animals: Chickens, Turkeys and Breeders from Hatchery to Processing Plant.* Canadian Agri-Food Research Council, Ottawa, 2003.

<http://www.nfacc.ca/codes-of-practice>

- *Recommended code of practice for the care and handling of pullets, layers and spent fowl: Poultry Layers.* Canadian Agri-Food Research Council, Ottawa, 2003. <http://www.nfacc.ca/codes-of-practice>

Pigs

- *Animal Welfare (Pigs) Code of Welfare.* Ministry for Primary Industries, Wellington, New Zealand, 2010. <http://www.biosecurity.govt.nz/animal-welfare/codes/pigs/index.htm>

- *Code of Recommendations for the Welfare of Livestock: Pigs*. DEFRA Publications, London, 2003. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69369/pb7950-pig-code-030228.pdf
- *Primary Industries Standing Committee Model Code of Practice for the Welfare of Animals: Pigs*. Third edition. CSIRO Publishing, Collingwood, 2008. <http://www.publish.csiro.au/nid/22/sid/11.htm>
- *Recommended Code of Practice for the Care and Handling of Farm Animals: Pigs*. Canadian Agri-Food Research Council, Ottawa, 1993. <http://www.nface.ca/codes-of-practice>

Slaughter

- *Animal Welfare (Commercial Slaughter) Code of Welfare*. Ministry for Primary Industries, Wellington, New Zealand, 2010. <http://www.biosecurity.govt.nz/animal-welfare/codes/commercial-slaughter>
- *European Convention for the Protection of Animals for Slaughter*. Council of Europe. <http://conventions.coe.int/Treaty/en/Treaties/Html/102.htm>
- *Guidelines for the Humane Handling, Transport and Slaughter of Livestock*. Food and Agriculture Organization of the United Nations and Humane Society International. <http://www.fao.org/docrep/003/x6909e/x6909e00.HTM>
- *Slaughter of Animals*. World Organization for Animal Health OIE. http://www.oie.int/index.php?id=169&L=0&htmfile=titre_1.7.htm
- *Model Code of Practice for the Welfare of Animals: Livestock at Slaughtering Establishments*. CSIRO Publishing, Collingwood, 2001. <http://www.publish.csiro.au/nid/22/sid/11.htm>
- U.S. Code of Federal Regulations, Title 9, Chapter 3, Part 313, Humane Slaughter of Livestock, <http://www.gpo.gov/fdsys/granule/CFR-2011-title9-vol2/CFR-2011-title9-vol2-part313/content-detail.html>

Transport

- *Animal Welfare (Transport Within New Zealand) Code of Welfare*. Ministry for Primary Industries, Wellington, 2011. <http://www.biosecurity.govt.nz/animal-welfare/codes/transport-within-nz>

- *Australian Animal Welfare Standards and Guidelines — Land Transport of Livestock*. Animal Health Australia, Canberra, 2012. <http://www.animalwelfarestandards.net.au/files/2011/02/Land-transport-of-livestock-Standards-and-Guidelines-Version-1.-1-21-September-2012.pdf>
- *Code of Practice for the Care and Handling of Farm Animals: Transportation*. Canadian Agri-Food Research Council, Ottawa, 2001. <http://www.nfacc.ca/codes-of-practice>
- European Convention for the Protection of Animals during International Transport (Revised). Council of Europe.
<http://conventions.coe.int/treaty/Commun/QueVoulezVous.asp?CL=ENG&CM=0&NT=193>
- *Guidelines for the Humane Handling, Transport and Slaughter of Livestock*. Food and Agriculture Organization of the United Nations and Humane Society International.
<http://www.fao.org/docrep/003/x6909e/x6909e00.HTM>

