



CODE EFABAR

the commitment to responsible breeding

Code of Good Practice for Farm Animal Breeding Organisations¹

Code EFABAR 2020

¹ 'Breeding Organisations' (Breeders) include all companies responsible for breeding and/or reproduction of farm animals (e.g., primary breeding, herdbook keeping, artificial insemination, embryo technology, hatchery, data recording). Breeding Organisations/Breeders do not have to carry out all these activities themselves. In the context of the Code EFABAR, companies that carry out only reproduction or any other single activity are also considered as Breeding Organisations/Breeders.

1. Introduction

This voluntary 'Code of Good Practice' is designed to provide users with a practical guide to help them to achieve sustainable and balanced farm animal breeding whilst delivering improved transparency for wider society. The use of Code EFABAR demonstrates that breeders carry out responsible breeding.

The Code can be applicable to many farmed animal species, including cattle, pigs, poultry and fish; the principles may also be adapted to many other types of breeding animals. The Code is based on European principles and legislation but can also be used in a more international context – helping breeders to meet European standards in a global market.

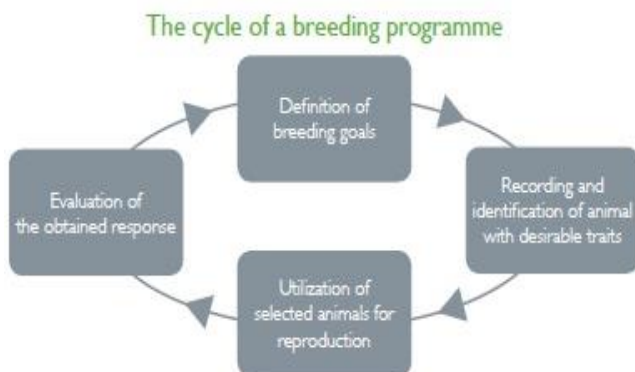
Background

Code EFABAR, the commitment to responsible farm animal breeding, became operational by 2006 and has developed over several years from a series of European Commission funded projects^{2 3} involving a wide range of stakeholders and scientists, including animal breeders, bioethicists, welfare experts, economists, lawyers and consumers. The projects helped to define sustainability and those areas where '*breeding can make a difference*'.

However, in time the definition of sustainability has been adjusted in accordance with updated insights. An important revision on this purpose was performed in 2017. In 2020, an update was performed to improve the six pillars of Code EFABAR and to pursue the engagement of Animal Breeders on achieving UN sustainable development goals (SDGs).

Farm animal breeders are a key element of the food systems and have a direct responsibility to provide genetically improved animals (livestock, fish, shellfish) to farmers. Breeders must deal with a wide range of stakeholders, including customers, policy-makers, consumers, citizens etc. in the development of breeding animals. This is a continuous process of consultation, research, adaptation and improvement to develop appropriate breeding and reproduction programmes.

How is this achieved?



Responsible breeding

Breeding improvements are cumulative (each cycle of breeding builds on the achievements of the last), with improved animals being supplied to a large number of farms. Within the EU, animal farming generates approximately 60% of total agricultural and aqua cultural output. Animal breeding plays a crucial role in the global food systems, balancing efficiency, sufficiency and minimal environmental load. Farm animal breeding is now increasingly more balanced and sustainable than in the past. New technologies, larger breeding populations and modern IT systems are delivering better balanced breeding programmes which address the key issues of **food security, food safety and public health, product quality, genetic diversity, resource efficiency, environmental impact, animal health, and animal welfare.**

² Code of Good Practice for European Farm Animal Breeding (EU funded project FOOD-CT-2003-506506). www.effab.info

³ Sustainable European Farm Animal Breeding (SEFABAR, EU funded project QL67-CT-2000-01368) www.effab.info/sefabar and Farm Animal Breeding and Society (BIO4-1998-970055)

Farm animal breeders operate on a global playing field with strong competition. Therefore, the provision of 'sustainable' solutions is necessary. Breeders must balance societal demands and societal concerns whilst facing technical and economic realities to stay competitive and, importantly, to safeguard global food security for today and in the future.

2. The Code

- The main objectives of Code EFABAR are:
 - ✓ To be the standard instrument for defining and maintaining sustainable and responsible farm animal breeding.
 - ✓ To create transparency for the society.
- Implementation is voluntary but all member companies of [EFFAB](#) are strongly encouraged to implement it and all member associations (umbrella organisations) are strongly encouraged to stimulate their member companies to implement it.
- The provisions of Code EFABAR are equal to, or higher than current national and/or EU legislation. However, use of the Code does not replace these.
- Code EFABAR may be implemented via existing management practices.
- Code EFABAR is designed to be complementary to other existing Good Practice initiatives⁴.
- Commitment to continuous improvement is an integral part of Code EFABAR:
 - ✓ Code EFABAR is reviewed and updated by EFFAB every three years.
 - ✓ EFFAB encourages its members to implement the Code by providing training and practical advice.
- Information about Code EFABAR is publicly available at the [Code EFABAR website](#).

