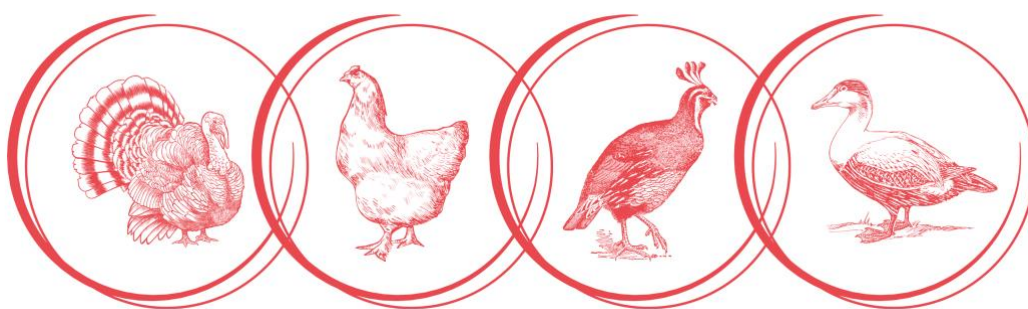




**CODE •  
EFABAR**

The commitment  
to responsible breeding

## **Species Specific Template Code EFABAR**



## **POULTRY Code EFABAR 2023 7<sup>th</sup> Edition**

Company: \_\_\_\_\_

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# The code of good practices for poultry breeding

## 1 Introduction

### 1.1 The impact and structure of breeding in the European poultry sector

#### 1.1.1 Past and Present

In the last three decades, breeding companies/organisations (BC/O) have evolved their breeding programmes by considering sustainability, including animal health and welfare. These aspects have been translated into six pillars, the foundation of modern responsible and balanced breeding and Code EFABAR.

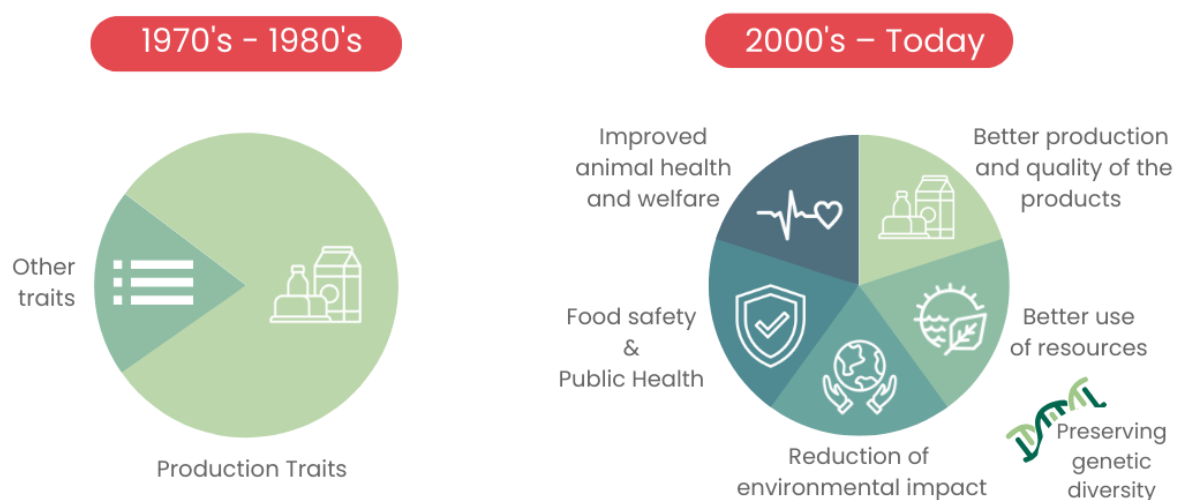


Figure 1 The evolution of animal breeding

Modern breeding consists of defining a balanced combination of traits to ensure the sustainability of the different production systems. The **combination of these traits varies from species to species, region to region/country to country and production system to production system**; the choice of farmers and many other factors related to the availability of resources and other social, environmental, political, and economic situations. Modern poultry breeding is based on these principles.

