

Experiences with implementation of a dual purpose cattle conservation programmes in Poland

National Research Institute of Animal Production
Balice near Kraków



Ewa Sosin-Bzducha

Outline

- 1. Introduction: cattle population in Poland**
- 2. The breeds included in the conservation programmes (history from the beginning of XX century)**
- 3. The conservation programmes of Red and White and Black and White: aims, scopes and achievements**
- 4. Institutional arrangements in implementation of conservation programmes**
- 5. Future challenges**

Some facts....

- Poland is a typical lowland country
- 58,9% of land is used for agriculture
- The total number of dairy cows in Poland in 2010 reached 2.528.827 heads
- Dairy cows makes up 96% of the total cow population
- 23,93 % of dairy cows are under **performance recording**

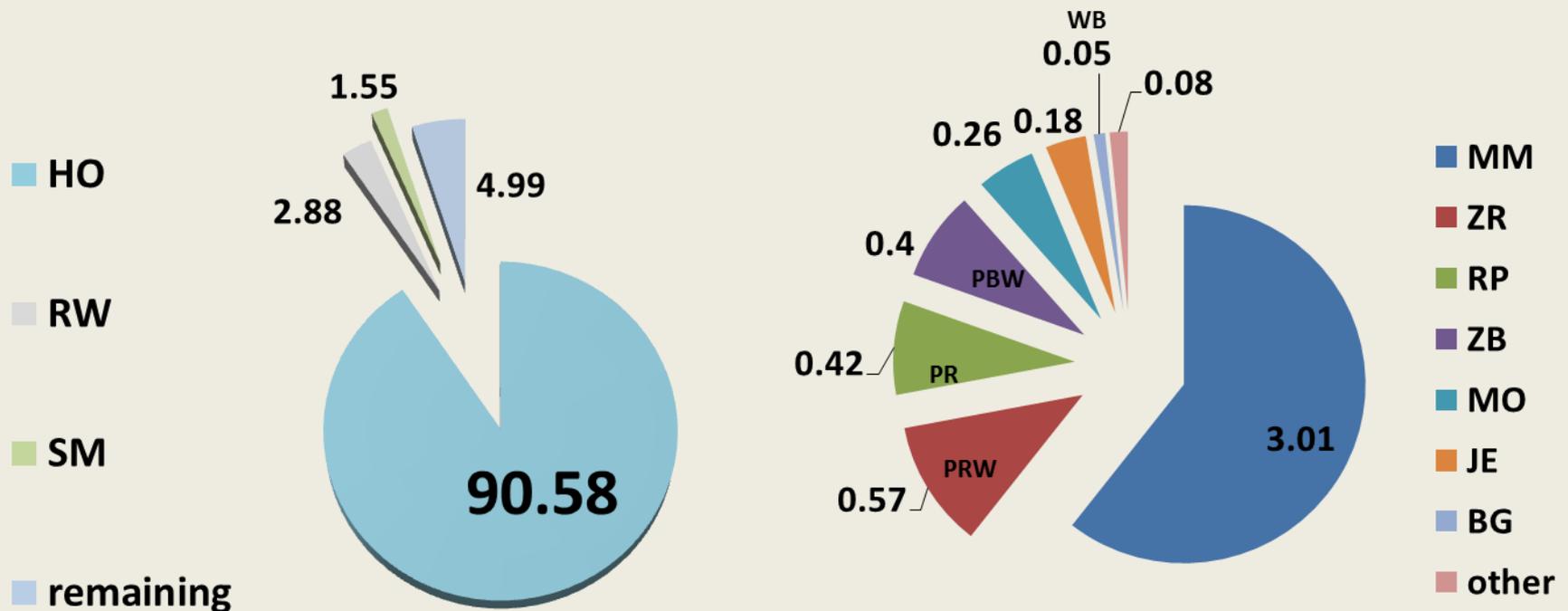
Some facts...

