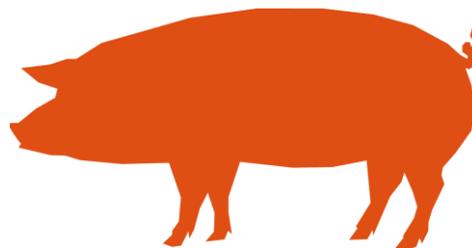




**CODE EFABAR**  
the commitment to responsible breeding

**Species Specific Template**  
**Code EFABAR**  
**PIGS**



**Code EFABAR 2020**

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



## PIGS

### 1. Impact and structure of breeding in the EU pig industry

During the twentieth century pig breeding moved from purebred breeding to crossbreeding of purebred lines. Crossbreeding creates heterosis (hybrid vigour) and allows different selection strategies to be applied to male and female lines. Pig breeding companies once focused on traits with high heritability, such as overall growth and body leanness.

Nowadays by using computer technology, they are focusing more on challenging traits with lower heritability, e.g. fertility, product quality, and health traits. Furthermore, genomic selection and marker assisted selection enables breeding companies to establish genetic improvements in traits today, that would have been very difficult with the traditional breeding methods.

At research level, new technologies, such as 'gene editing' (genotyping the animal's DNA followed by a correction of one or more of the base pairs) are being explored. Such new technologies have the potential to considerably speed up the improvement of breeding stock to meet societal demands better and faster. However, gene editing technologies also raise legal issues and societal concerns related to ethics, food safety, and environmental protection, which all need to be addressed.

Selective breeding in the EU pig industry contributes to the Sustainable Development Goals (SDGs) defined by the FAO:



Goal 2 (Zero hunger) by selecting cost efficient animals, which makes pork an affordable source of protein for a wider group of consumers,



Goal 3 (Good health and well-being) by selecting lean and robust animals producing high quality food with low fat content and reducing the need for using antibiotics,



Goal 1 (No poverty) and Goal 8 (Decent work and economic growth) by servicing and helping pig producers to develop their business and by employment of staff on company owned facilities on rural European territories,



Goal 12 (Responsible consumption and production) and Goal 13 (Climate action) by improving the efficiency of pork production by selecting more feed efficient animals producing more high-quality protein and improving animal health, which reduces losses, all of which results in reduced GHG emissions,



Goal 15 (Life on land) by responsible management and preservation of genetic resources.

### 2. Introduction

***Give a brief description of the governance policy of the Breeding Company (BC)<sup>1</sup> regarding the societal challenges as mentioned in the Code EFABAR General Document. Besides the 6 pillars of the Code EFABAR, take also Food Security into consideration.***

<sup>1</sup> Breeding companies include all organisations responsible for breeding and reproduction of farm animals (e.g., primary breeding, herdbook keeping, artificial insemination, embryo technology, hatchery, (grand) parent genetics, data recording).

### 3. SUSTAINABILITY

#### A. Food Safety and Public Health

Breeding Element	Has the BC implemented this element in its breeding program, directly or indirectly? Yes/No	If yes, how has the BC implemented this element in its breeding program? If no, does the BC plan to address this element in its breeding program in the next 3 years? If no, why not?
Reduction of antimicrobial usage by selecting more disease resistant and robust animals	<i>To be filled by the company</i>	<i>To be filled in by the company</i>
Meat safety (e.g. minimizing the spread of diseases through meat)		

Management Element	Yes/No	If yes, give a short explanation If no, explain why not?
Has the BC a biosecurity policy on its own premises (to avoid spreading zoonoses) and is it implemented?		
Has the BC an antimicrobial policy on its own premises and is it implemented?		
Has the BC, as part of their biosecurity processes, procedures to reduce the potential risk of contamination from staff and equipment?		

#### B. Product Quality

Breeding Element	Has the BC implemented this element in its breeding program, directly or indirectly? Yes/No	If yes, how has the BC implemented this element in its breeding program? If no, does the BC plan to address this element in its breeding program in the next 3 years? If no, why not?
Carcass quality (carcass composition - lean to fat ratio, cut sizes)		
Meat quality (nutritious value, shelf life, appearance, taste/flavour, PSE, Acid Pork)		
Reduction of boar taint in meat		
Specific products for specific consumers (if there are any)		

#### C. Genetic diversity

Breeding Element	Has the BC implemented this element in its breeding program?	If yes, how has the BC implemented this element in its breeding program?



	program, directly or indirectly? Yes/No	If no, does the BC plan to address this element in its breeding program in the next 3 years? If no, why not?
Genetic diversity within purebred lines (preventing inbreeding at population and individual level)		
Conservation of genes of purebred lines (in situ or ex situ)		
Conservation of genes of rare and threatened breeds		
Provision of mating programs for farmers to control inbreeding		

Management Element	Yes/No	If yes, give a short explanation If no, explain why not?
Does the BC have or contribute to a gene bank for commercial pig breeds?		
Does the BC contribute to the conservation of genes of rare and threatened pig breeds?		