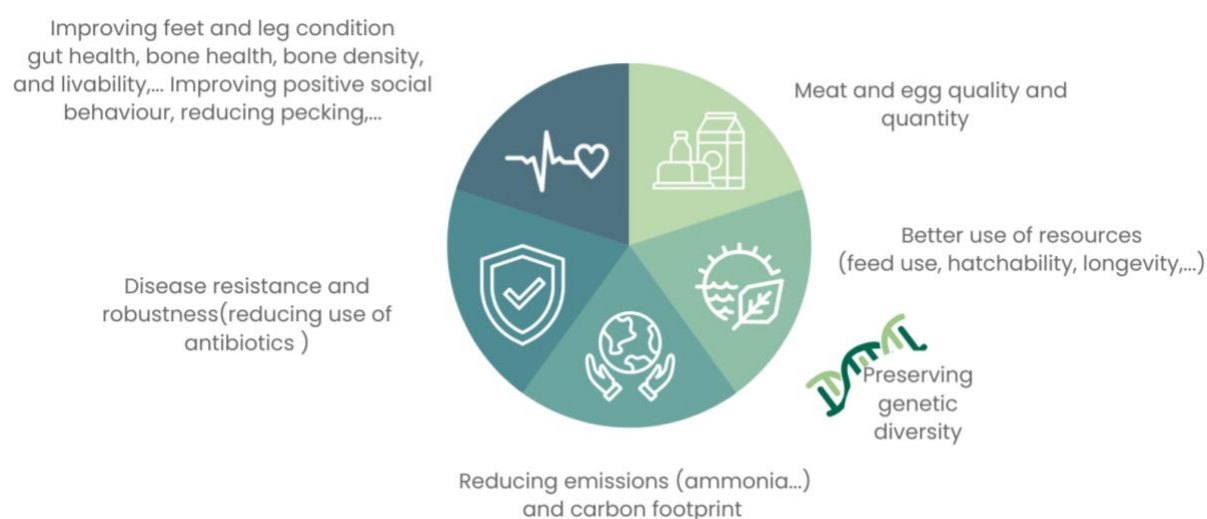


Figure 2 Modern poultry breeding: defining a balanced combination of traits to ensure the sustainability of the different production systems.

### 1.1.2 Modern Poultry Breeding

Modern poultry breeding programs prioritise **responsible and balanced breeding** to nurture healthy and resilient birds, including **chickens, ducks, turkeys, guinea fowls, quails, and geese**, tailored for diverse poultry production systems. These encompass conventional, on-floor, free-range, organic, and traditional productions.

The ultimate goal is to develop poultry resistant to environmental and disease challenges, resulting in improved welfare and high-quality meat and eggs while efficiently managing natural resources, like feed, water, and energy to promote sustainable poultry farming, including a minimal carbon footprint. The structure of the poultry breeding sector is strategically designed to facilitate balanced and efficient poultry production. It has crucial components, including **pedigree farms, grandparents flock farms, parent flock farms, multiplication farms, and commercial farms**.

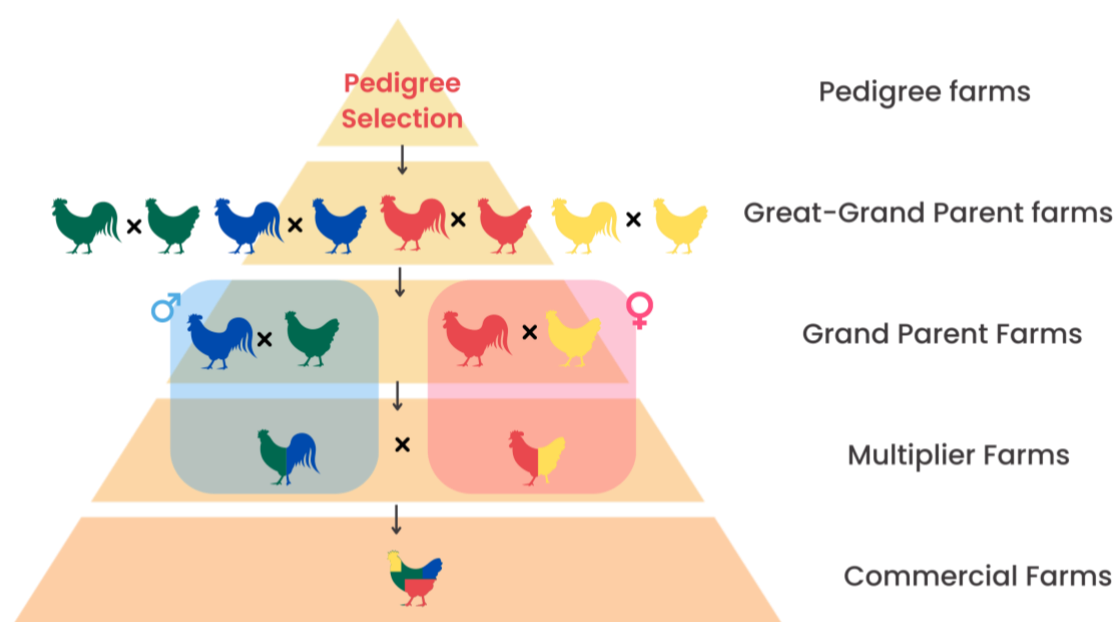


Figure 3 Poultry Breeding Structure

The breeding strategies involve distinct **paternal and maternal lines** for each type of bird. **Paternal lines** in broilers focus on the gait, heart and lung functions, growth rate, feed efficiency, and meat quality, contributing to improved performance and desirable carcass characteristics in their progeny. In contrast, in egg laying, the focus is on egg production and feed efficiency. **Maternal lines** prioritise reproductive performance, mothering ability, and egg-laying efficiency, ensuring the productivity and well-being of breeding females and their offspring. The breeding process combines purebred paternal and maternal lines to create crossbred poultry, inheriting beneficial traits from both parents. This results in offspring with a balanced combination of growth rate and egg-laying capacity. **Hatcheries** play a crucial role in the process, as they are responsible for incubating eggs and ensuring the healthy development of chicks before they are transferred to commercial farms or other poultry production systems.

