





EUROPEAN UNION  
REFERENCE CENTRE FOR  
**ENDANGERED  
ANIMAL BREEDS**




# Breeding Programme Assessment

Towards guidelines & (self)assessment tool for evaluation of animal breeding programmes - ERFP WG meeting Athens


06/05/2025, Mirjam Spoelstra & Jan ten Napel



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# Scope of the EURC-EAB

- Responsible for the scientific and technical contribution to the establishment and harmonisation of methods for the preservation of endangered breeds, and the preservation of the genetic diversity existing within those breeds
- Bovine, Porcine, Ovine, Caprine, Equine species
- EURC-EAB works on endangered breeds of those animal species only



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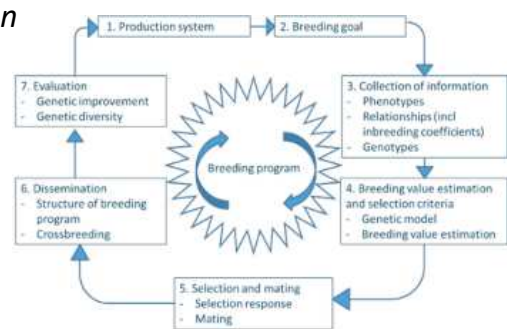
## Sub-activity 3.2.1 - Guidelines and tools for evaluation of breeding programmes for endangered breeds

*Effective BPs are a prerequisite for the conservation of endangered breeds and the genetic diversity within those breeds.*

Objectives:

- Harmonize methodology and frameworks
- make assessments “comparable” across breeds, species and countries

Target groups: breed societies & NCAs



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## Background

- Efficacy of conservation effort depends on
  - Population features & statistics
  - Technical aspects
  - Socio-economic context
  - Institutional aspects
- Target audience: Breed societies & national competent authorities
  - Improve monitoring & conservation efforts
  - Insight into BPs & targeted recommendations



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## Continuation of efforts ERFP, FAO and National Initiatives

Consulted documents, presentations and guidelines:

- ERFP report: “Socio-economic and environmental parameters and their applicability into a tool to evaluate risks and trends”
- FAO Guidelines: “In vivo conservation of animal genetic resources”
- FAO impact indicators of BPs
- National protocols for assessment of the breeding programmes (Spain)



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## Expert group on Breeding Programme Assessment

Objective:


- Validate and discuss on data & metrics to be included
- Representation of different countries & systems → validation of appropriateness & feasibility to provide data
- Harmonization of phrasing and terms → targeted towards breed societies & in line with EU regulation 2016/1012

Set-up:

- Expert group established in October 2024
- Several online meetings → consensus on areas of assessment and included metrics






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## Characteristics of a breeding programme (EU 2016/1012)

- It has an *overall aim*, which is (1) improving in a sustainable manner production and non-production traits of animals, (2) preserving the breed, (3) establishing a new breed or (4) re-creating a (nearly) extinct breed.
- It has a *more detailed breeding objective*, derived from the overall aim and defined in exchange with participating breeders, so they are commonly accepted
- It has a *design* that matches the overall aim and breeding objective
- It is *implemented in practice*
- It is *sufficiently robust*: It covers a sufficiently large number of purebred breeding animals and a sufficiently large number of breeders within the geographical territory of the breeding programme






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## Areas of assessment

- Breeding programme objectives**
  - Derived from the overall aim of the BP as specified in the request for approval
- Breeding programme design**
  - Set of protocols for systematic actions to achieve the BP objectives
- Breeding programme implementation**
  - Extent to which the design is used as intended. Includes breeder participation, use of protocols and meeting targets.
- Monitoring of breeding programme**
  - Is the BP effective and efficient in reaching its objectives?
- Breeder involvement**
  - A BP will only be effective if breeders are intrinsically motivated to participate and implement the protocols.
- Self-sustainability of breeding programme**
  - BP is able to remain relatively stable despite challenges, such as the loss of a herd, or cuts in external financial support.



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## Data collection

1. **Descriptive information on breeding programme**
  - Origin breed, main geographical locations, breeding book structure
  - Details of breeding programme, purpose, overall aim
2. **Current state and trends in breeding stock in breeding programme**
  - Size of the breeding population, design and implementation of breeding book, number of active breeders and distribution of number of breeding animals per breeder
3. **Breed preservation effort and trends**
  - Derogations, rate of inbreeding, outcross, in-situ & ex-situ conservation and recent trends
4. **Breed improvement effort and trends**
  - Features of appearance, performance and adaptation to specific environments
5. **Self-sustainability of the breeding programme**
  - A description of any factors that contribute to self-supporting the breeding programme



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SMO



## Prototype Excel Tool BPA

### Descriptive information on breeding programme

[illegible]

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## Diapositive 10

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**SM0** Ik wil nog een nieuwere screenshot toevoegen, zonder commentaar.  
Spoelstra, Mirjam; 2025-05-01T10:00:05.508

**Nt0 0** Wel goed om een opmerking box open te hebben staan, maar idd zonder de groene velden & commentaar  
Napel, Jan ten; 2025-05-02T06:22:12.519

SM0



Next steps (1) – from data to assessment



Define a default score and default accuracy



Assign a score (1-5) to all possible answers for each question



Assign accuracy to 'guessed', 'estimated', 'observed/measured'



Divide 100 points over questions contributing to an assessment area as weighting factors for score and accuracy



Calculate weighted sum for each assessment area for score and accuracy



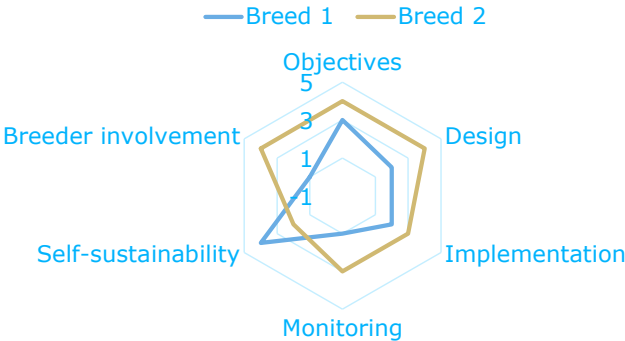
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Graphical representation of assessment

Assessment summary



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## Diapositive 11

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**SM0**    Uncertainty vervangen door accuracy -ok?  
Spoelstra, Mirjam; 2025-05-01T08:23:50.024

**Nt0 0**    Zeker voor deze presentatie geen probleem  
Napel, Jan ten; 2025-05-02T06:24:03.601





## Next steps (2) – recommendations

*Assessment makes it possible to identify critical points in the breeding programme, mark strong points and suggest solutions for weak points*

- Write recommendations by assessment area
- Write recommendations for questions with a low score
- Underline strong points for assessment areas with high score



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## Next steps (3) – testing prototype

- Focus on: usability, relevance & comprehension, validity and usefulness, engagement & trust
- Collect suggestions for improvement

## Towards a tool that people want to use

- Can we generate more endorsement from stakeholders EU-wide?
- How can we stimulate national competent authorities and breed societies to use the tool?



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## Feedback on BPA Tool

- Hand-out of prototype excel tool
- In duos/small groups: please provide written feedback on included questions and metrics (*if time permits*)
- Include recommendations / points of attention

Please return hand-out by Wednesday morning



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## Collaboration ERFP Ad-hoc action & EURC-EAB

- Is it sufficiently balanced for endangered breeds and for local breeds?
- What are the blind spots for application to local breeds?
- How can we facilitate collaboration to use our resources wisely?



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