

# SUB-REGIONAL-TRANSBOUNDARY OPPORTUNITIES FOR GENE BANKING (Lithuania perspective)



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# Regulation of Animal genetic resources

The farm animal breeding, sperm and embryo collection, evaluation of foreign, commercial and native farm animals breeds are regulated and controlled by the Lithuanian Law for animal breeding 08-02-1994 - Nr.I-384. The priorities of Lithuanian breeding system are pointed in the improvement of commercial populations.

- National Programme for the conservation of the native farm animal genetic resources adopted by the Ministry of Agriculture of Lithuania in 1996 and renewal in 2008.

*The main purpose of this programme is collection, investigation and conservation of Lithuanian farm animal genetic resources.*

## **Priorities:**

**Conservation in – situ:** *National selection nucleus, Dissemination of genetic material from selection nucleus, AnGR coordination and monitoring (center)*

## **Conservation ex-situ**

*Lithuanian native breeds are divided in to:*

- *indigenous (autochthonous) animal and poultry breeds,*
- *breeds which were developed in 20th century.*



In 2008 The Ministry of Agriculture adopted an order about the foundation of the Coordinating centre (Centre) for the National Programme of the conservation farm Animal Genetic Resources

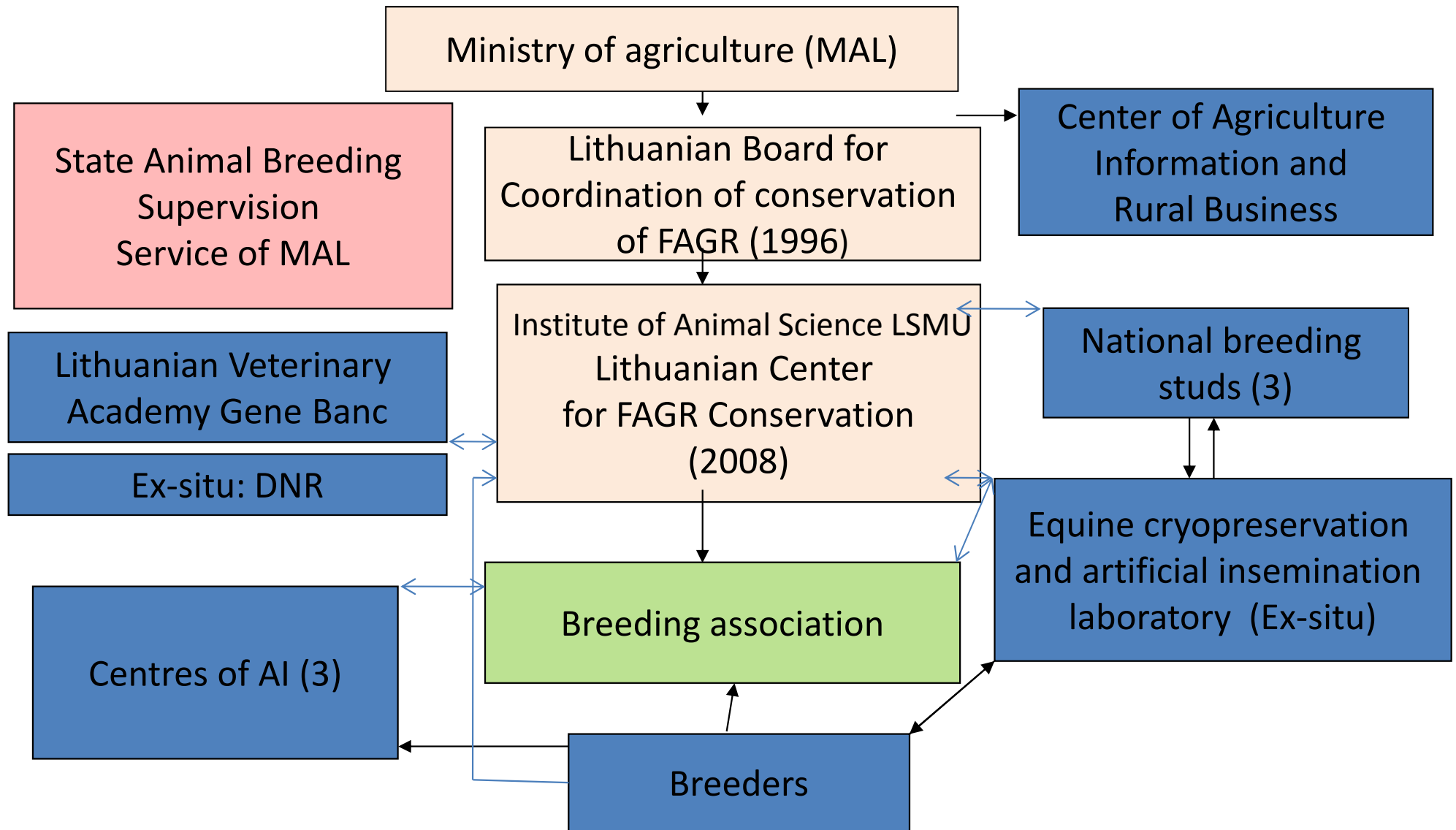
The Lithuanian Center for Farm Animal Genetic Resources Conservation was found at the Institute of Animal Science at the of 2009.

