



# Conservation of AnGR in Slovenia

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“IN VIVO“ CONSERVATION OF EUROPEAN LIVESTOCK  
“CHALLENGES APPLAYING GUIDELINES INTO PRCTICE“

# *National policy on AnGR*

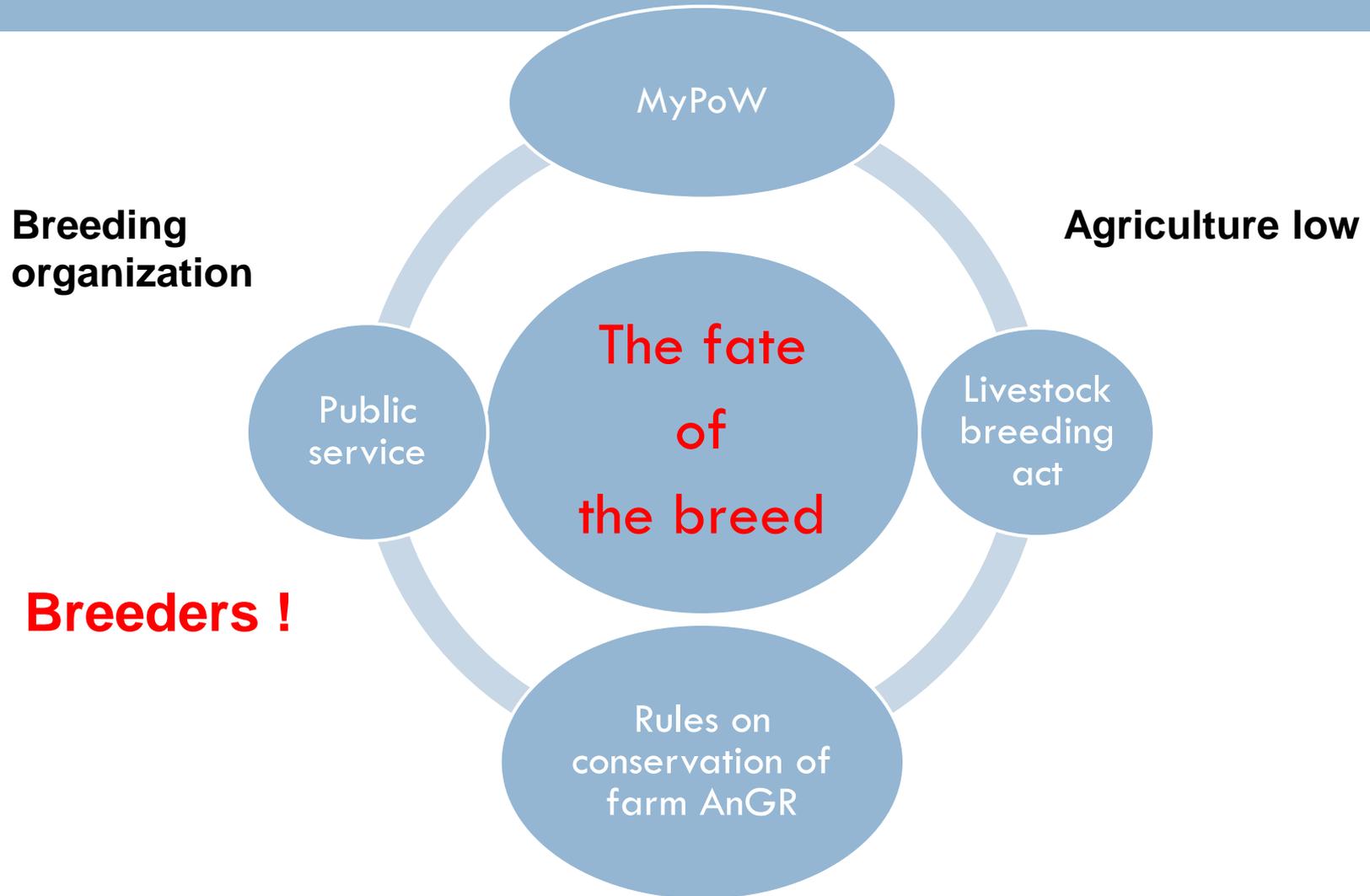
## **LIVESTOCK BREEDING ACT (2002)**

**(chapter 6):**

### **CONSERVATION OF GENETIC VARIABILITY AND GENETIC RESERVES OF FARM ANIMALS**

- Article 66: **Conservation of genetic variability**
- Article 67: **Biotic diversity in animal husbandry**
- Article 68: **Indigenous breeds**
- Article 69: **Monitoring and analysing of biotic diversity in animal husbandry**
- Article 70: **Special protection of the indigenous breeds of *Apis Mellifera***

