



## Project concept

# Conservation of Balusha sheep

**Sheep are the second most important livestock species in Kosovo. Among the four indigenous Kosovar sheep breeds, the Balusha sheep stands out not only because of its appearance; it has also been scientifically proven that the Balusha sheep has unique genetic characteristics. Although Balusha sheep are important for agrobiodiversity, the breed is threatened with extinction: there are only three Balusha herds left, with a total of around 300 animals. Immediate conservation measures are urgently needed. These are to be initiated and implemented in the planned project.**

## Balusha sheep – unique and precious

In the western part of Kosovo, in the Dukagjini Plain, there lives a population of a very special strain of the Pramenka sheep breed, the Balusha. Balushas are reared in traditional pasture farming along the border between Kosovo and Montenegro. Balusha sheep are an autochthonous Kosovar sheep breed with a long history. The sheep have an extraordinary look with their white fleece and dark-



Balusha ewe with lamb

coloured head and shoulders. The wool often forms "dreadlocks" due to the shearing traditions of the local shepherds. The Albanian breed name "Balusha" is derived from the dark head of the animals ("bale-spot"). The sheep is well adapted to extensive farming conditions and can be easily milked. Balushas are medium-sized triple-purpose sheep (milk, meat, wool).<sup>1</sup> Currently, their wool fleece has little or no commercial value and most of the wool is discarded.

A scientific study published in 2022 showed that the Balusha sheep has unique genetic traits and emphasised the importance of conserving this sheep breed. The study was initiated and financed by SAVE Foundation and carried out in close cooperation with the University of Pristina, Kosovo, the University of Giessen, Germany, and the University of Ljubljana, Slovenia.<sup>2</sup>



Herd of sheared Balusha sheep

An international working group was created in 2023 as sheep numbers have fallen to very low levels with possibly less than 300 animals now in some sort of controlled flock management systems. It is of utmost importance to initiate actions to halt the decline of the breed and to increase animal numbers with the aim to gain a stable population and conserve the Balusha sheep breed.

## Project outline

The project aims at very urgent measures that should be implemented as soon as possible to increase Balusha population size and to conserve genetic diversity. Hence, top priority is the development of a conservation programme and the formation of additional nucleus breeding herds.

### Work Package 1: Conservation programme for Balusha sheep

Data on individual Balusha sheep is collected for the development of a conservation programme. The data is recorded in written form and forwarded to the SAVE Foundation. The SAVE Foundation implements an online breeding management software and enters the data to create a database. This database forms the basis for a Balusha herd book. The breeding management software is used to develop a breeding programme with recommendations for matings. The following sources are used for data collection:

- Scientific study<sup>2</sup>: genomic data on individual animals  
→ request data on individual Balusha sheep from the University of Gießen which did the genomic analyses
- Governmental animal registry system  
→ inform the Kosovar Ministry of Agriculture, Forestry and Rural Development about the development of a conservation programme and ask to provide data from the animal registry system
- information requested from breeders (pedigree data / relationship between animals)  
→ a visit will be paid to Balusha breeders, animals will be identified and data regarding these animals will be recorded

### Work Package 2: Formation of new nucleus breeding herds

The elaborated breeding programme enables the selection of animals for new breeding groups. Young breeders are identified, contacted and suitable breeders are included in the conservation programme. The SAVE Foundation purchases the selected breeding animals, which are handed over to the new owners subject to conditions regarding animal welfare and breeding. Participation in the conservation programme in accordance with the herd book is mandatory for the new breeders, and corresponding contracts are concluded. A workshop will be planned and held to inform both new and existing breeders about the conservation programme and the recommended matings. Two new breeding groups are to be set up in the course of the project.

## Work Package 3 and 4: Study trip and public relations

The Balusha sheep breed is to be conserved in the long term. Recognition and support from official bodies of the Kosovan government is of great importance for this. A study trip and workshop is planned to emphasise the importance of conservation and to highlight options for valorisation. The idea is to invite representatives of the responsible ministry of the Kosovan government and potential new breeders to familiarise them with a conservation programme. During the study trip, an information centre of an EU model project (Alpine Stone Sheep) and an agricultural research centre will be visited and an exchange with various stakeholders will take place. A provisional programme has been drawn up:

### Day 1

- Visit to the Bavarian State Institute for Agriculture in Grub (near Munich) with a guided tour of the state institute, visit to the state's own flock of sheep, the research centres, the Bavarian Sheep Health Service and the Bavarian Herd Book Society.  
<https://www.lfl.bayern.de/verschiedenes/ueberuns/122347/index.php>  
Ride to Berchtesgaden and overnight stay in a hotel

### Day 2

- Visit to the Alpine Stone Sheep Centre in the Berchtesgadener Forest National Park, visit to the Aschauer sheep farm (sheep grazing in the national park with a large farm shop and direct marketing of meat, sausage and wool products).  
<https://arca-net.info/informationszentrum-alpines-steinschaf-information-centre-alpine-stonesheep/>
- Presentation of the Alpine Stone Sheep Conservation Project as an example of how an acutely endangered sheep breed with only 120 herd-breeding animals can develop into almost 1000 herd-breeding animals in 15 years through targeted conservation breeding, public relations work and marketing opportunities.  
[https://www.geneticresources.eu/compendium/pdfs/DE\\_AnGR\\_AlpineRockSheep.pdf](https://www.geneticresources.eu/compendium/pdfs/DE_AnGR_AlpineRockSheep.pdf)
- Visit to a dairy sheep farm, if possible with direct marketing of milk and cheese.