The gene bank was established according experience and initiative of researchers from the Institute of Animal Science working in the field of collection, research and conservation (in-situ and ex-situ).

The main activities of the Centre:

coordination of animal genetic resources, identification, monitoring, preparation of conservation programs, evaluation of animals, conservation in – situ and ex-situ (conservation of animal genetic material in the form of semen stored cryogenically and genetic information as DNA, stored in frozen samples of blood or hair and as DNA segments).

# General management of native animal breeds in Lithuania







## The main activities of the centre:

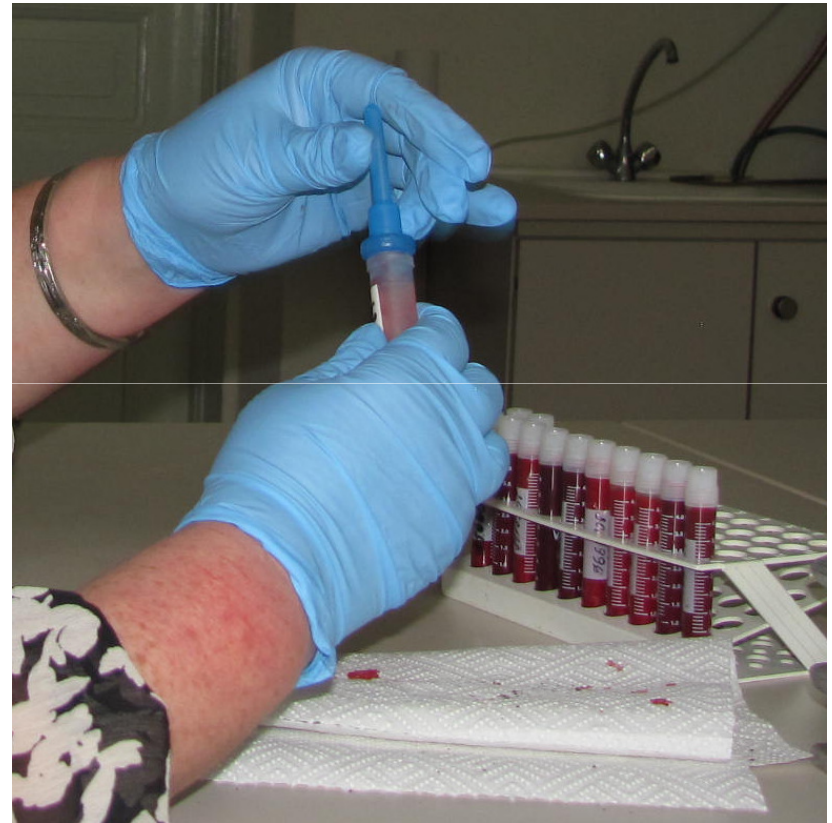
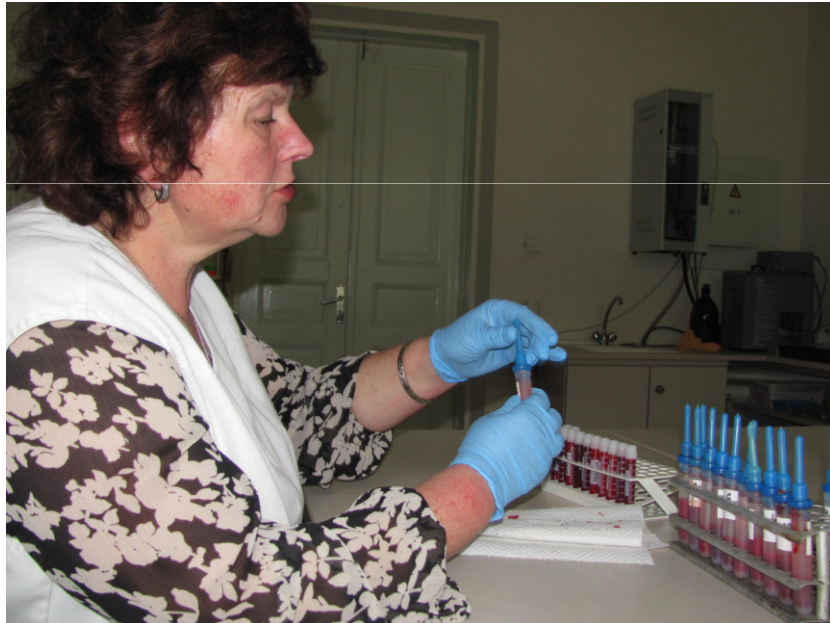
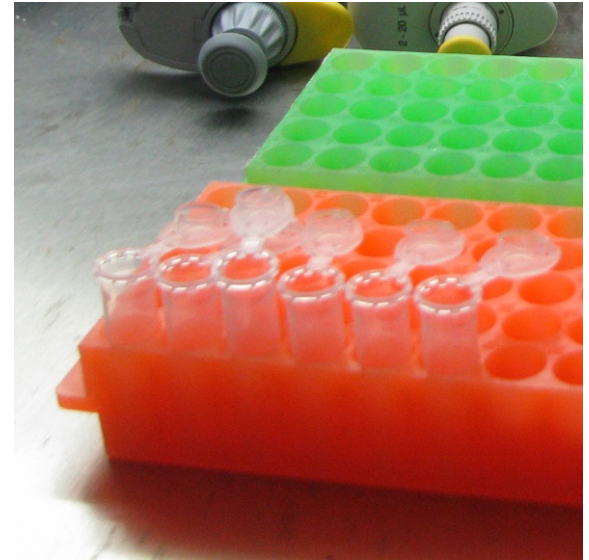
- **Coordination of animal genetic resources;**
- **Identification;**
- **Monitoring;**
- **Preparation of conservation programs;**
- **Evaluation of animals;**
- **Conservation in-situ and ex-situ;**





