

# **Supports for Endangered Livestock Breeds (introduction to ERFPP project)**

**Metka Žan Lotrič, Danijela Bojkovski, Drago Kompan, Andrej Šalehar**

*University of Ljubljana, Biotechnical Faculty, Department of Animal Science, Address – 1230-Domžale, Groblje 3, Slovenia*

---

## **Abstract**

Conservation, utilization and characterization of farm animal genetic resources are under the Global Strategy for the Management of Farm Animal Genetic Resources. However, the conservation of autochthonous breeds (indigenous genotype) continues to be a particularly important national task of individual countries. One of the main conditions of successful conservation of farm animal genetic resources has been linked to the delivery of suitable financial infrastructure, especially for endangered breeds. The key objective of our research was to investigate how each particular country provides financial support for the conservation of farm animal genetic resources, especially endangered breeds (breed at risk). Besides, the criteria and definitions used for defining different type of breeds (autochthonous breeds, locally adapted breeds, recently introduced breeds, allohtonic breeds) were also included in our research. The research conducted under the ERFPP project titled “Proper Way of Supports for Endangered Livestock Breeds”. In the frame of this research we prepared the questionnaire named “Survey Questionnaire for the Subbreed project” which will give us all necessary information to analyses the support policy and to define the type of breeds in individual countries.

**Keywords:** breeds at risk, criteria and classification of different type of breeds, quantification of subsidies

## **1. Introduction**

Biodiversity of farm animals contributes in many ways to human survival and wellbeing, while its loss reduces the options for attaining sustainable agriculture and universal food security.

The size, structure and distribution of livestock populations are fundamental for the determination of breed population risk status on both national and global scale.

So far farm animal breeds have been classified into different groups according to the origin. These are different in each country, therefore we wish to investigate the criteria or definitions used to define individual breed types (autochthonous breeds, locally adapted breeds, recently introduced breeds, allohtonic breeds) and breeds at risk.

Each country has its own system for assessing the state of endangered (risk status) farm animal breeds. Furthermore, each country has a specific support payment system for farm animal genetic resources. Besides, very little is known how

supported endangered (at risk) farm animal genetic resources are.

In order to get a baseline for calculating the amount of support for endangered livestock breeds we prepared the project named “Proper Way of Supports for Endangered Livestock Breeds” in the frame of ERFPP. The objective of the project is to review the action plans (breeding and conservation programme, subsidy policies etc) for farm animal species in the countries of member partners.

For the farm animal breeds reared in Slovenia, the following basic definitions are in use:

- **Locally Adapted Breeds (Autochthonous and Traditional breeds)**

Farm animals of these breeds are reared in defined geographic area and are adapted to the climatic and feeding conditions as well as to the structure

and configuration of the land. They are divided into autochthonous and the traditional breeds.

- **Autochthonous (indigenous, original, primary, native) Breeds**

Farm animals of these breeds are, on the basis of historic sources, proven to originate from the Republic of Slovenia. The territory of the Republic of Slovenia was the prime geographic region for the development of these breeds. There exists the Slovene breeding documentation, where pedigree recording is found for at least five generations. Autochthonous breeds are under breeding and selection control.

- **Traditional Breeds**

The animals of these breeds do not originate from the Republic of Slovenia, or the origin has not been proven by the historic sources. The traditional breeds have been continuously bred on the territory of the Republic of Slovenia for more than fifty years (equines, cattle), or for thirty years (other farm animal species). In addition, the existing Slovene breeding documentation proves that the pedigree of a separate traditional breed had been recorded for at least five generations. They are under breeding and selection control. The term Slovene (Slovenian), or some other Slovene geographical term is included in the name of the traditional breed.

- **Foreign breeds (allochthonous, exotic)**

To foreign breeds belong those farm animals that do not originate from the region of the Republic of Slovenia, or the animals which have not been continuously bred on the territory of Slovenia for more than fifty years (equines, cattle), or for thirty years (other farm animal species).