# The legal framework



Public Service (PS) for farm animal genetic resource conservation established an expert council

- Members are: a representative of PS, a representative of each approved **breeders' organizations**, one representative of each of the other organizations performing specific tasks in the PS
- Expert council gives its opinion to the annual program and annual reports and all the important questions regarding the work of PS

## 7-YEAR PROGRAM OF WORK

In accordance with the Agriculture Law the Republic of Slovenia shall **ensure and maintain genetic reserves for the species**, breeds and strains of domestic animals in the form of a minimum number of domestic animals, doses of semen, ova or embryos and/or other **biological material**

## GENETIC RESERVES ARE DETERMINED BY THE REGULATION ON CONSERVATION OF FARM ANIMAL GENETIC RESOURCES

which determines the preparation of requirements for systematic activities **ensuring an overview of the minimum reserves** of genetic material for each breed of farm animals...

# GENE BANK STORAGES

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- Biotechnical faculty-Ljubljana (BF)
- Veterinary faculty-Ljubljana (VF)
- IC Preska
- IC Ptuj

# GENE BANK STATISTIC FOR CATLLE

Breed	Type	Animals	Samples	Doses
Cika	semen	18	56	1411
Pinzgauer	semen	1	7	411
Slovenian Brown	semen	327	329	48135
Simmental	semen	287	288	25900
Crossbred	semen	34	35	2930
<b>TOTAL</b>	<b>semen</b>	<b>667</b>	<b>715</b>	<b>78787</b>

# GENE BANK STATISTIC FOR SHEEP AND GOAT

breed	type	animals	samples	doses
Bela Krajina sheep	Semen	9	30	293
Bovec sheep	Semen	10	30	402
Istrian sheep	Semen	8	24	240
Jezersko-Solčava sheep	Semen	8	23	230
Drežnica goat	Semen	3	9	90
<b>TOTAL</b>	<b>semen</b>	<b>38</b>	<b>116</b>	<b>1255</b>

# Tissue DEPOSITORY

Species	Breed	Type	N	DNA
Dog	The Karst Shepherd (Kraševac)	tissue	62	✓
Horse	Posavje horse	blood	64	
	Haflinger	blood	59	✓
	Island	blood	7	✓
	Troter	blood	342	✓
	Quarter	blood	3	✓
	SI Cold-Blooded	blood	204	✓
	SI Worm-Blooded	blood	28	✓
	Lipizzan horse	blood	1063	✓
	Galloper	blood	20	

...continued

# Tissue DEPOSITORY

Species	Breed	Type	N	DNA
Cattle	Cika	blood	156	✓
	Cika	semen	150	
	Slovenian Brown	blood	184	✓
	Black and White	blood	123	✓
	lisasta	blood	217	✓
Pig	Krško Polje pig	tissue	121	
Goat	Drežnica	blood	45	
Hen	Styrian Hen- Štajerka	semen	20	
Honeybee	Karniolan Honeybee	tissue	400	

...continued

# Tissue DEPOSITORY

Species	Breed	Type	N	DNA
Sheep	Bovec sheep	blood	45	
		semen	210	
	Istrian sheep	blood	46	
		semen	60	
	Jezerško-Solčava sheep	blood	55	
		semen	120	
	Improved Jezerško-Solčava	blood	29	
	Bela Krajina sheep	blood	6	
		semen	105	
	Texel	blood	14	
TOTAL			3958	

# CLASSIFICATION OF BREEDS

- local breeds (autochthonous and traditional)
- foreign breeds (allochthonous, exotic)

**BREED** is a group of geographically or regionally separated farm animals, originating from the same ancestors, sharing the same characteristics defined in breed standard.

