

## Recommendation by the German Advisory Board on Animal Genetic Resources

### Animal genetic resources and animal diseases - need for action for prevention and in the case of an acute disease outbreak

Through the Convention on Biological Diversity and the Global Plan of Action for Animal Genetic Resources, at the latest, the conservation of the animal genetic resources of farm animals had become an issue of national importance. Since then, the Federal Government and the federal states (Länder) have made provision for the conservation of endangered farm animal breeds and, in particular, disburse support funds on the conservation of such breeds.

Past disease outbreaks have demonstrated that this and, last but not least, also the measures to contain and control the diseases, resulted in the irretrievable loss of particularly rare and valuable animal populations, thus also thwarting long-term efforts aiming at the conservation of endangered breeds.

The National Programme for the Conservation and Sustainable Use of Animal Genetic Resources in Germany, that was adopted by the Federal Government and Länder in 2003 already, therefore proposed the implementation of specific rules governing disease control for animal genetic resources. It was recommended to identify a nucleus each of up to 200 breeding animals for endangered breeds. Specific animal health measures are to be applied to these breeding nuclei designated in the technical programme as "irreplaceable animal genetic resources" (*Unersetzbare tiergenetische Ressourcen (UTR)*). This concerns both preventive measures such as the decentralised distribution of the UTR populations and measures in the event of animal disease outbreaks, e.g. exemptions from a stamping-out policy. The UTR should be listed in a constantly updated list that is available to the veterinary authorities.

In order to implement different Community guidelines laid down in relevant regulations on foot-and-mouth disease, swine fever and avian influenza (see Annex 1: *excerpts from relevant legislation governing the handling of animals from UTR in the event of an outbreak of specific animal diseases*), animal disease legislation, in certain circumstances, allows derogations for rare breeds from the culling imperative. These holdings must be recognised in advance as special establishments. They must thus meet requirements for their biosecurity that are so demanding that holdings with rare breeds are hardly able to fulfil them if they want to be open to visitors and also exchange animals.

While the loss of animals of rare breeds is almost inevitable if their holding is directly affected by a disease, it is at the discretion of the veterinary authority to refrain from preventive culling on holdings keeping endangered breeds in close proximity to a disease outbreak. Compared with culling on directly affected holdings, preventive culling concerns significantly more farms. The option of sparing holdings with endangered breeds would therefore generally play an important role in preserving these breeds. This does, however, presuppose that the veterinary authorities are informed about the existence and location of such farms in good time and that they are prepared to take such cases into account.

**On the basis of discussions with representatives from breeding organisations and experts in veterinary matters on the prerequisites for and state of play in specific precautionary measures for breeds threatened with extinction, the Advisory Board on Animal Genetic Resources notes the following:**

1. In spite of repeated critical situations in the event of swine fever and avian influenza disease outbreaks, no systematic measures have so far been implemented that could, preventatively or in acute cases, protect endangered indigenous breeds and endangered breeds kept in Germany from the consequences of a disease outbreak. There is a lack of both targeted preventive measures taken by animal keepers and breeding organisations and specific packages of measures in disaster contingency plans and exercises conducted by veterinary authorities.
2. From an animal health point of view, preventive protection through specific biosecurity measures is imperative, comparable to those of semen collection centres or breeding nucleuses of commercial breeding operations. This approach can, for several reasons, only be applied with restrictions to endangered breeds:
  - The preservation of these breeds is not always solely based on commercial aspects. Especially in the case of poultry and rabbits, the flocks or herds are mainly kept by hobby farmers and, to a limited extent, on small-scale farms.
  - The husbandry of these populations in zoological gardens, domestic animal parks, open-air museums, farm schools or ark farms, that can frequently be encountered, implicitly requires contact with outside visitors.
  - The exchange of breeding animals, notably of sires, is a necessary conservation measure recommended for breeding activities.