Aquaculture

- *Best Aquaculture Practices (BAP) Finfish and Crustacean Farm Standards*. Global Aquaculture Alliance. <http://www.gaalliance.org/cmsAdmin/uploads/bap-fishcrustf-413.pdf>
- *Best Aquaculture Practices (BAP) Mussel Farm Standards*. Global Aquaculture Alliance. <http://www.gaalliance.org/cmsAdmin/uploads/bap-mussel-813.pdf>
- *Best Aquaculture Practices (BAP) Salmon Farm Standards*. Global Aquaculture Alliance. <http://www.gaalliance.org/cmsAdmin/uploads/BAP-SalmonF-611S.pdf>
- *Best Aquaculture Practices (BAP) Shrimp Hatchery Standards*. Global Aquaculture Alliance. <http://www.gaalliance.org/cmsAdmin/uploads/BAP-ShrimpH-612S.pdf>
- *Code of Conduct for Responsible Fisheries*. FAO Fisheries Department.
<http://www.fao.org/docrep/005/v9878e/v9878e00.HTM>
- *Code of Conduct for European Aquaculture. Federation of European Aquaculture Producers (FEAP)* <http://www.feap.info/Default.asp?CAT2=0&CAT1=0&CAT0=0&SHORTCUT=610>
- *Killing of Farmed Fish for Disease Control Purposes*. World Organization for Animal Health (OIE). http://www.oie.int/index.php?id=171&L=0&htmfile=titre_1.7.htm

- *Welfare Aspects of Stunning and Killing of Farmed Fish for Human Consumption.* World Organization for Animal Health (OIE).

http://www.oie.int/index.php?id=171&L=0&htmfile=titre_1.7.htm

- *Welfare of Farmed Fish During Transport.* World Organization for Animal Health (OIE).

http://www.oie.int/index.php?id=171&L=0&htmfile=titre_1.7.htm

Animal Welfare in Intensive Livestock Production Systems

Positive features of intensive livestock production systems include better animal nutrition, feed conversion efficiency, health management and environmental control, control over reproduction, genetic selection of better performing animals, and consistency of product quality and delivery to the market place. Taken together, these attributes usually also decrease production costs, generate regular cash flow and offer a reasonable return on investment. Pig and poultry systems are emphasized here, but intensive dairy, beef and lamb production systems are also common. Significant welfare risks may arise in all of these systems.

More specifically, such welfare risks can be associated with limitations on space in individual stalls restricting the movement of animals, high stocking densities in groups increasing the potential for disease transmission and injurious contact with others, barren/unchanging environments leading to behavioral problems, feeding diets that do not satisfy hunger, imposing injurious husbandry procedures that cause pain, and breeding for production traits that heighten anatomical or metabolic disorders. Also, and importantly, inadequate inputs from knowledgeable and skilled stockpersons may increase such welfare risks.

However, these welfare risks can be addressed and may be mitigated by actions that include, but are not limited to, the following: increasing the space allowance for each animal (e.g. individual to group housing, decreasing group stocking density); providing environmental enrichment (e.g. straw for pigs to manipulate, nest boxes for hens) to stimulate positive emotional states; adding bulk to high energy diets to help satisfy appetite; minimizing the pain from invasive husbandry procedures (e.g. avoiding them; use low-pain methods or analgesics); re-aligning production-orientated genetic selection to include welfare traits (e.g. less aggressive or fearful animals or birds); and increasing the monitoring of individual animals

by well-informed stockpersons using direct and/or electronic observation to aid in the early detection and alleviation of health and welfare problems.

On-farm surveillance needs particular attention. Its adequacy should be assessed by reviewing the frequency and duration of the checks performed, as well as the level of attention given to individual animals. Likewise, stockperson knowledge and skills are important. Public demand for reassurance about welfare standards might eventually lead to the introduction of an “Approval to farm animals intensively” certification system which could require farming competency to be demonstrated to independent assessors.