Furthermore, in order to publicise the conservation work and the special nature of the Balusha sheep, results from the project will be published in the form of articles and social media contributions.

## Work packages

### **Conservation Measures**

#### ***WP1: Conservation programme***

- Compilation of data to individual animals
- Implementation of an online breeding management software and translation of specialized terms (English - Albanian)
- Enter existing data on the animals into the software to create a database as basis for a herd book
- Development of a conservation programme and determination of matings

→ *conservation programme developed*

#### ***WP2: Formation of new breeding groups***

- Selection of breeding animals based on the conservation programme
- Attracting new breeders, purchase of selected animals, conclusion of contracts with new breeders and handing over the animals
- Workshop: train breeders on the conservation programme and recommended matings

→ *conservation programme realized, new nucleus groups formed*

### **Study Trip and Public Relations**

#### ***WP3: Study trip***

- Coordination of dates with all stakeholders
- Finalization of the study trip programme
- Planning and organisation of the study trip
- Realisation of the study trip and résumé

→ *Study trip realized*

#### ***WP4: Public relations***

- Writing a report on the study trip and disseminating of the report via various media
- Publication of articles and posts

→ *Report, articles and posts created and shared with the public through various media*

### **Project Management**

#### ***WP5: Project management***

- Coordination and monitoring of project activities
- Creation of project reports

Time Schedule	1 <sup>st</sup> year				2 <sup>nd</sup> year			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Work packages								
WP1: Development of a conservation programme								
WP2: Formation of new breeding groups								
<b>Milestone:</b> conservation programme developed, new nucleus groups formed						◆		
WP3: Study trip								
WP4: Public Relations								
<b>Milestone:</b> Study trip realized, article and posts published								◆
<b>WP5: Project management</b>								
<b>Milestone: project finished</b>								◆

**Project duration: 16 months**

**Financial support is needed to realise the project and we are very grateful for your donation. If you have any questions, please feel free to contact us.**

### Bank account details



Account holder: Verein zur Förderung der SAVE Foundation Schweiz, Neugasse 30, 9000 St. Gallen, Switzerland

Raiffeisenbank St. Gallen, 9001 St. Gallen, Schweiz, SWIFT: RAIFCH22XXX

Account in Swiss Francs (CHF): IBAN CH04 8080 8001 9930 3730 4

Account in Euro (EUR): IBAN CH27 8080 8008 5839 3255 6

**Please enter "Balusha" as the purpose of payment.**

## Organisations involved in the project

### SAVE Foundation

The SAVE Foundation is lead organization for this project. The SAVE Foundation is a pan-European umbrella organization committed to the conservation of agrobiodiversity. It is responsible for project management, implementation and administration of the breeding management software as well as data entry. The SAVE Foundation participates in the purchase of the animals and takes care of contractual matters.

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## University of Pristina

The University of Pristina will compile data on individual Balusha animals, develop and implement a conservation programme, select animals for new nucleus breeding groups, locally collaborate with breeders, translate terms and texts, and will take responsibility for local exchange with the ministry.

[Home - Universiteti i Prishtinës \(uni-pr.edu\)](http://uni-pr.edu)

## European Wool Association

The European Wool Association (EWA) is a non-profit, non-governmental organization aiming to give back value to wool produced in Europe. The EWA will be involved in the development of the conservation programme, the selection of breeding animals and the organization and implementation of the study trip.

[www.europeanwoolassociation.org](http://www.europeanwoolassociation.org)



## Literature

- 1 Bytyqi, H., Baumung, R.; Mehmeti, H. and Fuerst-Waltl, B. (2014) Phenotypic characterization and description of production systems of autochthonous sheep breeds in Kosovo. *Animal Genetic Resources*, 2014, 54, 163–170. doi:10.1017/S2078633614000034
- 2 Adeniyi OO, Simon R, Bytyqi H, Kugler W, Mehmeti H, Berisha K, Simčić M, Magdy M, Lühken G. (2022) Capturing Genetic Diversity and Selection Signatures of the Endangered Kosovar Balusha Sheep Breed. *Genes* 13(5):866. doi: 10.3390/genes13050866