- The participation of endangered farm animal breeds in trade fairs and exhibitions etc. is seen as an important element in public relations work.
  - Breeders maintain relatively intensive contacts among each other in breed-specific interest groups.
3. This opinion sets out options for a special treatment of populations of breeds threatened with extinction within close proximity to a disease outbreak. While there are legal possibilities, theoretically speaking, for exemptions from the culling order on directly affected holdings they hardly seem applicable due to the associated stringent requirements for the biosecurity to be met by practical operations keeping animals of endangered breeds.
  4. The recommendation of the 2003 National Programme to only identify breeding nucleuses of up to 200 animals each within the endangered breeds to which specific animal health measures could be applied should not be followed. It does not appear to be viable to define such sub-populations and undertake breeding activities on them on a permanent basis so that they could sufficiently represent the genetic structure of the breed. Instead all animals from endangered breeds entered in the herdbook should, in principle, be regarded as ***Irreplaceable Animal Genetic Resources (UTR)***. Adapted solutions are, on a case-by-case basis, proposed for indigenous poultry breeds to which other threat categories are applied and where no consistent identification of individual animals is conducted.
  5. The particularly valuable animal genetic resources, to which special treatment should, if possible, be accorded when controlling an animal disease, also include the base or nucleus breeding in breeding operations and animal populations in semen collection centres. Even though these herds are not addressed in this opinion, some of the recommendations set out below can be applied to them by analogy.

**The Advisory Board on Animal Genetic Resources recommends the following measures to protect breeds threatened with extinction from the consequences of animal disease outbreaks:**

**1. A central register of *Irreplaceable Animal Genetic Resources (UTR)* in Germany will be drawn up as soon as possible and updated on a permanent basis.**

1.1 Populations that can be assigned to UTR are identified and registered, including their geographical location.

- The animal keeper notifies his breeding organisation of his willingness to be included in the central UTR register as UTR herd. In the process, the keeper declares in writing that his personal data may be recorded and passed on to the competent veterinary authorities so that they can be used for animal disease control, including exercises.
- The following breeding conditions need to be met for listing as UTR herd:
  - In the case of large animals, the animals of the UTR herd are entered as breeding animals in the herdbook for an endangered indigenous breed. Animals of other breeds or species that are not assigned to the UTR herd can also be kept in the population.
  - In the case of poultry, the breeding stock is registered with the BDRG (Bund Deutscher Rassegeflügelzüchter - *Federation of German Poultry Breeders*) or GEH (Gesellschaft zur Erhaltung alter und gefährdeter Haustierrassen e.V. - *Society for the Conservation of Old and Endangered Livestock Breeds*). The latter confirm that the animals of the UTR herd number among breeding animals of an indigenous endangered breed according to the Advisory Board's list and are entered in a centralised herdbook.
- The breeding society or BDRG or GEH verify the conditions for the listing on the basis of their herdbook and afterwards notify the following data per herd to be included to the body keeping the register:
  - Breed, number of animals in the UTR herd, name of holding, address, including e-mail address, telephone number and geographic coordinates of the UTR herd and
  - name and contact data of the notifying breeding organisation.

1.2. The central UTR herd register is drawn up and kept by IBV-BLE.

- This measure should, as soon as possible, be linked up with the official monitoring by authorities envisaged under zootechnical legislation. However, to this end the current legal basis has to be examined and brought into line, as appropriate.

- The register should be updated at fixed intervals.

## **2. Precautionary measures taken by breeding organisations, breeders and keepers reduce the risk or the implications of the loss of important herds in the event of an animal disease outbreak.**

2.1. A biosecurity concept that is as stringent as possible should be applied to UTR herds. This concept should, however, be adapted to the type of farm, e.g. an ark farm frequented by the public. It is, in particular, recommended to implement additional measures without delay, e.g. moving animals indoors or an access control, in case of an emergency.

2.2. If animals of a breed are heavily concentrated in regional terms, an attempt should be made to decentralise these herds. To enable this, the support of breeding societies, GEH and other breeding associations is needed. To do so, it is, at least, paramount that important sire lines are not exclusively kept on one holding or within a narrow radius.

- A study of the European Regional Focal Point (STURARO et.al. 2013<sup>1</sup>) suggests the 75% spread of herd-book animals of a breed within a 50 km radius as a criterion for a strong regional concentration of a breed that might therefore increase the danger.
- Breeds with a corresponding need for action are identified by breeding organisations. In this regard, the IBV-BLE can provide support as soon as geo-information becomes available as a result of monitoring.
- In the light of the above. the Advisory Board is to propose concrete measures on a case-by-case basis.
- The Advisory Board may also, on its own initiative, state its views on when measures for a heavily regionally concentrated breed are necessary depending on criteria such as degree of hazard, farm size, relationship within and between farms, method of use of sires.
- Support schemes by the Federal Government and the Länder are crucial in order to implement decentralisation measures.