International AW Standards

IFC recognizes the critical intergovernmental role played by the OIE in setting international standards for animal welfare, in accordance with the priorities set by the 178 OIE member countries and territories. These standards are developed by international experts from all five OIE regions and benefit from transparent consultation with all OIE members and external stakeholders, prior to a democratic adoption process. IFC supports the Guiding Principles for Animal Welfare, the Scientific Basis for Recommendations and the General Principles for Livestock Production Systems, as detailed in Chapter 7 of the OIE Terrestrial Animal Health Code.

In the case of potential investments involving dairy cattle, pigs and layer hens, and until relevant OIE standards are developed and adopted in the short to medium term, the standards required will be based on current accepted good practice and scientific consensus.

See: Cronin, G.M., Rault, J-L. and Glatz, P.C. (2014). Lessons learnt from past experience with intensive livestock production systems. Scientific and Technical Review, Office International des Epizooties 33, pp-pp (in press)

Why is IFC Concerned with Animal Welfare?

Increased market awareness of environmental, social, and commercial values is driving changes in the way business is done, leading to the recognition of new risks and opportunities. In the case of animal welfare, failure to keep pace with changing consumer expectations and market opportunities could put

companies and their investors at a competitive disadvantage in an increasingly global marketplace. IFC is therefore committed to helping its clients become aware of potential new opportunities, while at the same time managing immediate risks and impacts related to animal health, such as the spread of avian influenza.

IFC was established to promote sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives. IFC's Agribusiness Department invests in, among other things, livestock and aquaculture projects and production facilities. IFC's US\$300 million portfolio of investments in such facilities consists primarily of investments in integrated pig and poultry operations (with some beef processing). IFC services companies in countries with a competitive advantage in livestock production, as well as those in countries that are in the process of developing or about to develop production systems.

In many of the countries where IFC invests, livestock industries still have a major role to play in benefiting poor rural communities by enhancing food security, providing employment, and reducing the risk of social instability. IFC believes there are situations where modernization of livestock farming can both contribute to the economic viability of poor rural communities as well as provide opportunities for improved animal welfare standards. IFC will therefore consider animal welfare issues when selecting projects and will seek ways to promote systems that positively impact animal welfare.

Working with Partner Organizations

In addressing animal welfare, IFC is guided by its ongoing interactions with key international organizations, including the World Organization for Animal Health (OIE), the Food and Agricultural Organization of the United Nations (FAO), the World Veterinary Association (WVA), the Commonwealth Veterinary Association (CVA), the International Society for Applied Ethology (ISAE), international primary industry organizations, and international animal welfare NGOs. Some of these groups have already contributed to IFC's animal welfare initiative.

IFC recognizes that, although animal welfare is not covered by World Trade Organization (WTO) agreements, there is broad-based support from all stakeholders for the international animal welfare leadership role taken by the OIE on behalf of its 178 members during the last 10 years. IFC will continue to liaise closely with the OIE to ensure that its lending approaches are consistent with the standards developed by the OIE.

Building Sustainable Businesses

IFC's approach to animal welfare balances economic, environmental, and social objectives, while being mindful of companies' objectives and the market environment in which they operate. Based on extensive experience in emerging markets, IFC's approach to animal welfare takes four key dimensions into consideration:

- **Sustainable Economic Development** — Livestock farming can have a major, positive impact on the economic viability of poor rural communities and emerging markets. IFC is committed to promoting sustainable economic development through its investments, which includes attention to recognized standards of animal welfare. However, while animal welfare is an important issue, it has to be seen within the context of other social and economic issues, and improvements should be sought in a way that balances the needs of communities, the private sector, and the environment.
- **Cultural differences**— In many of the countries where IFC invests, animal welfare has an important cultural component. While animal welfare standards are based firmly on scientific knowledge and practical experience, IFC is mindful of the specific needs of people in emerging markets and their cultural practices. These needs have to be accommodated during the implementation of animal welfare standards and balanced with a realistic assessment of market requirements, social expectations, and beliefs. Any changes to husbandry practices need to consider local communities' knowledge, experience and beliefs, as well as the demands of the international food supply chain.
- **Recognizing good practice** — The basic needs of animals, **as reflected by validated scientific understanding**, form the basis of internationally recognized welfare standards and principles of good practice. IFC aims to promote improvement and encourage innovation by demonstrating business case scenarios for change that are both practicable and achievable, and that focus on animal welfare outcomes (i.e. acceptable states of health and welfare in animals).
- **Improving systems**— Most systems of intensive animal farming pose challenges to ensuring animal welfare. IFC would like to encourage the development of more animal-welfare-friendly systems and may become increasingly selective in its assessment of livestock investments where