Ownership structure:

- 84% of the cattle is kept by individual farmers,
- 8% of cows is owned by private companies
- 8% is found in the public and co-operative sectors

- 90% of all farms are small (<5ha) or medium size (5-15ha)
- The most common is semi-intensive production system
- Extensive system is used in harsh environmental conditions

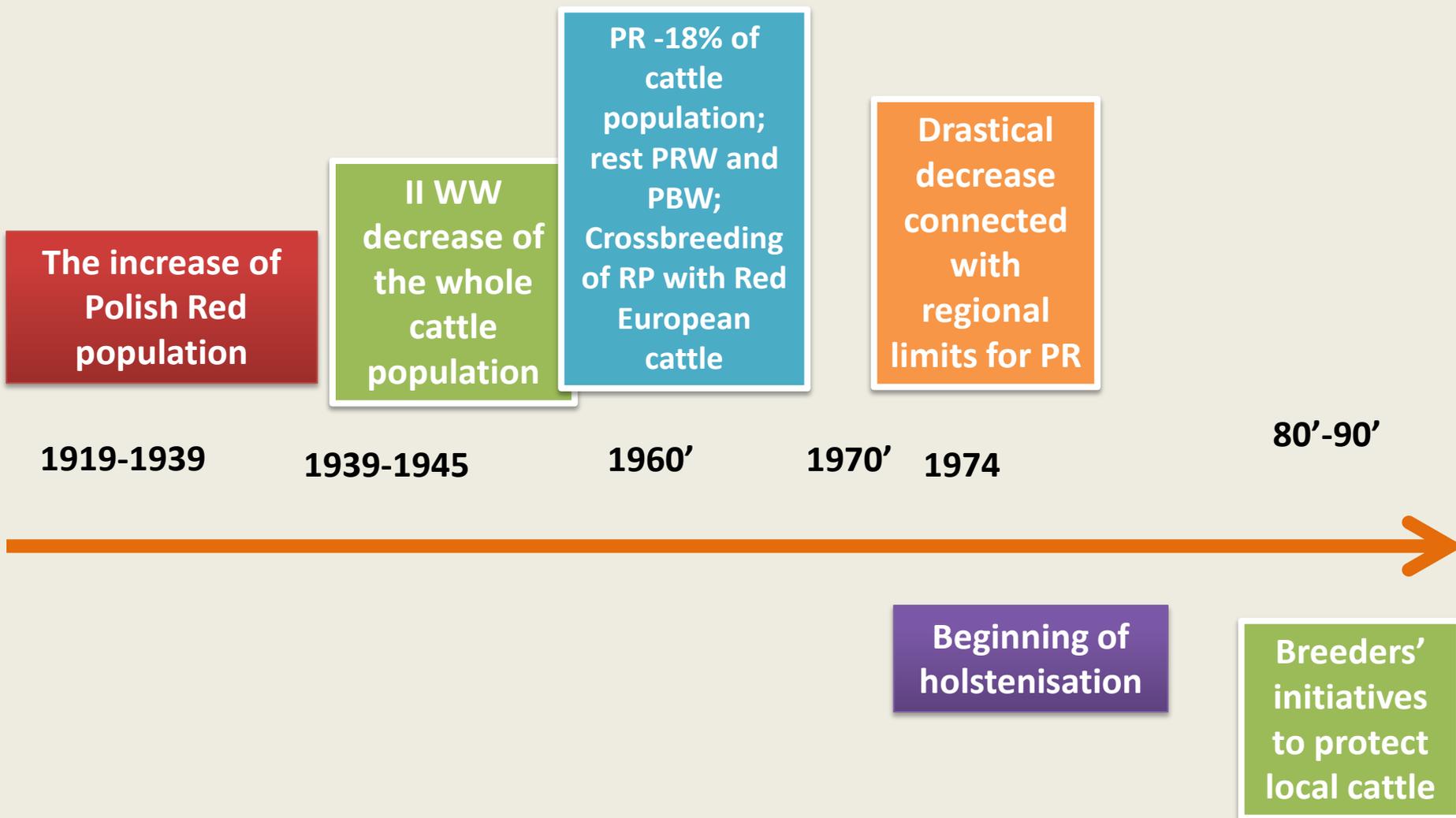
The breed structure in recorded population of dairy cattle in 2010



Source: Polish Federation of Cattle Breeders and Dairy Farmers 2010



History of Polish cattle breeds



Development of beef cattle breeding programme



1999



2007

Herdbook for PHF

1994

2004

2005

?