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<sup>1</sup> Sturaro, E., D. Kompan, L. Alderson, C. Ligda: Assessment of breeds risk status by investigating their geographic distribution, Agricultural science, volume V, issue 13, 2013, 147-150  
[http://www.au-plovdiv.bg/cntnr/AI/agricultural\\_sciences\\_13.pdf](http://www.au-plovdiv.bg/cntnr/AI/agricultural_sciences_13.pdf), abgerufen am .....

2.3 The existence of a gene bank serves as the most important and indispensable accompanying measure to protect against losses caused by disease outbreaks.

- The gene bank should include semen, embryos and ova to rebuild the populations concerned. To this end, either additional material to the core reserve exists or this material can be taken from the core reserve through rules governing availability in case of an emergency.
- Especially if a breed is regionally concentrated, special attention must be paid to the timely establishment of a sufficiently large cryo-conserve.
- The stored semen and embryos should, if possible, reflect the current status of the respective population and should therefore be continuously stored in the gene bank.
- It is mandatory that the Federal Government and the Länder store genetic material of all endangered indigenous breeds in the national gene bank.

**3. The competent veterinary authorities must be informed by the UTR list of populations about locally and regionally existing UTR populations already prior to the possible occurrence and the then necessary control of animal diseases.**

3.1. The central UTR herd register is constantly available online to the veterinary authorities especially.

- The veterinary authorities have permanent access to the current population register through suitable measures.
- The representatives of the competent veterinary authority should visit the UTR holdings, if possible, and, on the ground, assess the conditions whether the respective holding is able to meet the biosecurity requirements that are suitable in an emergency caused by epizootics. During these visits that should take place at a time that is free from current disease outbreaks, the veterinary authority can be assisted by specialised and qualified establishments such as the animal health services and also the breeding organisations. The requirements for biosecurity should be based on the relevant regulations (e.g. Pig Husbandry Hygiene Ordinance) or concerted recommendations (for cattle).
- The visits should enable the veterinary authorities to get to know the holdings and also provide farm operators with guidance on improving biosecurity. The course of a farm visit offers no guarantee for a special treatment of the holding in an emergency.

- In addition to that, the veterinary authorities can use this UTR register for the following purposes:
  - as evidence base and basis for decision-making and control in the event of disease outbreaks
  - to conduct animal disease crisis drills.

3.2. If possible, UTR populations are given special consideration if measures are taken to control animal diseases.

- It is only possible to deviate from the culling imperative in the event of a disease outbreak directly in a UTR population in *special establishments* recognised under veterinary law (see point 3.4).
- If the culling of herds in close proximity to the disease outbreak is ordered, exemptions for UTR herds may be considered, for example
  - possibility of exemption from immediate culling in UTR populations (perhaps testing for freedom from disease etc.)
  - possibility of obtaining semen, embryos or ova prior to culling (seen Annex: *biotechnological measures on the ground in the event of a disease outbreak on an uninfected holding*).

It should also be taken into consideration which requirements can be met by the UTR population.

3.3 UTR holdings and their breeding organisations should also be taken into account in official information systems and contingency plans and involved, if possible.

3.4 UTR holdings with particular valuable populations that may have to meet particularly strict requirements for biosecurity through restrictions on visitor flows and structural conditions, may inform the competent veterinary authorities that the conditions are met in their establishments and provision has been made on the basis of which an exemption from

the otherwise mandatory order to cull all susceptible animals in the directly affected herd can be granted<sup>2</sup>.

**4. Further consultations between the competent bodies and breeding organisations involved and the support of breeders are required to effectively implement the measures recommended in this opinion**

4.1. The BMEL is asked to commission the BLE with the establishment and operation of the UTR register.

4.2. The proposed measures must be implemented in the breeding programmes and on the holdings that are interested in obtaining an UTR status with the support of the authorities and bodies involved. To this end, the holdings will receive advice on improving their "biosecurity" by relevant advisory agencies (chambers of agriculture, breeding organisations, advisers, veterinarians, the Society for the Conservation of Old and Endangered Livestock Breeds (GEH)).

4.3. State funding is required to finance the necessary measures, notably the necessary investments on the holdings to ensure a higher biosecurity level.

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<sup>2</sup> FMD Regulation Section 8 subsection (2), Swine Fever Ordinance Section 8 subsection (2), Avian Influenza Ordinance Section 20 subsection (4)