they do not contribute to improving standards of animal welfare, or to the alleviation of poverty, especially in rural regions.

Working with Companies

An important part of IFC's role is to transfer not just capital but knowledge and guidance to client companies operating in emerging markets. As part of its commitment to sustainability in all its investments, IFC engages with existing and prospective clients in a dialogue on applied or recommended animal welfare standards. Through a collaborative approach, IFC aims to help businesses realize opportunities in livestock farming by improving animal welfare.

IFC is committed to encouraging good practice in animal welfare by

- promoting the business case for changes that enhance animal welfare in private-sector livestock operations
- informing stakeholders of the animal welfare standards and guidelines published by the World Organization for Animal Health (OIE)
- drawing clients' attention to obligatory animal welfare standards developed by their national governments and by trading blocs, such as the European Union
- highlighting to clients that food distribution companies and retailers develop their own standards and continue to upgrade them
- ensuring that animal welfare risks are addressed in all production systems whether they be intensive or extensive in character
- sharing resources and developing guidance material to assist companies animal welfare standards in their operations

Before investing in a livestock operation or enterprise, IFC will assess how the applicant addresses or plans to address various animal welfare aspects. IFC will develop a species-specific checklist that will be discussed with the company during project appraisal and during supervision visits. IFC may decline selected projects where the system is incompatible with acceptable, science-based animal welfare

standards, or where the applicant is not committed to working with IFC and other agencies to improve its operations where such improvement is considered necessary for the sustainability of the applicant's business.

Useful General References

World Organization for Animal Health www.oie.int

World Animal Net is the world's largest network of animal protection societies with consultative status at the United Nations www.worldanimal.net

World Society for the Protection of Animals (WSPA) has consultative status at the Council of Europe and collaborates with national governments, the United Nations, the Food and Agriculture Organization and the World Organisation for Animal Health. www.wspa.org.uk

The Royal Society for the Prevention of Cruelty to Animals (RSPCA) is the world's oldest animal welfare charity, established in London in 1824. It delivers projects, aid and training to more than 50 countries, and has provided in excess of 100 training courses globally over the past decade. www.rspca.org.uk

The Eurogroup for Animals is recognized by the European Parliament and Commission as the leading animal welfare organisation at EU level and represents animal welfare interests on many EU advisory committees and consultation bodies. <http://eurogroupforanimals.org/>

European Commission Community Action Plan on the Protection and Welfare of Animals 2006-2010 http://ec.europa.eu/food/animal/welfare/com_action_plan230106_en.pdf

Welfare Quality® was an EU funded project to integrate animal welfare in the food quality chain. www.welfarequality.net

Animal Welfare Indicators (AWIN) is an EU funded project addressing the development, integration and dissemination of animal-based welfare indicators. <http://www.animal-welfare-indicators.net/site/>

United Nations Food and Agriculture Organization www.fao.org

"**Animals, Ethic and Trade - The Challenge of Animal Sentience**", edited by Jacky Turner and Joyce D'Silva (Earthscan, 2006). This book brings together internationally renowned experts on animal behavior and agriculture with ethicists, religious scholars, international industry, and regulators for the first time to



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debate critical issues in animal welfare and animal sentience. It includes a chapter on "Animal Welfare and Economic development: A Financial Institution Perspective" by Oliver Ryan, IFC