In the poultry sector, the welfare of birds has become a significant concern, necessitating a shift in housing methods. Cages, once a prevalent method for poultry housing due to their efficient use of space and ability to control health issues, are now being reconsidered. The focus is shifting towards providing birds with a more natural and comfortable environment. As a result, many European poultry breeders, including those

working with chickens and turkeys, **are transitioning to cage-free or enriched cage systems**. These systems allow birds greater freedom to move, perch, and exhibit natural behaviours.

However, it's important to note that cages still play a crucial role, particularly at the nucleus level across poultry species. For certain species, such as quails and some waterfowl like ducks and guinea fowls, cages are still extensively used. For example, in quails, cages are often used to optimise egg collection and individual monitoring, which can be challenging in open systems. Other specialised poultry breeding lines also require controlled environments at **a pedigree level** to ensure accurate data collection and individual mating control for pedigree study and keeping.

In these systems, cages are extremely important for various purposes, including reproduction, individual data collection, breeders' health, animal well-being, and precise mating control. Breeders are actively **developing alternatives to balance efficiency and welfare**. Efforts are concentrated on designing enriched cage systems that encourage natural behaviours while maintaining efficient management. This reflects the sector's commitment to meeting ethical standards and consumer demands while ensuring successful European poultry breeding to stay competitive worldwide.

Establishing structured breeding systems and utilising pure lines, controlled breeding, and advanced reproductive techniques are fundamental in modern poultry breeding across the entire breeding pyramid as illustrated in Figure 3. These practices contribute to genetic advancement, efficient breeding, improved animal welfare, and producing high-quality poultry products, including meat and eggs. **The structured approach ensures continual progress and sustainability within the poultry breeding sector.**

### 1.1.3 Vision for the future

Envisioning the future of the European poultry breeding sector, it's clear that significant transformation is underway. Genetic improvement, underpinned by both traditional and innovative breeding technologies, is pivotal to the sector's progress. The breeding programme **must broaden its objectives to encompass a wider range of traits and species**, ensuring the sector can meet varied consumer demands and adapt to changing environmental conditions.

**Traditional breeding tools**, honed over centuries, remain the sector's backbone. They provide a robust foundation for breeding programmes, offering **proven methods that ensure the health and diversity of our poultry species**, including managing inbreeding, which is **crucial for maintaining genetic diversity and health**.

Alongside these traditional methods, new technologies are playing an increasingly important role. Innovations in genomics, for example, are allowing us **to understand and utilise the genetic makeup of poultry species with unprecedented precision**. These technologies are **not replacing traditional methods but rather complementing them, providing new tools and possibilities for breeders**.

Investment in smaller poultry species is also key. By focusing on these species, we can bridge the gap between different poultry species and ensure overall advancement and diversification of the sector.

A crucial aspect of this vision is the sector's commitment to the health, productivity, and welfare of poultry populations. Breeders' practices must promote the well-being and productivity of these populations, including ensuring the welfare of birds during transport. This **balance between innovation, productivity, and welfare underscores the sector's vision for a sustainable and prosperous future**. The focus on **disease resistance, feed efficiency, and overall robustness of the birds is paramount, contributing to global food security and sustainability**.

Research and development play a pivotal role in this transformation. **Collaboration with researchers and academia is crucial to spur innovation and keep the sector at the cutting edge of technological advancements**. This collaboration extends across the agrifood value chain, promoting a comprehensive approach to sustainable poultry farming.

As we look ahead, we are thrilled to witness the positive ripple effects of these commitments on the European poultry breeding sector.

#### Breeding Technologies in Poultry

The poultry sector employs various breeding technologies, each with its unique approach and benefits. These technologies, ranging from traditional methods like selective breeding to advanced techniques such as gene editing, play a crucial role in the sector's development. An emerging area of focus in these technologies is the understanding and management of gut microbiota, which plays a significant role in poultry health and productivity.

#### Functional Annotation, Novel Traits, and Epigenomics in Poultry

The future of the poultry sector is not just about the present, but also about the potential of what could be. This is where functional annotation, novel traits, and epigenomics come into play. These three areas are critical for the future development and sustainability of the poultry sector, and their advancement relies heavily on the collaboration between breeders, researchers, and academia.

### Precision Livestock Farming (PLF) in Poultry

Precision livestock farming (PLF) is an approach that enables the farmer to have more objective information about the animal to make better choices about the sustainability of their production system.

By adopting several core principles from PLF, contributes to:

- Moving commercial poultry farming from the traditional experience-based to a knowledge-based production regime.
- Facilitating and automating poultry farming operations based on data collected by sensors and other technology.

In conclusion, the poultry sector is pioneering sustainable practices through advanced technologies and precision livestock farming. Prioritising bird well-being and environmental conservation, the sector delivers high-quality poultry products. The commitment to innovation, animal welfare, and sustainability is shaping the future of not only the European but also the global poultry sector. Collaboration between breeders, researchers, and academia drives these advancements, ensuring continued growth and success.