# Register of breeds

Breed group	No. of breeds	Breed prog.	Basic zotec. charact.	Gene bank	Tissue deposit bank	Breeding value	Zotec. assess. and measures
Autoch.	13	12 (92.3%)	13 (100%)	9 (68.2%)	13 (100%)	5 (38,4%)	13 (100%)
Tradition.	16	16 (100%)	16 (100%)	3	7 (43.8%)	13 (81.3%)	16 (100%)
Foreign	19	13 (68.4%)	19 (100%)	1	7 (36.8%)	6 (31.6%)	19 (95%)
Total	48	42 (85.4%)	48 (100%)	9 (18.8%)	27 (56.3%)	24 (50%)	48 (100%)

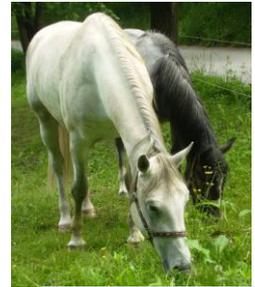
# Conservation work-criteria

- Estimation of the population size
- Number of pure females and males
- Endangerment category (1-critical, 2-endangerment, 3-vulnerable, 4-at risk, 5-not endangered)
- Category of the use (1-local, 2-spread, 3-other)
- Morphological and biological characteristics
- Gene bank monitoring (*In situ*, *Ex situ*)
- Approved breeding program
- Individual identification
- Measuring of production traits
- Breeding value
- ...

# Autochthonous breeds in Slovenia



- Styrian hen
- Carniolan Honeybee
- Karst shepherd
- Lipizzan horse
- Posavje horse
- Slovenian coldblooded horse
- Cika cattle
- Jezersko-solcava sheep breed
- Bovec sheep
- Bela Krajina Pramenka
- Istrian Pramenka
- Dreznica Goat
- Krskopolje pig