To collect information linked with the situation mentioned above we prepared a project (questionnaire) which is focused on how each country characterizes the breed risk status and how they fund breeding of their especially endangered breeds.

The objective of this paper is to present the basic point of the project (questionnaire).

## 2. Materials and methods

In order to obtain information how each individual country defines different type of breeds

(autochthonous breeds, locally adapted breeds, recently introduced breeds, allochthonous breeds) and how they assess the risk status of each breed we prepared a questionnaire named “**Survey Questionnaire for the Subbreed project**”. The questionnaire included also questions on subsidy policies with an emphasis on breeding of endangered breeds. This way the information linked to the characterization of status of breed at risk and quantification of subsidies for their breeding will be obtained.

Different parts of the questionnaire are as follows:

- **Legal Arrangement of Animal Genetic Resources**

The legal arrangement of animal genetic resources represents the basis for successful conservation of animal genetic resources (AnGR). Many regulations, laws and other documents from this field are accepted on the European and global level. Individual countries adopted many of them, besides they have their own national programme for sustainable conservation of farm AnGR.

- **Country Programme (Action Plan) for the Conservation of AnGR**

Some countries have their own national programme for the conservation of farm AnGR which helps countries to decide on how to achieve more effective utilization of their AnGR, taking national circumstances and priorities, including the availability of human and financial resources, fully into account. **What is the main guidance of these programme?**

- **The Level of the Endangerment: Criteria and Assessment**

According to the FAO definition the Endangered Breeds List is an inventory of all breeds with data to suggest that the total number of breeding females is greater than 100 and less than or equal to 1 000 or the total number of breeding males is less than or equal to 20 and greater than five; or if the overall population size is greater than 80 and less than 100 and increasing, and the percentage of females being bred to males of the same breed is above 80 percent; or if the overall population size is greater than 1 000 and less than or equal to 1 200 and decreasing and the percentage of females being bred to males of the same breed is below 80 percent and it is not assigned to other categories.

Definition of indicators of endangerment leading to identification of breeds at risk.

In the frame of our research we wanted to find what are the national criteria for the evaluation of the level of endangered breeds; which organization or body is responsible for the evaluation of the level of endangered for AnGR; which organization or body is monitoring the state of the AnGR at the national or regional level.

### **Status, Definition of Breeds and Subsidies for the Animal Genetic Resources**

**Status and Definition of Breeds:** This part of the questionnaire is focused on the criteria and definitions in a particular country which are used for defining different type of breeds (autochthonous breeds, locally adapted breeds, recently introduced breeds, allohtonic breeds). In addition, the amount of subsidies for specific species, divided between male and female animals is also a topic of our research, as well as the subsidies or support for the endangered breeds.

**Subsidies for the AnGR:** Success in sustainable conservation of farm AnGR depends greatly on the financial support.

Building appropriate financial infrastructure is required for the sustainable conservation of farm animals, especially for breeds at risk.

Policies and legal frameworks influencing the livestock sector are not always favourable to the sustainable utilization of animal genetic resources.

### **Methods of Calculation for the Financial Subsidies or Support and Payment**

Supports for endangered breeds are intended to preserve the breeds, which are often not competitive with other (more productive) breeds. Support is therefore meant to prevent the loss of income resulting from rearing indigenous breeds.

This part focuses on how the payment of subsidies or support is carried out.

It is necessary to develop a methodology to calculate the amount of justifiable subsidies for breeders, especially of endangered breeds.

### **Proposals for Improvement of the Current Situation**

The first element of planning the improvements is an assessment of the current situation.

Some suggestions for improvement of the current situation both within particular countries and on the common European level:

- Proposals for improvement in the existing legislation;
- Adoption of exact rules concerning AnGR;
- International cooperation in the conservation of farm animal genetic resources;
- Establishment and providing equipment for the international molecular genetic and other laboratories;
- Investment in the equipment necessary for the ex situ conservation;
- Investment in the equipment necessary for the in situ conservation;
- Completion of the database EFABIS (reduce the number of information for the breeds – include only those data that are reliable and directly measurable ...).