*Further details and examples can be found in [Section 7.2](#)*

## 1.2 Contribution to the United Nations Sustainable Development Goals (UN SDGs)

Sustainable production is becoming a major focus across the farmed animal sector to ensure that efficient and high-output systems are environmentally friendly. The United Nations have agreed on 17 sustainability development goals to be addressed by various industrial and production systems (<https://sustainabledevelopment.un.org/>). Poultry production systems can directly address 6 of these goals, as summarised below:

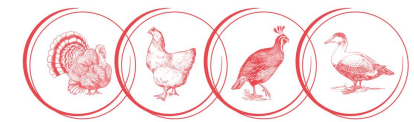


Figure 4 The contribution of Code EFABAR to six of the UN SDGs



### 1.3 The vision and role of \_\_\_\_\_ towards the journey to sustainable and balanced breeding

This section asks BC/O to describe their vision and how they implement it through breeding goals. It's important to mention the variety of livestock systems to which the companies provide genetics, and which are the differences between breeding programs and goals for those different systems, if any.



## 2 Responsible and balanced breeding

**Responsible and balanced animal breeding** in poultry encompasses strategies to maintain the long-term well-being of terrestrial animals, the environment, and expectations from the food supply chain and society. It emphasises achieving a balance between genetic improvement and preserving **genetic diversity**. Additionally, it prioritises the **efficient utilisation of resources**, **improving animal health and welfare**, **safeguarding the environment**, and **ensuring public health and food safety**.

These principles, collectively known as the six pillars of Code EFABAR, form the foundation of responsible poultry breeding practices.

### Guidelines and Instructions for Breeders

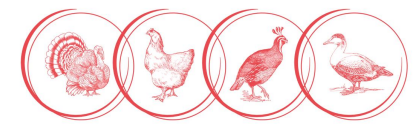
This section will explore the breeding and management elements incorporated into your breeding company's (BC) breeding programme for each of the 6 pillars:

1. We will examine the implementation of specific breeding and management elements and request detailed information on how each element is incorporated. If any elements still need to be implemented, we encourage you to share the reasons behind this decision, fostering a transparent understanding of your breeding practices.
2. Additionally, we kindly request data showcasing the progress made; this can be confidential data or published papers. Please note that **EFFAB respects confidentiality**, and all information provided will be considered confidential unless explicitly stated otherwise.
3. Alternatively, describe the current progress and provide insights into the expected advancements for each breeding element.

These questions aim to facilitate a comprehensive understanding of your breeding programme and its achievements. By sharing your self-regulated practices, we can collectively promote the importance of balanced and sustainable breeding programmes to a wider audience, including stakeholders, policymakers, and the broader society.



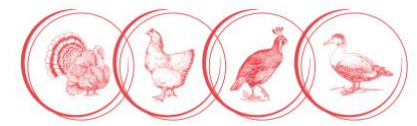
Figure 5 The six pillars of Code EFABAR



## 2.1 Animal Health and Welfare

This pillar focuses on ensuring the well-being of poultry in the farming system. Breeding practices involve selecting birds with genetic traits for disease resistance or resilience, reducing the risk of common poultry diseases like avian influenza or respiratory and intestinal infections contributing to reducing antibiotic use. Management efforts include providing appropriate housing conditions, biosecurity measures, and access to proper nutrition and water, and healthcare to ensure the overall health and welfare of the poultry. For example, breeders select breeds or lines that have demonstrated resistance to specific diseases prevalent in their region, combined with providing clean and comfortable housing with proper ventilation and sanitary conditions to ensure the overall flock's health and welfare.

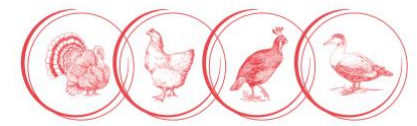
Has the breeding company (BC/O) implemented the following <b>breeding elements</b> in its breeding programme? (Yes, No or Not Applicable (NA))	Can you provide more details about how the breeding element has been implemented? And if not, why not?	Can you provide data to show progress in the last 3 years and include the animal's stage of life the data is relevant? Alternatively, describe the current and expected progress.
Liveability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Disease resistance <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Leg Health <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Bone Quality in laying hens <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Cardiovascular capacity and function/ascites syndrome <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Cannibalism, feather pecking <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Behaviour <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Gut health and bird physiology <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Keel Bone Damage in laying hens <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Adapted animals to field conditions to avoid the use of cages <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		



Genetic Defects - Broiler - Layers - Turkey - Duck - Quails - Guinea Fowls - Geese	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Are there any other breeding elements concerning animal health and welfare that are important to your BC/O and should be considered?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	
<b>Have the following management elements been implemented in your breeding programme?</b>	<b>If yes, give a short explanation and provide supporting documents if possible.</b>	<b>If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?</b>	
Has the BC/O a welfare policy on its own premises making a reference to the Five Freedoms <sup>1</sup> : Or Five Domains <sup>2</sup> : and is the welfare policy implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O a policy to minimise the "welfare unfriendly" acts it undertakes as part of its operation (cages, toe trimming etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O a specific policy on how to house its animals in each specific stage of an animal's life (to ensure proper care and complying with the	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		