2008



Holstenisation a great success????!!!!

Two sides of the coin



Is there a need to keep dual purpose cattle in Poland?



Commercial production:

- majority of cattle belong to Polish Holstein (very advanced backcrossed population)

Subsistence and small farmers:

- Black and white and Red and White cattle with substantial but unknown contribution of HF
- not included in performance recording scheme or herd books



Is there a need to keep dual purpose cattle in Poland?

- Majority of dairy cows are kept in small herds, in semi-intensive husbandry conditions
- Extensive production is used in harsh environment and also on small subsistence farms.
- No tradition of beef cattle breeding, no single native beef breed
- Relatively small population of imported beef breeds (Limousine, Charolaise, Simmental)
- Cattle producers carry out both dairy and beef production.
- The majority of beef production is based on fattening calves from dairy herds.
- 25% of dairy cows are inseminated with beef bulls' semen

The aims of conservation programmes for Polish Red&White and Polish Black&White

- Restitution of dual purpose utilisation
- Decreasing of share of HF genes in respective populations
- Preservation of typical traits characteristic for these old Polish cattle breeds
- Maintaining within breed genetic diversity



Characteristic traits of PRW and PBW cattle

- Good protein composition
- Beneficial profile of unsaturated fatty acids due to production system (grazing)
- Milk of Polish Red & White cattle very efficient for cheese production
- Very good fattening and slaughter traits, especially in Polish Red & White cattle



Characteristic traits of PRW and PBW cattle

- Very good adaptation to harsh environmental conditions
- Modest feed requirements
- High disease resistance, very good health and longevity
- Good fertility and easy calving
- High robustness and good maternal ability

Maximum allowed contribution of HF in pedigrees of Polish Red & White and Polish Black & White cattle

Year	HF genes (%)
2007-2009*	50
2010-2012	37.5
2013-	25

* plus cows selection based on phenotype only

Organisation of conservation programmes in Poland

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

NATIONAL RESEARCH INSTITUTE OF ANIMAL PRODUCTION

Cattle conservation programme Coordinator

ADVISORY BOARD

WORKING GROUP on CATTLE GENETIC RESOURCES

POLISH FEDERATION OF CATTLE BREEDERS AND DAIRY FARMERS

Herd books for PR, PRW, PBW

UNIVERSITY IN LUBLIN

Herd book for BG

BREEDERS



Prevention measures in case of disease outbreaks

NATIONAL RESEARCH INSTITUTE OF ANIMAL PRODUCTION
Cattle conservation programme Coordinator

Local veterinary service:

obligatory transmission of information on localisation of herds participating in the conservation programmes