# Conservation ex-situ

Type of collected material :  
blood and DNA



# Stored of samples of genetic material

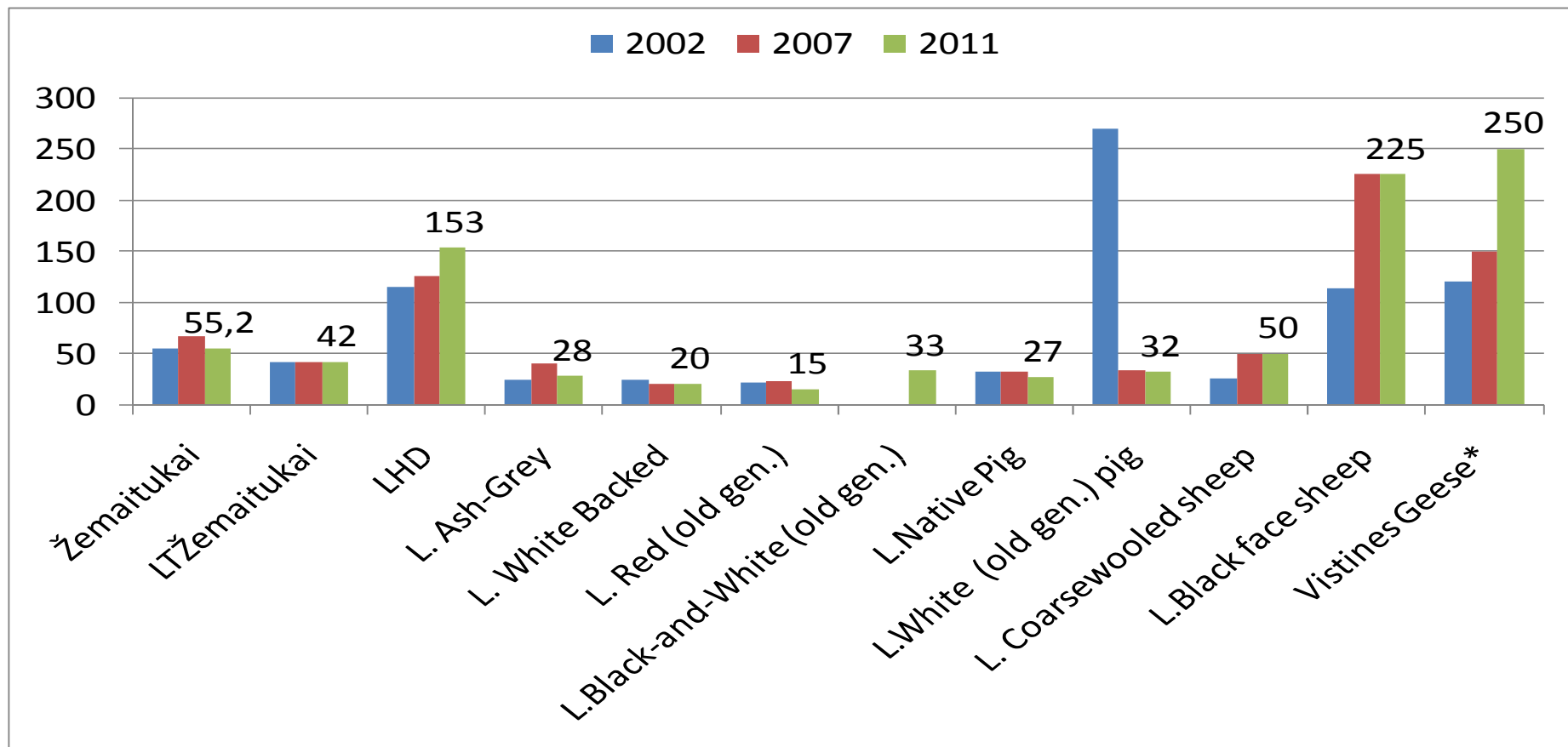






# The effective population size and their changes

$$N_e = 4NmNf / (Nm + Nf) \text{ (Maijala, K. 1999)}$$



**Table 1.** On purpose to implement National Programme for the conservation of the native farm animal genetic resources was collected Gene bank.

Species	Breed	Semen		Embryo	DNA	Hair	Blood
		Males	Doses				
Cattle	Lithuanian Ash-Grey	8	1250	-	+	+	+
	Lithuanian White-Backed cattle	4	540	-	+	+	+
	Lithuanian Black-and-White old genotype	7	4390	-	+	+	+
	Lithuanian Red old genotype	5	2000	in 2012	+	+	+
Sheep	Lithuanian coarsewooled			-	+	+	+
	Lithuanian black face			-	+		+
Horses	Zemaitukai	8	425	-	+	+	+
	Large-type Zemaitukai	3	89	-	+	+	+
	Lithuanian Heavy Draught	3	150	-	+	+	+
Pigs	Lithuanian native	5	98	-	+	+	+
	Lithuanian white old genotype	3	29	-	+	+	+
Geese	Vistines geese	-	-	-	-	-	-
Dogs	Lithuanian Hunting	-	-	-	-	+	-

