



Regional workshop – Budapest:
**„Ruminant livestock production:
Improving efficiency and reducing environmental impact“**

**Regional Livestock Sector,
breeding industry and goals
(Slovenia, Croatia, Serbia & Macedonia)**

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Introduction of Region (in 2014)



Agriculture in WB Region



Slovenia: cattle (dairy and suckler), forest

Croatia: arable farming; some large dairy farms

Serbia: arable farming in Vojvodina; small scale cattle and sheep farms

Bosnia and Herzegovina: fruits, small scale cattle and sheep farms

Montenegro: small scale cattle and sheep farms, fruits

Macedonia: mixed farming, fruits and vegetable

Basic data

Basic data	Slovenia	Croatia	Serbia	Macedonia
Surface area, km ²	20,273	56,610 (land) 31,067 (sea)	88,361	25,713
Population	2,061,085	4,284,889	7,186,862	2,107,000
Population density, per km ²	101.7	78.4	95.5	83.4
Length of borders, km	1,370	2,375	2,027	766
Agricultural land, in 1,000 ha	483	1,316	5,100	1,244
Share of forest land, %	63.3	47.0	35.0	39.0
Arable land, %	8.6		36.2	16,1
Permanent grassland, %	59.4	25.8	30.7	26.5
Average size of farms: ha of agr. land	7.5	5.6	5.6	n/a

Importance of livestock production in 2011/2012

National indicator	Slovenia	Croatia	Serbia	Macedonia
Agricultural GDP as % of national GDP	4,9	4,4	9,2	17.0
Labour force in agriculture as % of overall labour force	8.6	4,5	24,4	15.0
Gross agricultural output (%)				
- animal production	46.3	45.7		
- milk production	14.6	15.2	14.5	12.9
- beef production	14.0	9.1	13.6	0.2
- pig production	5.2	10.1		
- sheep production	0.7	0.4	1.7	7.2
- poultry meat and eggs production	10.6	8.0		

Source: STAT, Ivanković et al, 2014; Bogdanović et al, 2014; Bunevski et al., 2014

Milk and meat consumption per capita (in WBC)

Product in kg/capita/year	Slovenia	Croatia	Serbia	Macedonia	EU-27 (2010)
Meat and entrails	89.1				77.0
Beef meat	19.8	9.9	4.0	8.7	16.0
Pork meat	39.2	16.5	16.0	6.9	41.0
Poultry meat	26.2	18.8	18.0	10.3	17.0
Sheep/lamb and goat meat	0.9	2.3	1.5	0.7	3.0
Fish	8.3				21.4
Eggs	7.4				13.0
Milk and milk products	218.7	165	56	75.5	
- Milk – fresh milk and fermented d. products	72.8	77.4		42.0	63.1*
- Cheese and cottage cheese	14.1	24.3			16.6*
- Butter	1.5				