<sup>1</sup> Five Freedoms: <https://www.woah.org/en/what-we-do/animal-health-and-welfare/animal-welfare/> - see General Guide page 11

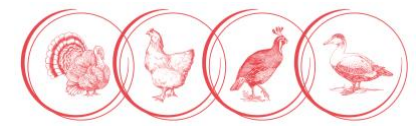
<sup>2</sup> Five Domains: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5575572/> - see General Guide page 11



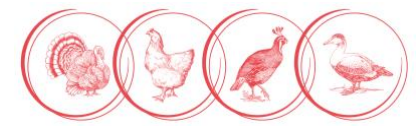
animal's intrinsic needs) and is it implemented?			
Has the BC/O a policy in place to periodically train and update its animal care takers on how to manage and handle the animals and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O a biosecurity policy on its own premises (to avoid diseases and the spreading of diseases to other premises) and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the company have a policy for treatment of flocks with antibiotics?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O measures in place that ensure proper zoning of different production stages on its own premises and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O applied the WOAH <sup>3</sup> 's principle of compartmentalisation <sup>4</sup> ?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Can the BC/O list the bio-securities measured applied during the safe transport of the animals?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O a policy on how to handle its animals prior to and during transport and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		

<sup>3</sup> WOHA: World organisation for Animal Health

<sup>4</sup> Application of compartmentalisation: [https://www.woah.org/fileadmin/Home/eng/Health\\_standards/tahc/2018/en\\_chapitre\\_application\\_compartment.htm](https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/2018/en_chapitre_application_compartment.htm)



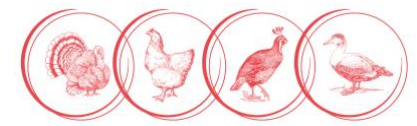
Does the BC/O have its own internal transportation protocol?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Given yes, please fill in the <u>annex A2</u></b>
<b><i>Are there any other management elements concerning animal health and welfare that are important to your BC/O and should be considered?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>



## 2.2 Environment

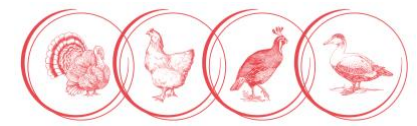
This pillar aims to minimise the environmental impact of poultry farming. Breeding efforts focus on selecting birds with reduced environmental impact, such as those that produce less ammonia in their manure, have efficient nutrient utilisation kg CO<sub>2</sub>-eq per kg produced product (eggs or meat) and reduced Land Use Change (LUC) emission. Management practices include implementing sustainable farming techniques, such as efficient waste management, using renewable energy sources, and reducing the use of chemicals. For instance, poultry breeders focus on developing strains of birds that produce manure with lower ammonia content and adopt practices like proper manure storage and recycling to minimise environmental pollution.

Has the breeding company (BC/O) implemented the following <b>breeding elements</b> in its breeding programme?		Can you provide more details about how the breeding element has been implemented? And if not, why not?	Can you provide data to show progress in the last 3 years and include the animal's stage of life the data is relevant? Alternatively, describe the current and expected progress. <i>(Note: Progress relative to the future generation)</i>
Reduction N and P emission (consider the reusability of these elements in the manure)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Reduction of Green House Gas (GHG) emission	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Reduction NH <sub>3</sub> emission	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Adaptation to different environments (climate change)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b><i>Are there any other breeding elements concerning environment that are important to your BC/O and should be considered?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	
Have the following <b>management elements</b> been implemented in the BC/O breeding programme?		If yes, give a short explanation and provide supporting documents if possible.	If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?
Has the BC/O an environment policy on its own premises and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O had a policy to reduce carbon footprint?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		



Does the BC/O do a routine review to monitor improvement?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b><i>Are there any other management elements concerning environment that are important to your BC/O and should be considered?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	

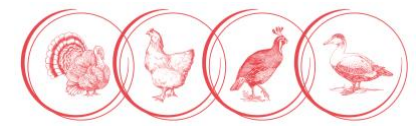




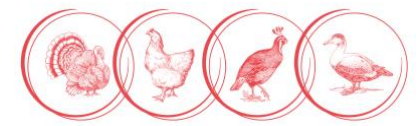
## 2.3 Better Use of Resources

This pillar seeks to optimise the use of resources in poultry production. Breeding practices involve selecting birds with improved feed conversion efficiency and reduced water consumption. Management efforts include implementing efficient feeding strategies, optimizing nutrient utilization, and reducing waste generation. In practice, poultry breeders select strains of birds that efficiently convert feed into meat or eggs, while carefully plan and monitor feed rations to ensure optimal growth and minimal wastage.