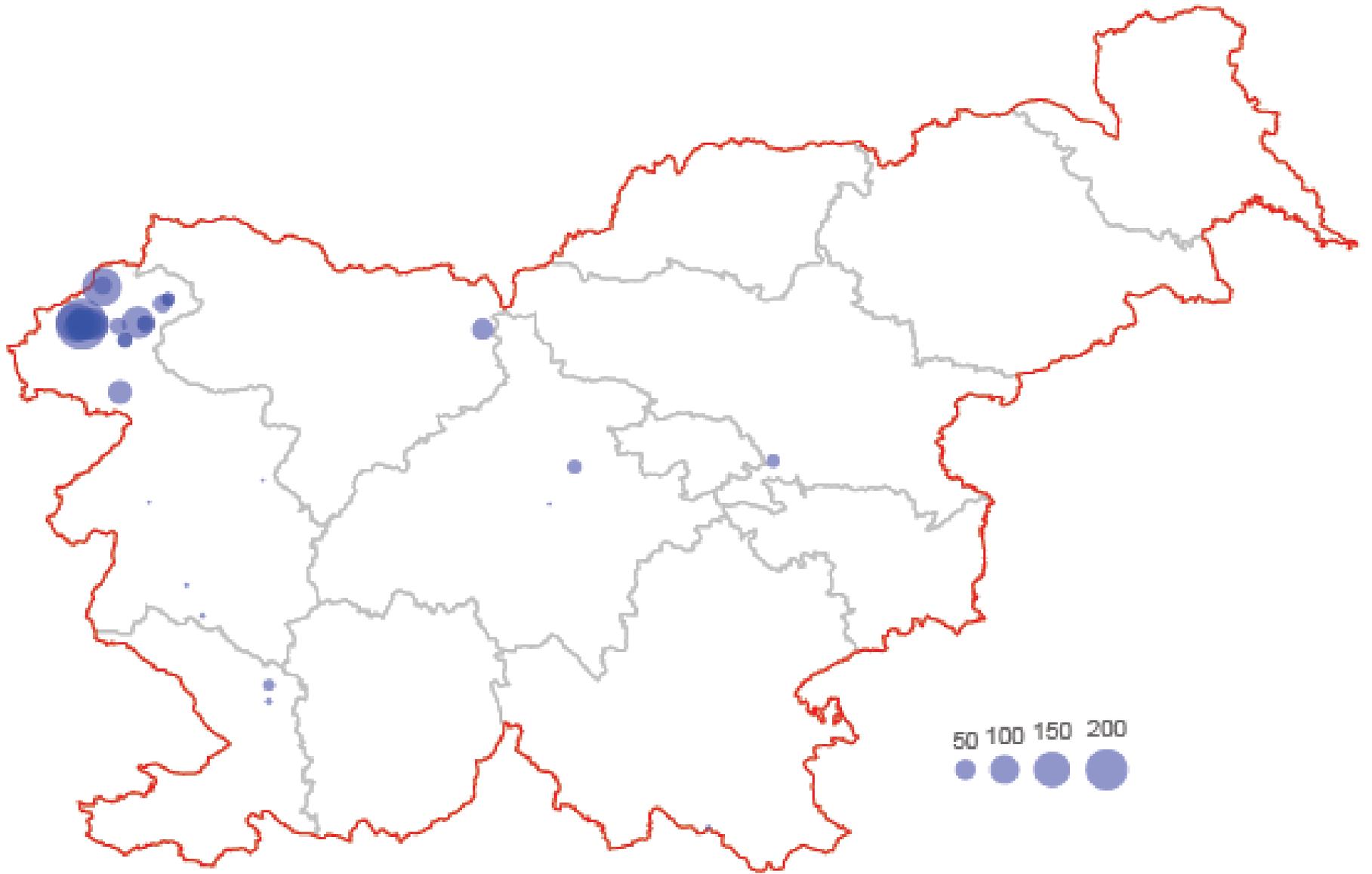


Autochthonous (historical documents, indigenous environment, breeding documentation, origin for five generation...)

# Bovec sheep

- **Upper valley of Soca; town of Bovec;**
- **Bovec sheep - dairy breed;**
- **Rams (45-50 kg), ewes (35-40 kg);**
- **well adapted; harsh grazing, poor rearing conditions;**
- **Mountain Krn, Kanin, Mangart; jun-sep;**