⁴ E.g. Code of Good Veterinary Practice, Code of Conduct for European Aquaculture, Code of Practice for Good Animal Feeding, Code of Conduct for Responsible Fisheries, GLOBALG.A.P. Integrated Aquaculture Assurance Standard, GLOBALG.A.P. Integrated Farm Assurance.

Breeding, sustainability and society

In a society increasingly interested in the health, welfare, environmental and other aspects of animal production and in the use of natural resources, it is important that animal breeders take responsibility for their part of the animal production systems.

The main questions include ways in which breeders influence future developments regarding animal production and ensure global food security while considering issues like environmental load, human and animal health, food safety, welfare of the animals, and enter a dialogue with other stakeholders.

Transparency about the various aspects of food production is important. Since few people produce food, most consumers are distant from the origin of the food production. Yet, they deserve honest information about the way their food is produced and how their values, needs and concerns are being taken into consideration. Animal breeders and farmers must develop and keep domesticated animals in a professional and responsible caring way. Ideally there should be a 100% match between the perception of animal breeding and production in the society and in the farming and breeding practice. Unfortunately, this is not the reality. When food is produced in a responsible way, consumers deserve to feel good about it. Code EFABAR aims to contribute to the mutual understanding between breeders/farmers on the one side and the society on the other side.

3. Guiding Principles

The Guiding Principles define the areas where responsible farm animal breeding can make a difference. They balance scientific knowledge and professional judgement with consideration of societal values and concerns.

Code EFABAR is subdivided into three parts: General Statements, Sustainability and Technologies.

3.1. General Statements

Breeding organisations implementing this Code must comply with the following five general statements:

- ✓ comply with all relevant national and EU legislation e.g. zootechnical⁵, animal welfare⁶ and animal health⁷ and food safety related.
- ✓ consult and collaborate with international, national and regional authorities for the development and implementation of policies to support economic, environmental and social sustainability of the animal breeding sector. Special attention is accorded to the UN SDGs.
- ✓ maintain high standards of biosecurity to minimize transmission of diseases.
- ✓ ensure the health and welfare of the animals under their care.
- ✓ ensure balanced breeding to produce sufficient, safe, nutritious and healthy food, whilst considering genetic diversity, resource efficiency, environment, animal health and animal welfare.

3.2. Sustainable breeding

Sustainable breeding could be defined as:

'the extent to which farm animal breeding, as managed by professional organisations, contribute to the production of sufficient, safe, nutritious and healthy food whilst taking care of genetic diversity, resource efficiency, environment, animal health and animal welfare to create "a better world" for future generations'.

This includes achieving the balance between on the one side food security and on the other side six key subjects: food safety and public health, product quality, genetic diversity, resource efficiency, environment, animal health and welfare. These key subjects are described in more detail below:

Food Safety and Public Health

Breeding organisations are aware of the potential risk of transmitting diseases from animals to humans. They are aware to the growing risk of antimicrobial resistance and contribute to minimize this via the selection of resilient animal and policies on the responsible use of antibiotics.

Breeding organisations take care of Food Safety and Public Health by:

- breeding more robust and healthier animals with better natural/basic disease resistance reducing the occurrence of bacterial and/or parasitic diseases and thus reducing the risk of developing antimicrobial resistance both in animals and in humans;
- breeding animals with better resistance to zoonoses like salmonellosis, campylobacter, avian influenza, brucellosis, tuberculosis, etc.;

⁵ http://ec.europa.eu/food/animal/zootechnics/legislation_en.htm

⁶ http://ec.europa.eu/food/animals/welfare/index_en.htm

⁷ http://ec.europa.eu/food/animals/health/regulation/index_en.htm

- having adequate biosecurity and antimicrobial policy, and measures on own premises;
- having adequate biosecurity policy and measures when transporting live animals and genetic products to avoid transmission of zoonoses.

Product Quality

Product quality is a key issue for breeding organisations and therefore always on their radar. The most appropriate animals in a population are selected for their key traits to improve the product quality for various consumers. Besides, more and more attention is paid to the breeding of animals that can produce specific products for specific consumers.

Breeding organisations realise Product Quality by:

- breeding animals with relevant quality traits to produce milk, meat, flesh, eggs and caviar requested by various types of consumers (e.g. uniformity and quality of meat cuts, leanness of meat, composition of milk, composition of eggs, lipid and flesh colour in salmon for smoked fillets);
- breeding animals with very specific quality traits to produce milk, meat, flesh and eggs for very specific groups of consumers (e.g. babies, persons with food intolerance);
- breeding animals which products have none or minimal negative aspects on the consumption of milk, meat and eggs (e.g. boar taint in pig meat, fishy taint in eggs, fat content in chicken meat, low flesh colour and decreased texture in maturing fish and shellfish);
- having a quality policy on own premises including a system for monitoring the quality of the final product.