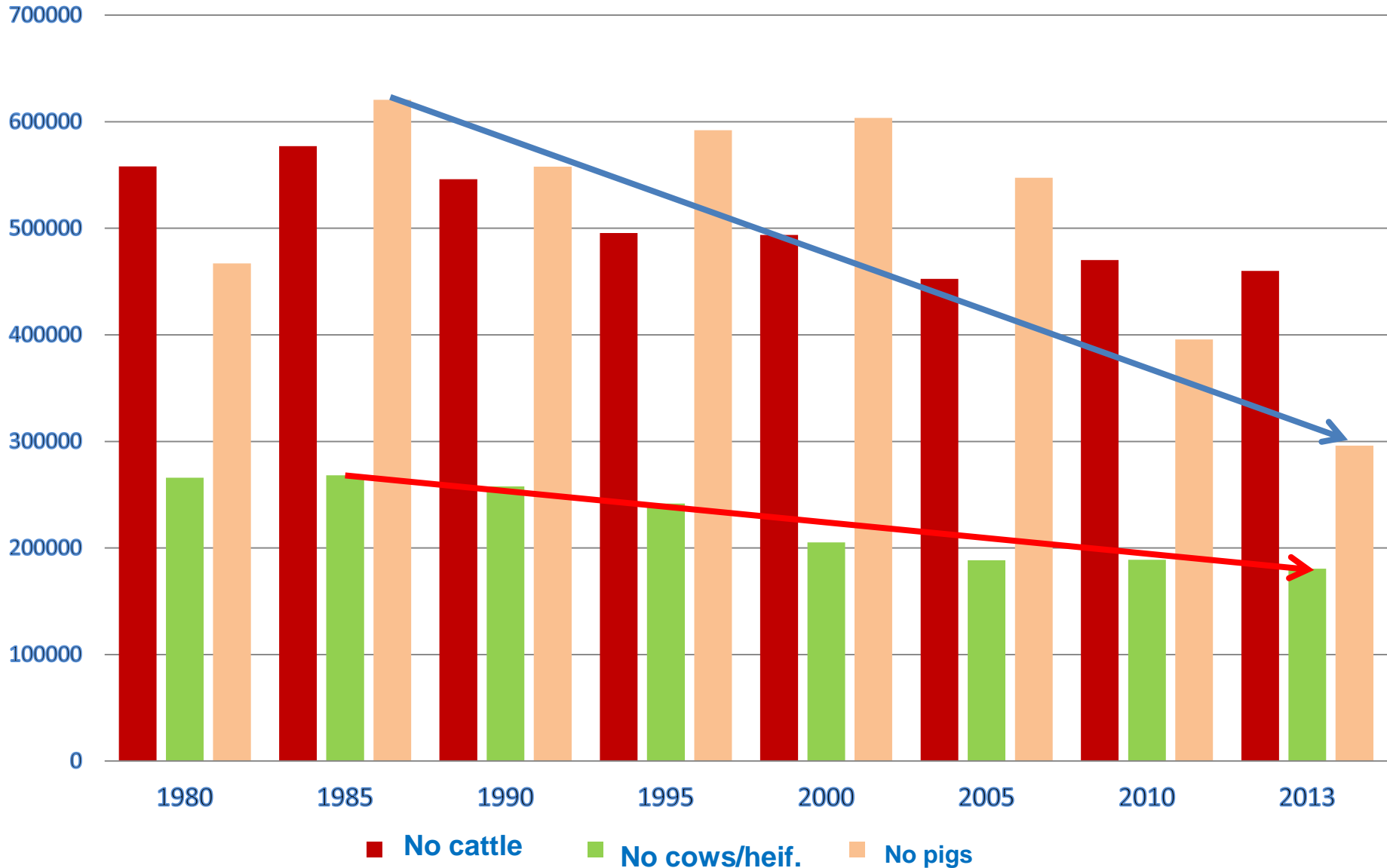
Livestock production in Slovenia

Livestock production is the **most important agricultural branch** in terms of value.

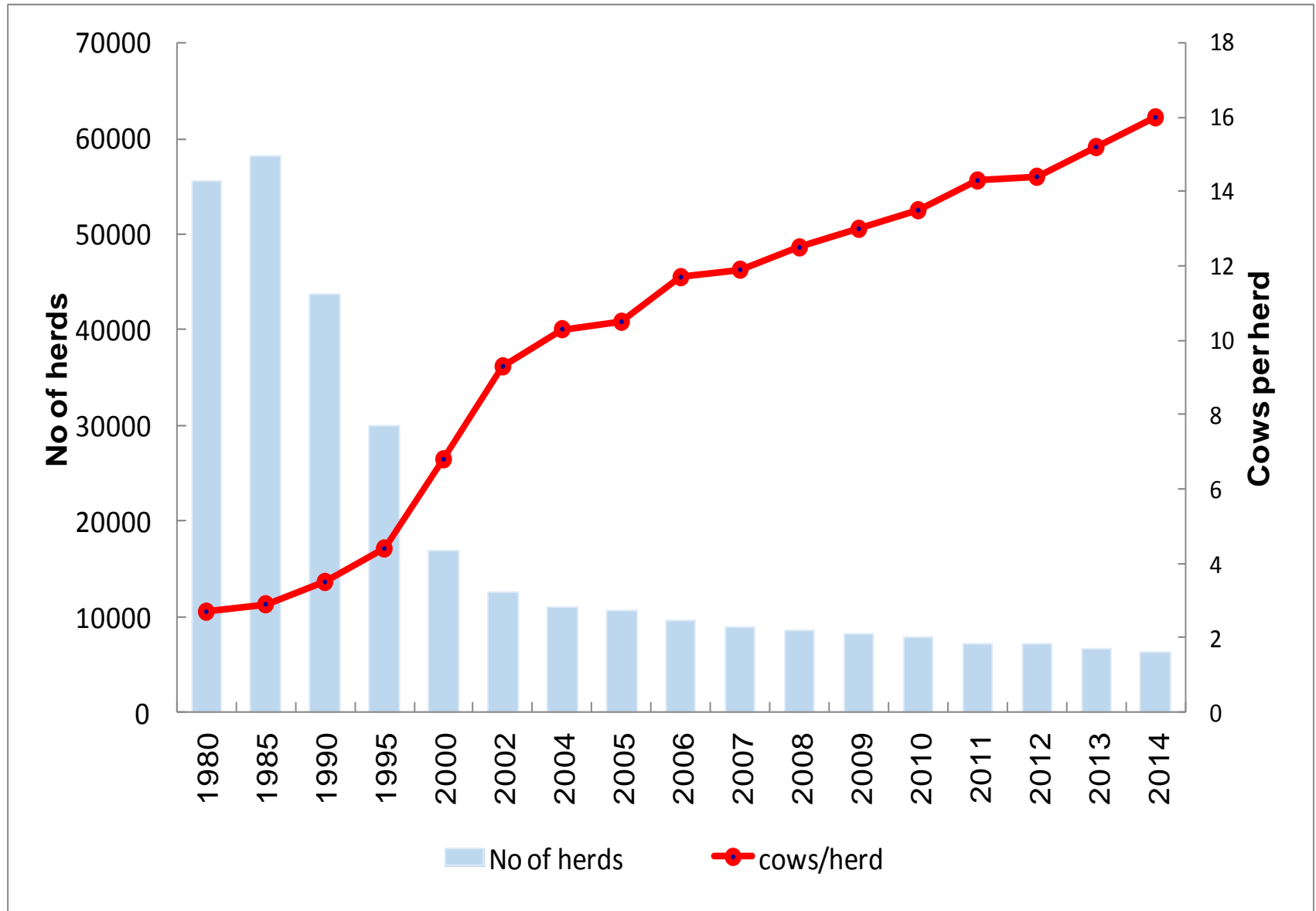
The total value of agricultural output is **€ 959 million**, in which **livestock production contributes € 511 million.**