- **138 rams; 2.300 ewes, at risk;**
- **221 (300) kg; 6.3 % fat, 5.5 % proteins.**





# Bovec cheese

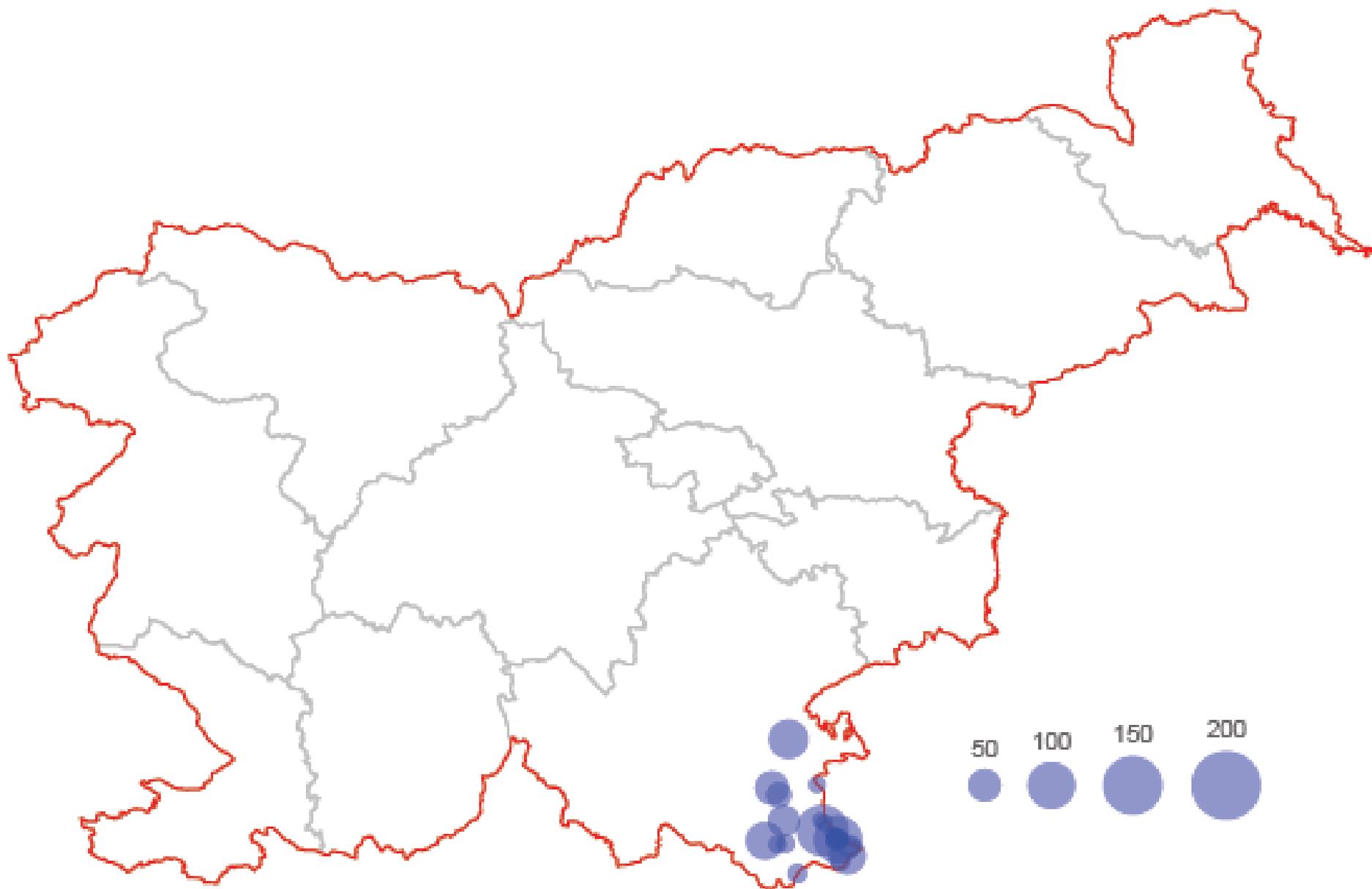
- 150 years; designation of origin;
- Mountains cheese dairy ; other in the valley;
- 24% No, 38% Yes, 38% try the cheese;
- Production - high expenses, scarce of feed;
- Marketing – season, weather, No. of tourists.