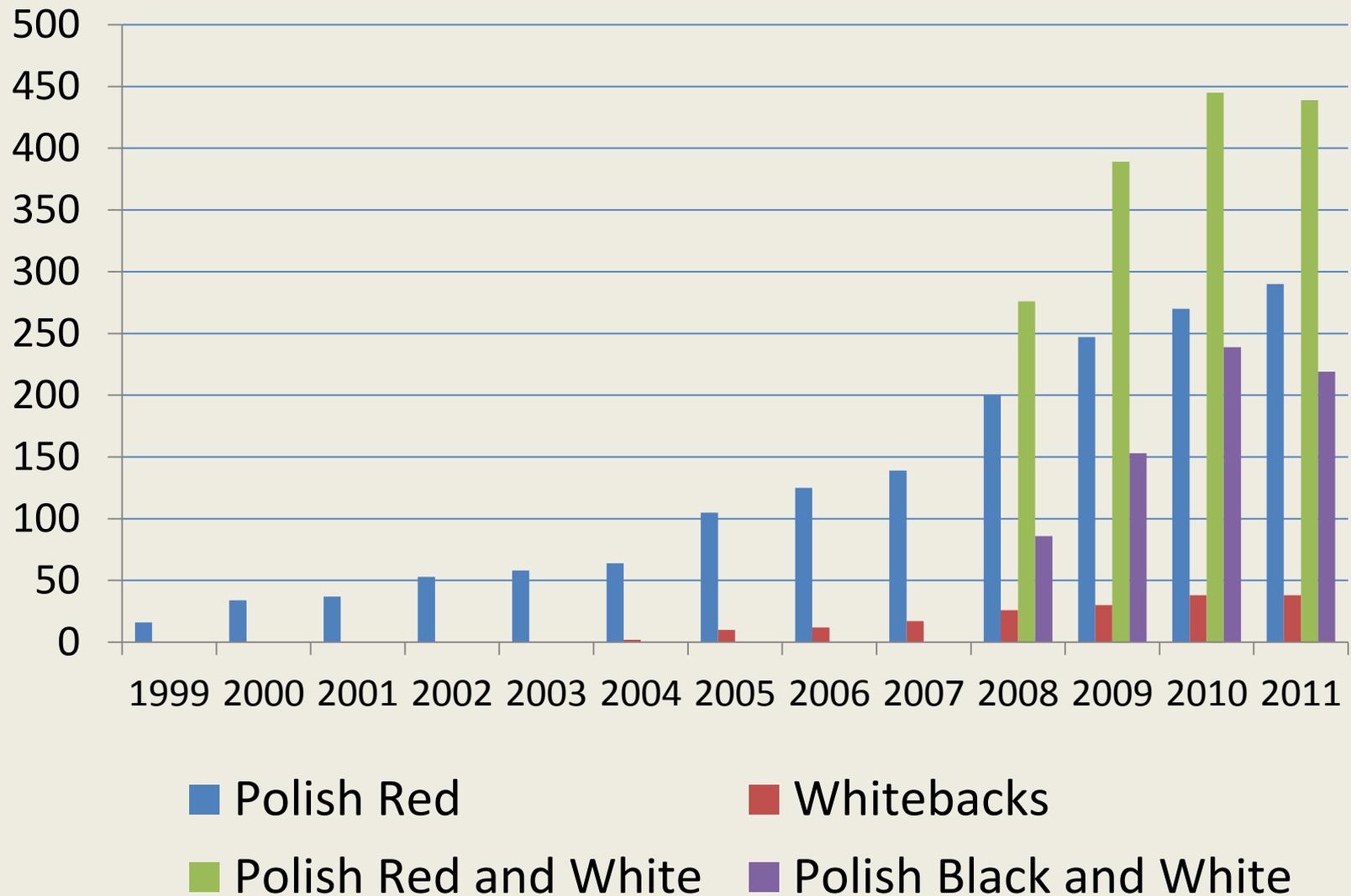


Results



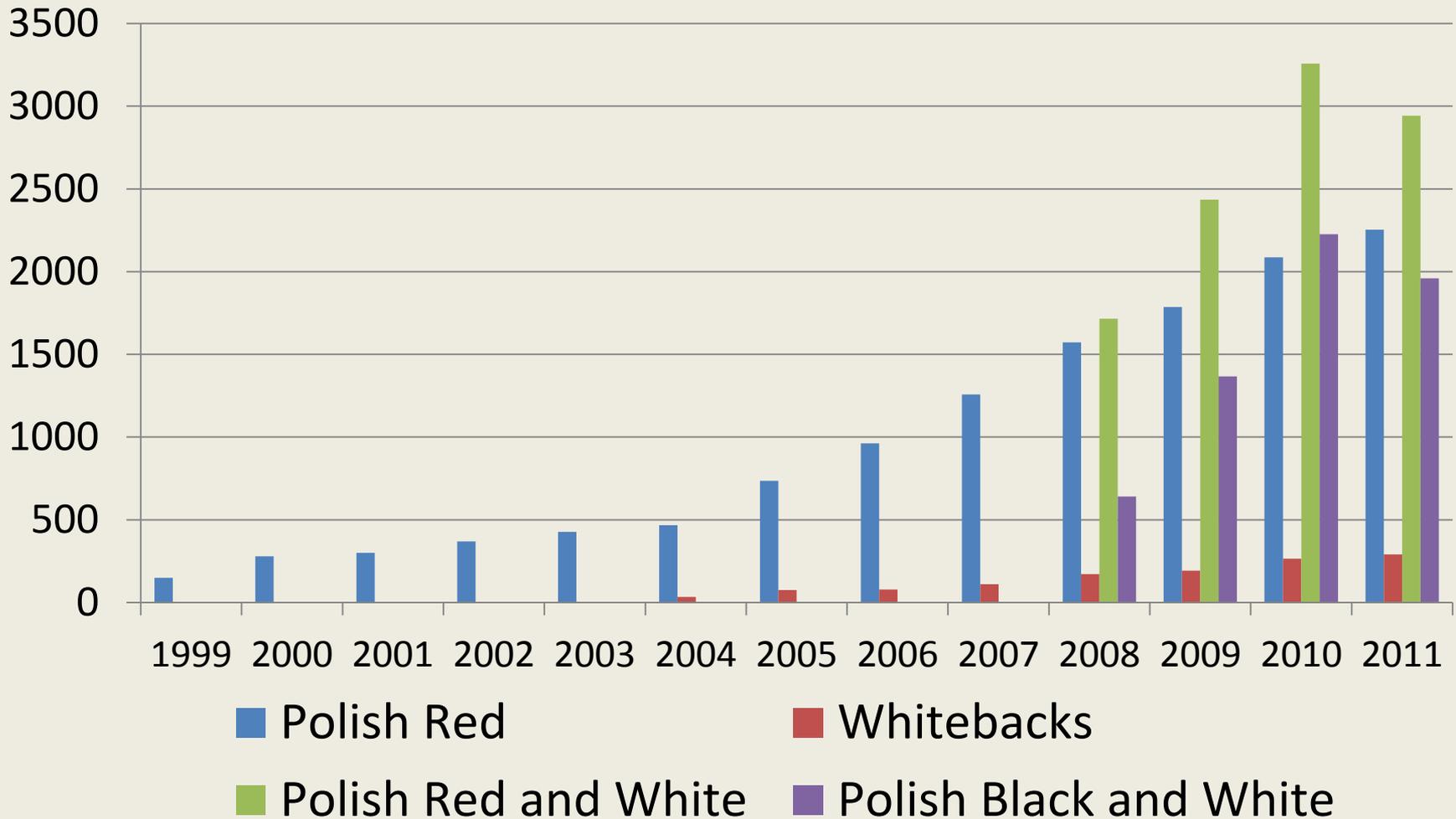


Implementation of conservation programmes: Number of herds

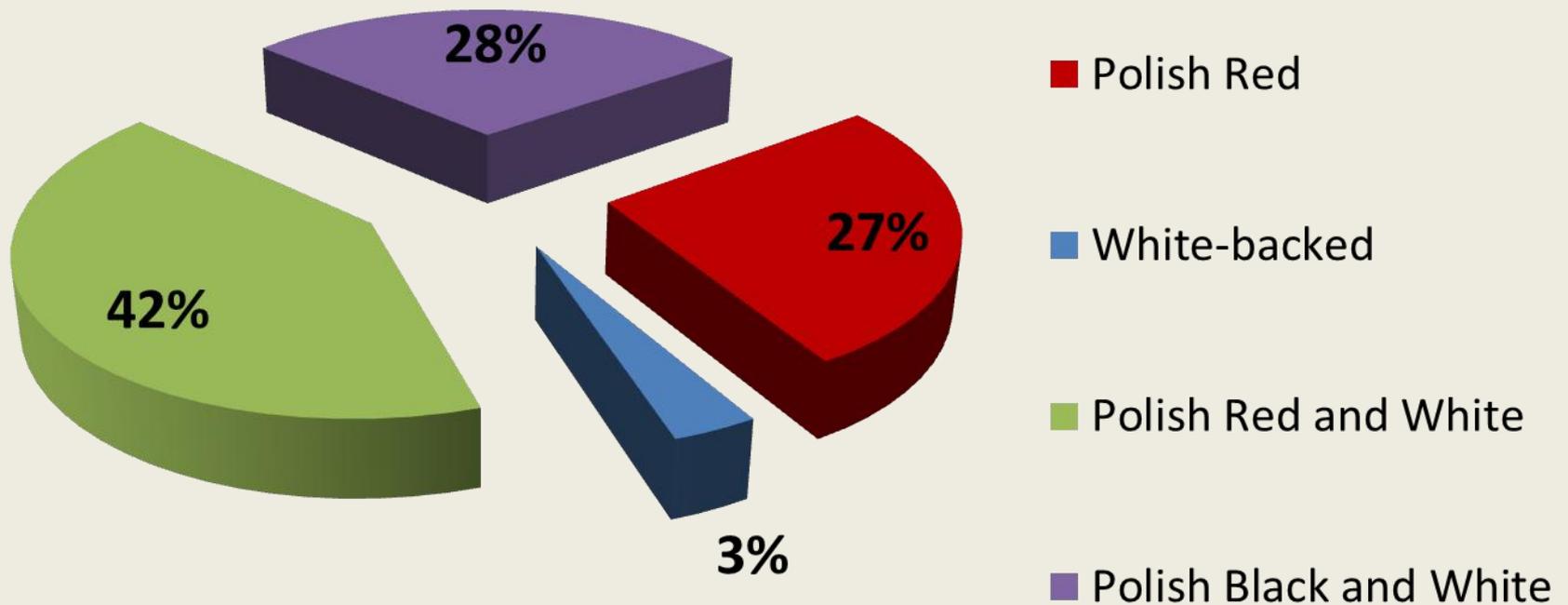




Implementation of conservation programmes: Number of cows



Conservation programmes: Breed distribution (2010)



The number of cows and herds participating in the conservation programmes

Year	Breed								Total	
	Polish Red		White-backed		Polish Red&White		Polish Black&White			
	cows	herds	cows	herds	cows	herds	cows	herds	cows	herds
1999	150	16	-	-	-	-	-	-	150	16
2000	280	34	-	-	-	-	-	-	280	34
2001	300	37	-	-	-	-	-	-	300	37
2002	370	53	-	-	-	-	-	-	370	53
2003	427	58	-	-	-	-	-	-	427	58
2004	468	64	33	2	-	-	-	-	501	66