Has the breeding company (BC/O) implemented the following <b>breeding elements</b> in its breeding programme?		Can you provide more details about how the breeding element has been implemented? And if not, why not?	Can you provide data to show progress in the last 3 years and include the animal's stage of life the data is relevant? Alternatively, describe the current and expected progress.
Longevity and/or liveability	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
High saleable egg number (egg income/number per hen housed)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Hatchability	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Daily Gain	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Feed efficiency (related to upcoming lack of resources)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Robustness	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<i>Are there any other breeding elements concerning a better use of resources that are important to your BC/O and should be considered?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No	List here:	
Have the following <b>management elements</b> been implemented in the BC/O breeding programme?		If yes, give a short explanation and provide supporting documents if possible.	If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?
Has the BC/O a resource efficiency policy on its own premises and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O procedures for processing of or reuse of residual products?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		



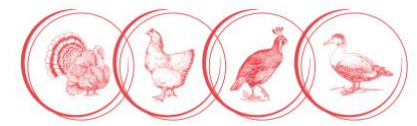
<b><i>Are there any other management elements concerning a better use of resources that are important to your BC/O and should be considered?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	



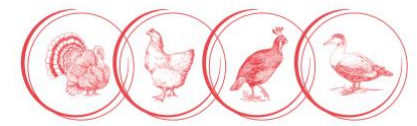
## 2.4 Genetic diversity

This pillar emphasises maintaining genetic diversity within poultry populations. Breeding strategies aim to preserve and promote rare or indigenous breeds, avoiding over-reliance on a limited number of elite lines. Management practices involve implementing breeding programs that prioritize genetic diversity and encourage the conservation of distinct poultry breeds. For example, poultry breeders collaborate to preserve traditional or rare poultry breeds, ensuring that unique genetic traits are safeguarded for future generations.

Has the breeding company (BC/O) implemented the following <b>breeding elements</b> in its breeding programme?		Can you provide more details about how the breeding element has been implemented? And if not, why not?	Can you provide data to show progress in the last 3 years and include the animal's stage of life the data is relevant? Alternatively, describe the current and expected progress.
Genetic variation within purebred lines	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Conservation of genes of purebred lines (in situ or ex situ)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Limiting inbreeding (balancing rate of inbreeding with rate of genetic change)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Preservation and improvement of local breeds	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b>Are there any other breeding elements concerning genetic diversity that are important to your BC/O and should be considered?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	
Have the following <b>management elements</b> been implemented in the BC/O breeding programme?		If yes, give a short explanation and provide supporting documents if possible.	If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?
Does the BC/O record and monitor the inbreeding level in its pure lines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the company maintain non-core product lines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		



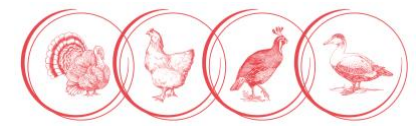
Does the company hold lines in suitable locations to ensure security of the genetic diversity?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the BC/O have or contribute to a gene bank for commercial breeds?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the BC/O contribute to the conservation of genes of rare and threatened breeds?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b><i>Are there any other management elements concerning genetic diversity that are important to your BC/O and should be considered?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	



## 2.5 Product Quality

This pillar focuses on improving the quality of poultry products, such as meat and eggs. Breeding efforts aim to select birds with genetic traits that contribute to superior product attributes. Management practices include proper husbandry, balanced nutrition, and appropriate processing and handling methods to maintain high product quality. For instance, poultry breeders may focus on developing strains of birds with desirable meat characteristics.

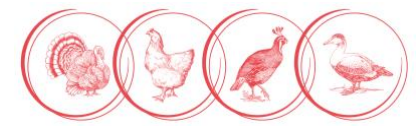
Has the breeding company (BC/O) implemented the following <b>breeding elements</b> in its breeding programme?		Can you provide more details about how the breeding element has been implemented? And if not, why not?	Can you provide data to show progress in the last 3 years and include the animal's stage of life the data is relevant? Alternatively, describe the current and expected progress.
Carcass quality including meat quality	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Egg quality	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Specific products for specific consumers (if applicable for the BC)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b>Are there any other breeding elements concerning product quality that are important to your BC/O and should be considered?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	
Have the following <b>management elements</b> been implemented in the BC/O breeding programme?		If yes, give a short explanation and provide supporting documents if possible.	If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?
Does the BC/O ensure regular training of its employees to ensure the following for high product quality: - Proper Husbandry - Proper processing and handling methods	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the BC/O implement and record balanced nutrition for high-quality end products?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b>Are there any management elements concerning product quality that are important to your BC/O and should be considered?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No		



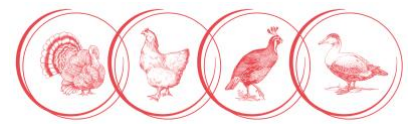
## 2.6 Food Safety and Public Health

This pillar emphasises producing safe and healthy poultry products while minimising risks to public health. Breeding practices target genetic traits that reduce the risk of transmitting zoonotic diseases or improve food safety. Management efforts include implementing strict biosecurity measures, maintaining proper hygiene, and adhering to food safety standards throughout the poultry production and processing chain. In practice, poultry breeders select birds with enhanced immunity to specific zoonotic diseases and implement biosecurity protocols and rigorous sanitation practices to prevent disease transmission and ensure safe products for consumers and workers.