# Bela Krajina Pramenka

- **Karst region of Bela Krajina;**
- **well adapted;**
- **ewes: 50 kg, rams: 65 kg;**
- **Seasonally polyestric, average 1.22 lambs;**
- **Lambs 25 kg, third or fourth month;**
- **Thin bones - high dressing percentage;**
- **Pure breed animals – 29 rams; 880 ewes (vulnerable).**





# The Bela Krajina lamb

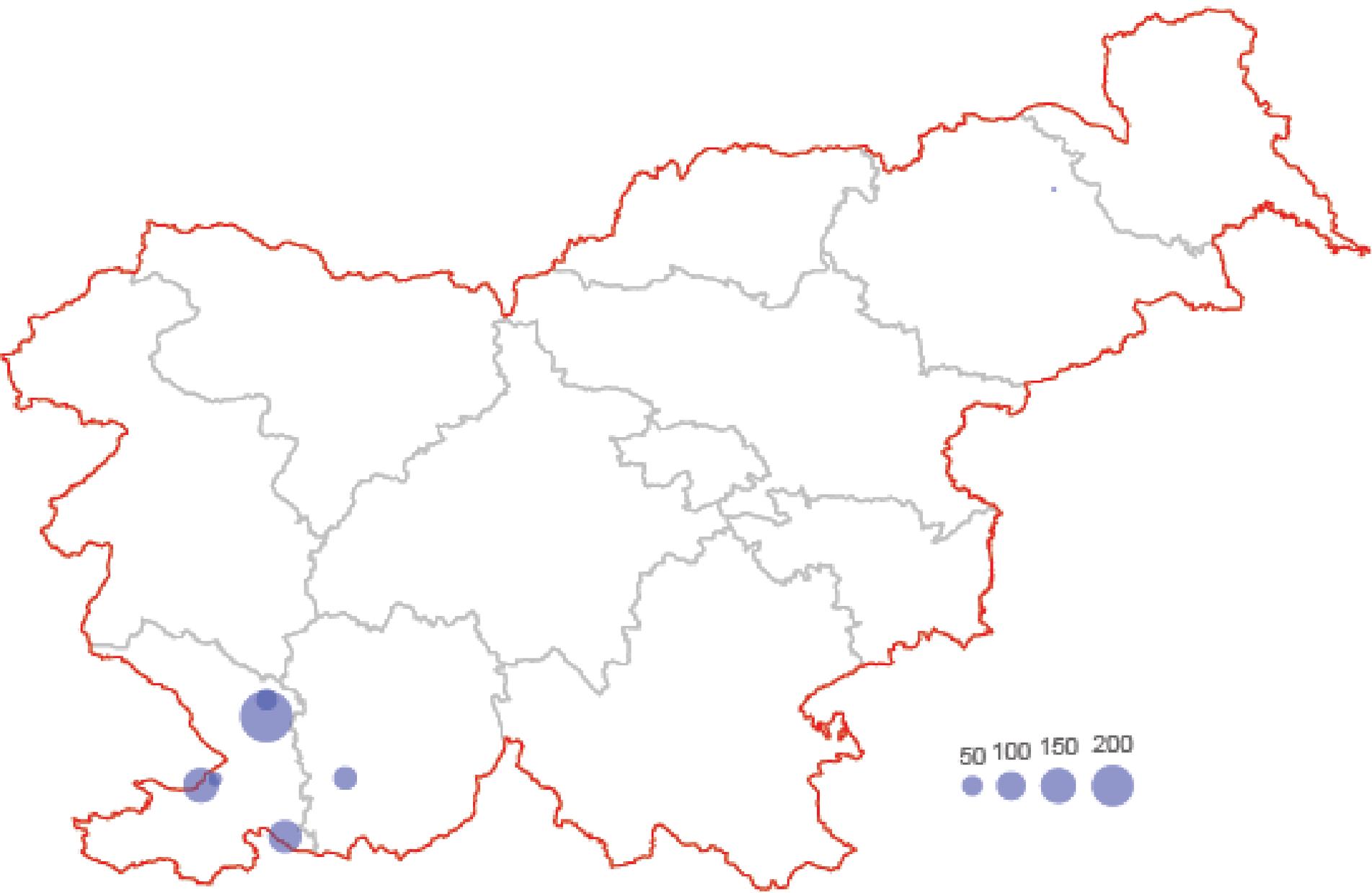
- ❑ **Market - not organized, “black market”;**
- ❑ **Majority – restaurants, agro tourism, festivals**
- ❑ **restaurants preferred BP breed, better quality**
- ❑ **meat (tastier, juicy and sweet);**
- ❑ **thinner bones - easier to strip the skin off;**
- ❑ **products BP – higher price than other breed in the region.**



# Istrian Pramenka

- ❑ **Region of Karst and Istria;**
- ❑ **Dry old grass, skilful - finding fresh grass between rocks;**
- ❑ **Adaptability to relatively rough surroundings;**
- ❑ **Litter size - 1.19; 119 kg of milk;**
- ❑ **7.2 - 8 % fat; 5.9 - 6 % protein;**
- ❑ **50 rams; 900 ewes; vulnerable population.**





# Karst sheep cheese

**Region of Karst - hundred's of years;  
Cheese uniqueness - specific karst environment,  
local breed, climate, soil, pasture composition,  
chemical, microbiological composition, storage  
conditions;**