2005	735	105	75	10	-	-	-	-	810	115
2006	1013	134	110	18	-	-	-	-	1123	152
2007	1257	139	111	17	-	-	-	-	1368	156
2008	1572	200	172	26	1715	276	641	86	4100	588
2009	1787	247	185	30	2435	389	1367	153	5774	821
2010	2091	271	265	38	3258	445	2227	239	7841	993
2011	2253	290	291	38	2943	439	1959	219	7446	986

The age structure of PRW population

Birth year	2008	2009	2010	2011
1992-2000	39,9	31,9	23	19,1
2001-2005	59,2	57	52	51,0
2006-2009	0,9	11,1	25	29,9



EVERY POPULATION IS DIFFERENT ...

Conservation Programme for Polish Red & White and Black & White Cattle

- Great interest of farmers
- About 80% of cows with no pedigree
- Selection of cows to be included in conservation programme based on the phenotype
- It is more difficult to obtain aims in PR&W than in PB&W

A way forward

- Inbreeding analysis and preparation of mating plan for all breeds (the database and software are already developed)
- Development of a system for collecting and storing biological material
- Promotion of ecological farms and ecological initiatives
- Promotion of native breeds as a symbol of natural landscape

Future challenges

- Establishment of breeders' associations for Polish Red & White and Polish Black & White
- Undertaking initiatives to develop a high value products from native breeds
 - (there is a positive trend in consumption of organic products;
 - origin and quality of products become more and more important for consumers)



Thank you for your attention 😊