Has the breeding company (BC/O) implemented the following <b>breeding elements</b> in its breeding programme?		Can you provide more details about how the breeding element has been implemented? And if not, why not?	Can you provide data to show progress in the last 3 years and include the animal's stage of life the data is relevant? Alternatively, describe the current and expected progress.
Reduction of use of antibiotics and lowering the antimicrobial resistance (e.g., breeding more disease resistant and robust animals)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Meat quality (related to food safety and public health) (e.g., minimizing the spreading of zoonotic diseases through meat)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Egg quality (related to food safety and public health)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b><i>Are there any other breeding elements concerning food safety and public health that are important to your BC/O and should be considered?</i></b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	
<b>Have the following <b>management elements</b> been implemented in the BC/O breeding programme?</b>		<b>If yes, give a short explanation and provide supporting documents if possible.</b>	<b>If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3 years?</b>
Has the BC/O a biosecurity policy on its own premises (to avoid spreading zoonoses) and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		



(Note: if possible, list the diseases taken into account)			
Has the BC/O an antimicrobial policy on its own premises and is it implemented?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC, as part of their biosecurity processes, procedures to reduce the potential risk of contamination from staff and equipment? E.g., Vaccination of Staff, or Routine laboratory test of hatcher and incubator,	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
<b>Are there any other management elements concerning food safety and public health that are important to your BC/O and should be considered?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>List here:</b>	



### 3 Responsible use of technologies

Modern animal breeding comes with advancements in tools and technologies used for breeding and reproduction. Therefore, prioritising the conscientious and ethical application of technologies in breeding, considering the welfare of the animals, their genetics, the environment in which they evolve, the resources available and their optimal use, the quality of the products, the one health concept, and broader ethical implications are crucial.

- Is the BC/O responsibly using established breeding and reproduction technologies (e.g., Genomic Selection, Artificial Insemination, Performance and Progeny testing)?
- If yes, which ones and for which purpose

Technology used	Purpose (Benefits)

- What does responsibly mean in this context for the BC?



- Is the BC/O responsibly using new breeding or reproduction technologies (e.g., Novel Traits, Precision Livestock Farming for new traits in welfare or product quality, Marker Assisted Selection, Genomic Prediction, Gene Editing, Cloning)?

☐Yes ☐No

If yes, which ones and for which purpose?

Technology used	Purpose (Benefits)

- Is BC/O excluding any technologies? Why?

## 4 Research, innovation, and public perception

Research, innovation, and public perception are vital in modern poultry breeding. The research contributes to advancements in genetics, health, nutrition, and breeding technologies, enabling the identification of desirable traits and the development of efficient breeding strategies. The innovation introduces new tools and practices that enhance productivity, sustainability, and poultry welfare. Additionally, public perception guides the sector towards transparent and ethical practices, aligning breeding systems with societal values and fostering trust between breeders and consumers. Integrating research, innovation, and public perception ensures modern poultry breeding practices' continuous improvement and responsible development.

- Does the BC/O invest in research and development in new breeding and reproductive technologies and novel traits?

☐Yes ☐No

- Which ones and for what?

- Does the BC/O collaborate with research institutes?

☐Yes ☐No

- In your opinion, what novel traits or breeding goals should be considered for poultry breeding in the future?

- Is the BC/O aligned with the principle of the Three Rs principle<sup>5</sup> (3Rs)/Responsible research and innovation<sup>6</sup>([RRI](https://ec.europa.eu/health/scientific_committees/opinions_layman/en/non-human-primates/glossary/tuv/three-rs-principle.htm)) when using animals for research and innovation (RI)?

☐Yes ☐No

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<sup>5</sup> The three Rs (3Rs): [https://ec.europa.eu/health/scientific\\_committees/opinions\\_layman/en/non-human-primates/glossary/tuv/three-rs-principle.htm](https://ec.europa.eu/health/scientific_committees/opinions_layman/en/non-human-primates/glossary/tuv/three-rs-principle.htm)

<sup>6</sup> Responsible Research and Innovation (RRI): <https://op.europa.eu/en/publication-detail/-/publication/ee9bacdf-fdad-46eb-8cd8-32879e310191/language-en>

- If not, what is the BC's current policy to ensure welfare and ethics are applied during RI?

- Does the BC/O take action to engage with society and other stakeholders than poultry producers? (e.g., advocate animal health and welfare, balance poultry breeding, etc.)

☐ Yes ☐ No

- Could you give some examples on how?

## 5 Breeding Policy Declaration

**Company Name:**

**Manager/CEO Name:**

We are committed to ensuring that the rules of Code EFABAR are implemented and maintained throughout our operational and producing activities related to animal breeding and reproduction.

This is achieved by:

1. Compliance and implementation of the relevant and applicable legislation.
2. Implementation of Good Practices for Responsible and Balanced Breeding and Reproduction as indicated in the Code EFABAR, Version 2023.
3. Information and training of our staff in Code EFABAR requirements to ensure that it is continuously implemented.

**Date:**

**Signature:**

## 6 Declaration of Approval by the EFFAB Director

Having evaluated the indications as provided by the applicant breeding/reproduction company, I have come to a conclusion and propose that the certificate of compliance, according to the regulations of Code EFABAR shall be issued to the applicant.