#### D. Resource Efficiency

Breeding Element	Has the BC implemented this element in its breeding program, directly or indirectly? Yes/No	If yes, how has the BC implemented this element in its breeding program? If no, does the BC plan to address this element in its breeding program in the next 3 years? If no, why not?
Longevity of the sow		
Fertility (maternal and paternal)		
Survival of piglets/pigs <ul style="list-style-type: none"> <li>- at birth</li> <li>- at rearing</li> <li>- until slaughter</li> </ul>		
Feed efficiency <ul style="list-style-type: none"> <li>- general</li> <li>- energy efficiency</li> <li>- protein efficiency</li> </ul>		
Growth rate		
Breeding of pigs that could be fed with alternative feed materials		

Management Element	Yes/No	If yes, give a short explanation If no, explain why not?
Has the BC a resource efficiency policy on its own premises and is it implemented?		

Has the BC procedures for processing of or reuse of residual products?		
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### E. Environment

<b>Breeding Element</b>	<b>Has the BC implemented this element in its breeding program, directly or indirectly? Yes/No</b>	<b>If yes, how has the BC implemented this element in its breeding program? If no, does the BC plan to address this element in its breeding program in the next 3 years? If no, why not?</b>
Reduction of N and P emission (considering the reusability of these elements in the manure)		
Reduction in Green House Gas (GHG) CO <sub>2</sub> emission		
Reduction NH <sub>3</sub> emission		
Adaptation of pigs to different environments including climate change		

<b>Management Element</b>	<b>Yes/No</b>	<b>If yes, give a short explanation If no, explain why not?</b>
Has the BC an environment policy on its own premises and is it implemented?		
Has the BC a policy to reduce carbon footprint?		



## F. Animal Health and Welfare

Breeding Element	Has the BC implemented this element in its breeding program, directly or indirectly? Yes/No	If yes, how has the BC implemented this element in its breeding program? If no, does the BC plan to address this element in its breeding program in the next 3 years? If no, why not?
Fertility		
Maternal ability		
Teat number & quality (related to piglet health & welfare)		
Milk production/availability for piglets		
Decrease of congenital defects with a genetic component (like Atresia Ani, Cryptorchidism, Splayleg, Hermaphroditism and Hernia)		
Disease resistance		
Leg and back problems (skeletal, injuries, infections)		
Castration of piglets		
Misbehaviour: tail biting, ear biting, flank chewing		
Elimination of stress susceptibility		
Ability to perform in loose housing gestation and farrowing pens		
Positive sociability / interaction among animals within the group		
Monogenic traits/defects		

Management Element	Yes/No	If yes, give a short explanation If no, explain why not?
Has the BC a biosecurity policy on its own premises (to avoid diseases and the spreading of diseases to other premises) and is it implemented?		
Has the BC a welfare policy on its own premises making a reference to the Five Freedoms and is the welfare policy implemented?		
Has the BC procedures to minimise stress when handling individuals?		
Has the BC a policy on how to handle its animals prior to and during transport and is it implemented?		
Has the BC 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?		
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#### 4. TECHNOLOGIES

##### A. Breeding technologies

Element	Is the BC using these breeding technologies in its breeding practices? Yes/No	If yes, give a short explanation. If no, why not? Any examples?
Genomics		
Challenge tests (health & welfare)		
Biopsy (fat sampling boars for evaluating boar taint – product quality, health & welfare)		
Ultrasound scan (product quality purpose)		
Computer Tomographic scan (bone quality and defects, muscle distribution for breeding program)		
Gene editing		
Transgenesis		
Cisgenesis		
Metabolomics, proteomics, transcriptomics		

##### B. Reproduction Technologies

Element	Is the BC using these reproduction technologies in its reproduction practices? Yes/No	If yes, give a short explanation. If no, why not? Any examples?
Artificial Insemination		
Sexing of semen		
Embryo production by superovulation stimulation followed by flushing of the embryos		
Embryo transfer (ET) (attention for welfare)		
Cloning (ENCT and SNCT)		
Karyotyping/FISH-test		



### C. Monitoring technologies

Element	Is the BC exploring new technologies? Yes/No	If yes, give a short explanation. If no, why not? Any examples?
Exploring new monitoring technologies to improve welfare and robustness		

### D. Innovation and public perception

Element	Is the BC investing in innovation? Yes/No	If yes, give a short explanation. If no, why not? Any examples?
Does the BC invest in research and development, and/or collaborate with research institutes on traits important to the breeding program?		
Does the BC take a proactive approach to adopting new techniques and technologies?		
Does the BC take action to engage with society?		

## 5. Certification

We herewith declare that the content of this template expresses the breeding and reproduction policy of the company

Place:

Date:

Name and signature:

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European Forum of Farm Animal Breeders (EFFAB)

We herewith state that this template complies with the CODE EFABAR Version 2020

Place: Brussels

Period of validity:

Ana Granados Chapatte, EFFAB, Director