### **3. Results and discussion**

Because we prepared a questionnaire which will give us a more clear view on how each country has organized the criteria for different type of breeds and breeds at risk with quantification of subsidies recently, we can not present a joint analysis yet. Therefore only the main Slovenian results and information from this field are presented in this paper.

#### **Supports for breeding the Slovenian autochthonous breeds:**

In Slovenia we are setting up the level of support for the Slovenian autochthonous breeds, according to the COMMISSION REGULATION (EC) No 1860/2004 (EC Treaty to de minimis aid in the agriculture and fisheries sectors). Payments for keeping autochthonous animals in Slovenia are connected with environmental programme, however sometimes breeders of the autochthonous breeds can not fulfil all the conditions in the programme. Therefore farmers do not get any financial support except from the above mentioned “de minimis aid”.

#### **Assessment of risk degree for a breed:**

In Slovenia the assessment of risk degree for a breed is made according to the number of pure breeding females included in the herd book. The degree of risk is divided into the following classes: critical,

endangered, vulnerable, at risk, not endangered. The degree of risk depends on the number of a pure breeding females included in the herd book and is different according to the species (Table 1).

Table 1: Criteria for the assessment of risk degree for a breed (number of pure-breed breeding females in the herd book) in Slovenia

Degree of risk	Cattle	Equines	Goats and Sheep	Pigs	Poultry
Critical	<150	<300	<300	<100	<100
Endangered	151-350	301-500	301-500	101-200	101-250
Vulnerable	351-650	501-900	501-900	201-300	251-500
At risk	651-1500	901-3000	901-3000	301-1000	501-2500
Not endangered	over 1501	over 3001	over 3001	over 1001	over 2501

Table 2: The level of endangerment of Slovenian autochthonous and traditional breeds in 2009

Degree of risk	Cattle	Equines	Goats	Sheep	Pigs	Poultry
Critical		3			2	
Endangered		1	2			
Vulnerable		1	1	2		1
At risk	1			1		3
Not endangered	2			2	2	1

Without dogs and bees

In 2009 we kept 11 farm autochthonous breeds and 14 farm traditional breeds in Slovenia. Three equine breeds and two pig breeds were evaluated as critical. One equine breed, two goats breeds were evaluated as endangered, one equine breed, one goat breed, two sheep breeds and one poultry breed were evaluated as vulnerable and one equine breed, one sheep breed and three poultry breeds were evaluated as at risk. Seven breeds were given the assessment not endangered (Table 2). As shown in Table 2 the level of endangerment includes only the number of a pure breeding females included in the herd book. There are many other aspects contributing to the evaluation of endangerment such as how the herds are scattered around the country, the age distribution of breeders, their economical status, social aspects, and other parameters. For example, the overall awareness about the breed and its local role is important.

Number of subsidies for farm animal species reared in Slovenia (endangered breed) in 2009 were as follows: one subsidy for cattle breed, two subsidies for sheep breed, two subsidies for goat breed, three subsidies for equine breed, two subsidies for pig breed and five subsidies for poultry breed.

#### 4. Conclusions

Our research will be completed and presented in more detail after the questionnaires are returned from the countries, included in the project, and after a detailed data analysis. Until then we may give the general conclusion only:

- Each country has its own system for assessing the state of endangerment (risk status) of farm animal breeds. More analyses are required to form the basis for further work.

- It is necessary to develop a standardized system for assessing the state of endangered (risk status) farm animal breeds.

- In order to maintain the sustainable conservation of farm AnGR in the future, especially endangered breeds it is necessary to develop a special financial system which will ensure appropriate amount of subsidies for breeding these breeds.

- A final point to be emphasized is a need to develop a financial instrument for sustainable conservation of farm AnGR and to estimate their status.