Genetic Diversity

Ensuring enough genetic diversity in breeding populations is a prerequisite for breeding programs. Also in general breeding organisations are aware of the necessity to maintain genetic diversity for conservation and (future) breeding purposes.

Breeding organisations contribute to Genetic Diversity by:

- optimally using the existing genetic variation between and within populations;
- monitoring on a permanent basis the rate of inbreeding in own breeding populations and – if relevant – advising farmers to do the same (ruminants);
- if relevant and possible, storing semen and/or embryos and/or other material in (national) gene banks to ensure conservation of biodiversity (e.g. ruminants, pigs);
- if relevant and possible, keeping in-house breeding populations to maintain genetic resources for future demand (e.g. poultry);
- If relevant and possible, genetic resources are kept in multiple secure locations to prevent loss of diversity (poultry);
- breeding fish and shellfish with limited or no genetic interactions with wild con-species in case of escaping;
- avoiding unintentional mating between domesticated and wild animals of the same species (fish) to maintain the biodiversity of wild species;
- initiating and speeding up domestication of new aquaculture species based on genetic characterisation of wild species to capture and manage acceptable genetic variability for long term breeding and to avoid negative effects of inbreeding.

Resource efficiency

Resource Efficiency is an integral part of sustainability. The increasingly globalized market for animal products requires to breed more resource efficient animals (both input and output) to meet the growing demand for animal products while simultaneously meeting the growing shortage of natural resources.

Breeding organisations contribute to Resource Efficiency by:

- breeding animals with an optimal feed efficiency - related to output per animal, longevity (if relevant), liveability - to meet the growing global demand for animal proteins and simultaneously to meet the growing shortage of natural resources;
- if relevant and possible, breeding animals with an optimal efficiency regarding the use of (alternative) natural resources (e.g. water, energy);
- breeding fish which are more adapted to the use of products based on plant ingredients (e.g. proteins and lipids) instead of products based on wild fish (e.g. fish meal and fish oil);
- having proper resource policy and measures on own premises.

Environment

Reducing the environmental footprint, including the influence of animals on climate change, and the adaptation of animals to climate changes are essential elements in current breeding programmes.

Breeding organisations contribute to the improvement of the Environment by:

- breeding animals that have less impact on climate change (e.g. methane emission, global warming potential) and ecosystems considering the entire production system;
- breeding animals with an optimal resource efficiency to reduce the emission of carbon-dioxide, nitrate, phosphate and ammonia, while considering the reusability of the excretion of the animals;
- breeding resilient animals adapted to different and/or changing (climate and/or management) conditions;
- breeding fish and shellfish with limited risks of contamination of wild populations by diseases existing in farms;
- having proper environmental policy and measures, e.g. the use of disinfection materials and - if relevant - (fish) vaccines, on own premises.

Animal Health and Welfare

Improving animal health and animal welfare is not only essential for the profitability of animal production, but also for meeting societal expectations about these issues. Often animal welfare is closely related with animal health. Breeding organisations are also aware of animal welfare issues not related directly to animal health, including transport issues.

Breeding organisations improve Animal Health and Animal Welfare by:

- breeding animals with higher levels of robustness and, resilience to diseases and to external or internal malformations;
- reducing genetic defect incidence;
- breeding animals in such a way that welfare unfriendly practices could be avoided or minimised (e.g. piglet castration, tail docking, beak treatment, dehorning cattle);
- having an adequate biosecurity policy on own premises to avoid transmission of diseases;
- having an adequate biosecurity policy when transporting live animals and genetic products to avoid transmission of diseases;
- having responsible and high level animal welfare policy and measures on own premises and when transporting live animals within companies and to third parties.

3.3. Breeding and reproduction techniques

The Code specifically addresses the use of technology within both **breeding** and **reproduction**.

Biotechnological breeding and reproduction technologies are used for more than 75 years. As one of the first, In the beginning artificial insemination aimed to prevent transmission of venereal diseases. The development of cryopreservation of semen and embryos created the possibility to speed up the results of breeding enormously. Since then several advanced technologies have been developed, not only for reproduction but also for breeding (e.g. embryo flushing, in vitro fertilisation, cloning, genetic modification, genome editing).

Breeding organisations adopting the Code:

- are using breeding and reproduction technologies in a responsible way, not only to be competitive in the market, but moreover to meet societal challenges as mentioned in the six pillars;
- are considering food safety and public health, animal health and welfare, the environment and biodiversity; when using advanced technologies,
- are considering the influence of the used technologies for the parent breeding stock as well as for the resulting progeny thereof;
- are transparent about all animal breeding technologies used within their company.

Breeding organisations having implemented the Code, improve the applied technologies when this increases the sustainability of breeding in an economically viable way.

The species-specific templates of the Code further specify the relevant breeding and reproduction technologies in use.



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