**Date:**

**Place: Brussels**

**Period of validity:**

**EFFAB Director Signature:**

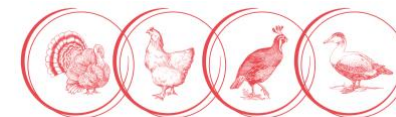


## 7 ANNEX

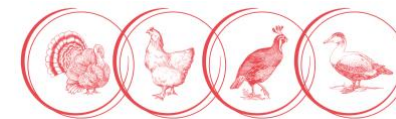
### 7.1 Animal Health and Welfare: Transport of breeding animals

Has the following <b>transportation policy element</b> been implemented in the BC?		If yes, give a short explanation and provide supporting documents if possible.	If no, can you explain why? Is there a possibility for these management elements to be implemented in the next 3-5 years?
Are all persons involved with the transport of breeding animals aware of and comply with any current EU/National/international Legislation and Codes of Practice that apply to the movement of breeding animals? And in particular to <b>1/2005 EC</b> <sup>7</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the Breeding Company (BC/O) have appointed Animal Welfare Officer(s) that put in place and supervises the transport procedures and contingency plans?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Is the BC/O checking all the certificates and authorizations of the operator transporting livestock on behalf of the BC?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Is the vehicle and containers in use being maintained and kept in a condition which ensures that all animals can be transported under the expected conditions to which it was designed to ensure biosecurity and animal welfare?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Does the BC/O check that transport and resting times are respected?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		

<sup>7</sup>Council Regulation on the protection of animals during transport: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L:2005:003:FULL>



Are all relevant legislation in relation to stocking density during transport of any species applied?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O a robust policy to check that breeding animals fit for transport before leaving?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O put in place ways to ensure that the temperature in the means of transport for day old chicks is kept in the expected range temperature to ensure their best comfort	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		
Has the BC/O applied the same for - All live animals - Eggs	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		



## 7.2 Glossary

Here's a brief introduction to some of the breeding technologies:

- **Gene Editing**

While gene editing is not currently in use, it represents a promising area of research. This advanced technology has the potential to allow breeders to incorporate advantageous genes, thereby enhancing disease resistance and overall well-being in diverse poultry species. Any research in this area is conducted responsibly under the Responsible Research and Innovation (RRI) framework, ensuring a transparent, inclusive approach that is responsive to societal needs and values.

- **Genomic Selection**

Genomic selection, a modern breeding approach, involves the analysis of individual bird DNA to identify valuable genetic traits at an early stage. This enables the selection of birds exhibiting the most desirable characteristics.

- **Gut Microbiota**

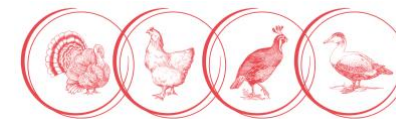
The gut microbiota in poultry plays a significant role in their health and productivity. The initial intestinal microbiota in chickens is acquired from different sources, including environmental bacteria. This microbiota has profound impacts on poultry health and productivity. Advanced techniques are being used to study the gut microbiota, such as metagenomic association analysis, which can help identify potential biomarkers to differentiate laying periods or breeds of laying hens. Understanding and managing the gut microbiota can improve poultry health and productivity.

- **Marker-Assisted Breeding**

Marker-assisted breeding, a technique that uses molecular markers identifiable DNA sequences located near a gene of interest on a chromosome, is used to select individuals carrying desirable traits. Once reliable markers are identified, early marker-assisted selection can be performed with great selection accuracy. This technique is used responsibly, considering the welfare of animals.

- **Selective Breeding**

Selective breeding, a traditional method, involves choosing parent organisms with traits desirable to the breeder to produce offspring that inherit these more favourable characteristics. The sector's focus remains on using this tool responsibly, considering the diversity of the population, and managing inbreeding levels.



## Epigenomics, Functional Annotation and Novel Traits in Poultry

- **Epigenomics**

These studies show how the environment can change how genes work in birds. Understanding these changes can help us learn how to create better conditions in poultry farming, contributing to the welfare of the animals and the sustainability of the sector.

- **Functional annotation**

This process, akin to assigning a job description to each gene in a bird, helps us understand what each gene does and how it affects the bird's characteristics. This understanding is crucial as it allows us to make informed decisions about which traits to select for breeding, ensuring the health and productivity of future poultry populations.

- **Novel traits**

These are new characteristics that scientists are trying to develop in birds. The exploration and development of these novel traits are vital for the sector's adaptability to changing environmental conditions and consumer demands.

## Precision Livestock Farming (PLF) in Poultry

Breeders are investing in and incorporating various advanced technologies:

- **RFID tags** (Radio Frequency Identification tags) use radio frequencies to provide information on the birds' movement, behaviour, and feeding habits.
- **Biosensors** can detect pathogens in the air or the stool, contributing to disease prevention and control.
- **Artificial Intelligence (AI)** and **Machine Learning (ML)** are used to analyse the vast amounts of data collected by sensors and other technologies. These technologies can identify patterns and predict, contributing to more efficient and effective management practices.
  - **AI-based systems** can optimise breeding processes by automating tasks like egg grading, identifying live embryos, controlling incubation conditions, and predicting hatching probability.
  - **Computer Vision (CV)** can be used to monitor animal behaviour, detect health issues, and assess welfare.