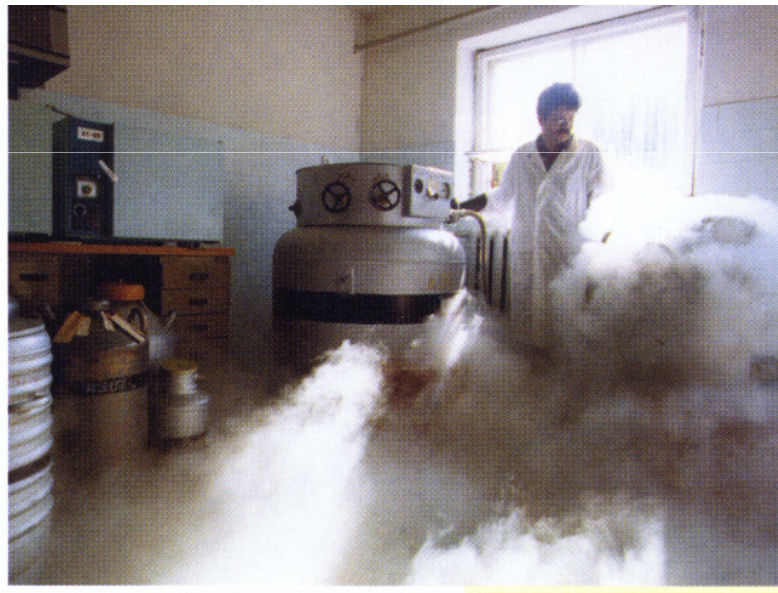


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# Long term preservation





# Lithuanian native cattle

Lithuanian Ach-Grey



Lithuanian White-backed



Lithuanian red  
(old genotype )

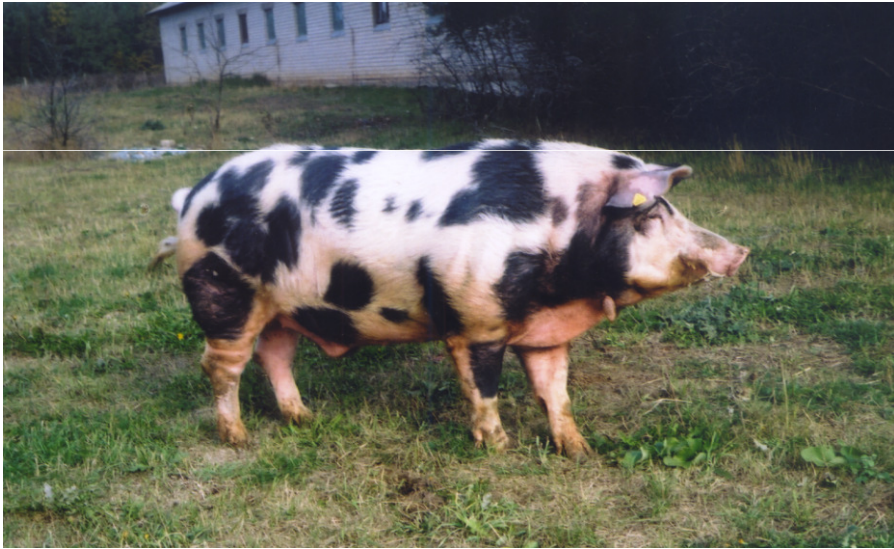


Lithuanian  
White and black  
(old genotype)





Lithuanian native pig



Lithuanian White pig  
(old genotype)





The population of  
Lithuanian “Vištinės”  
geese was restored  
from 100 eggs in  
1996.





Lithuanian Hunted dog



Native bees





Thank you for  
your attention