**Taste and smell are full,  
aromatic, slightly spicy  
charac.- sheep cheese.**

**Tourists from Italy, local  
restaurants, home tourists.**



# Karst lamb meat

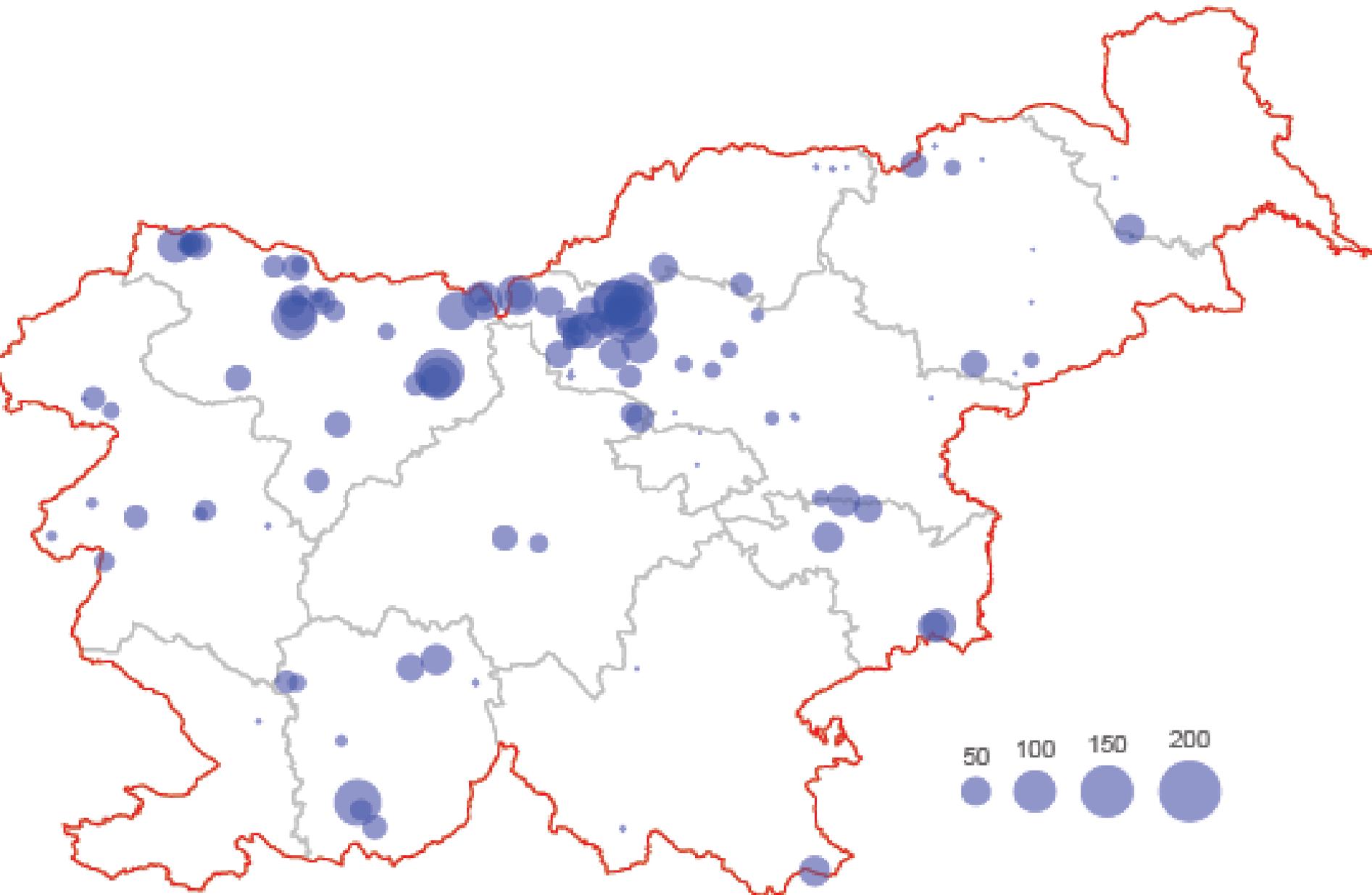
- **Recognition - quality of meat, suckling lambs;**
- **Pasture; Herbs 20-40%, aromatic essence;**
- **Product: very tasty meat;**
- **Buyers – Italy, local restaurants, tourists.**



# Jezersko-Solčava sheep breed

- ❑ meet breed;
- ❑ Rams (100 kg), ewes (65 - 75 kg);
- ❑ adapted to environment;
- ❑ Twin lambs, litter size 1.5 lambs;
- ❑ Fertile year-round, mate - soon after lambing;
- ❑ Population number – 17400, not endangered.





# Products Jezersko-Solčavske ovce

## Lamb meat

- Some research on quality of lamb meat;
- No research-on marketing; different personal contact—sold at home,

## wool



agro tourism;

- slippers,
- clothes,
- bags,
- Toys.



# Conclusions

- ❑ **Local products ??**
- ❑ **Marketing—at home, Agro tourism, restaurant;**
- ❑ **Offer=Demand**
- ❑ **Small production (seasonal)— can not fulfil expectation of wider market;**
- ❑ **Breeders use their specific (traditional technology);**
- ❑ **Consumers????**
- ❑ **No marketing of products on national level;**
- ❑ **Geographical distribution -**
- ❑ **Subsidies from environmental programme are not enough, however – does money help?**

# In the future...

- To give the farmers the opportunity easier to sell the products of local breeds
- Breeders need to work together to assure a higher offer and good quality of products

so

**Combining conservation and sustainable use !**

# Thank you for your attention!