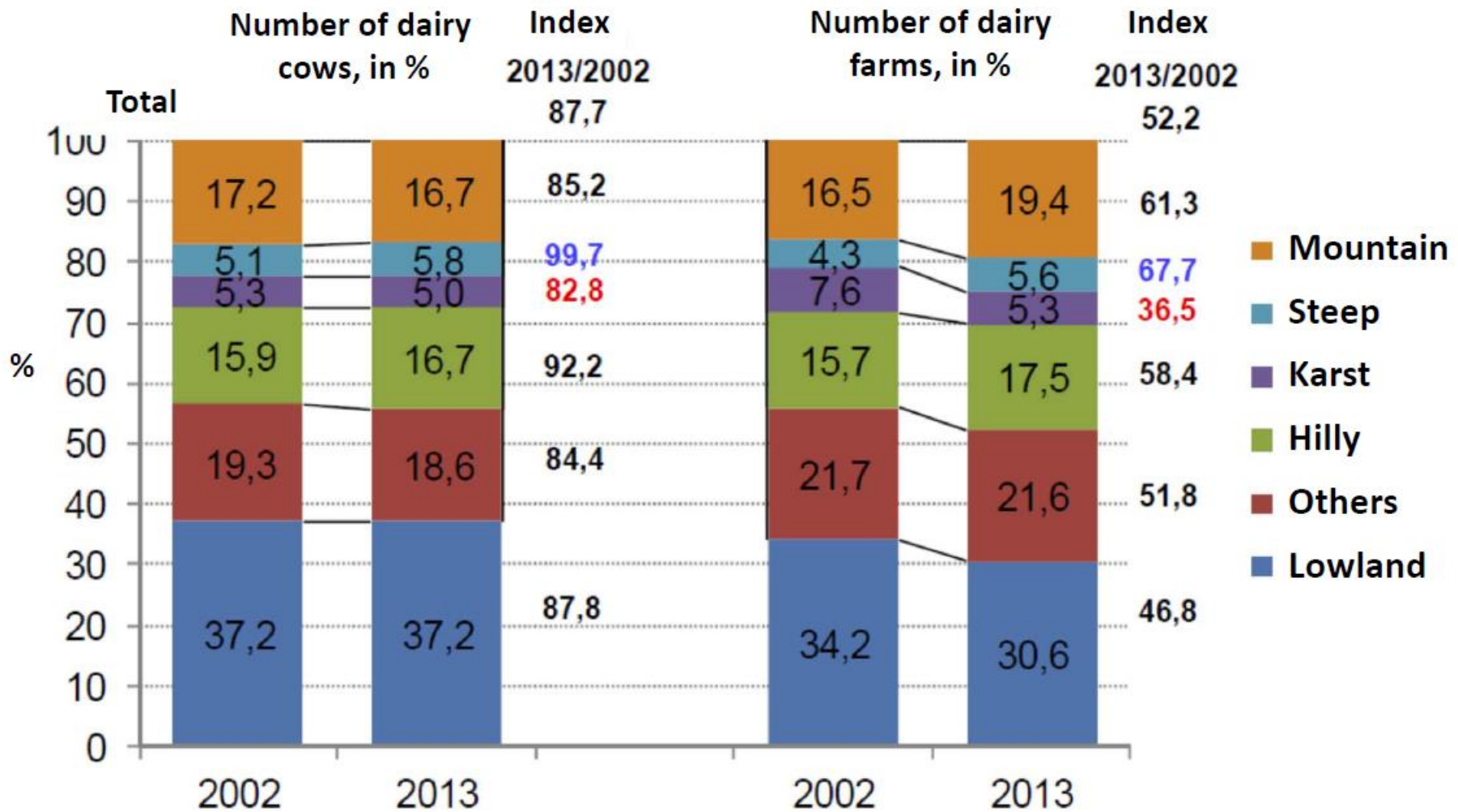
Number of cattle and pigs (1980-2013)



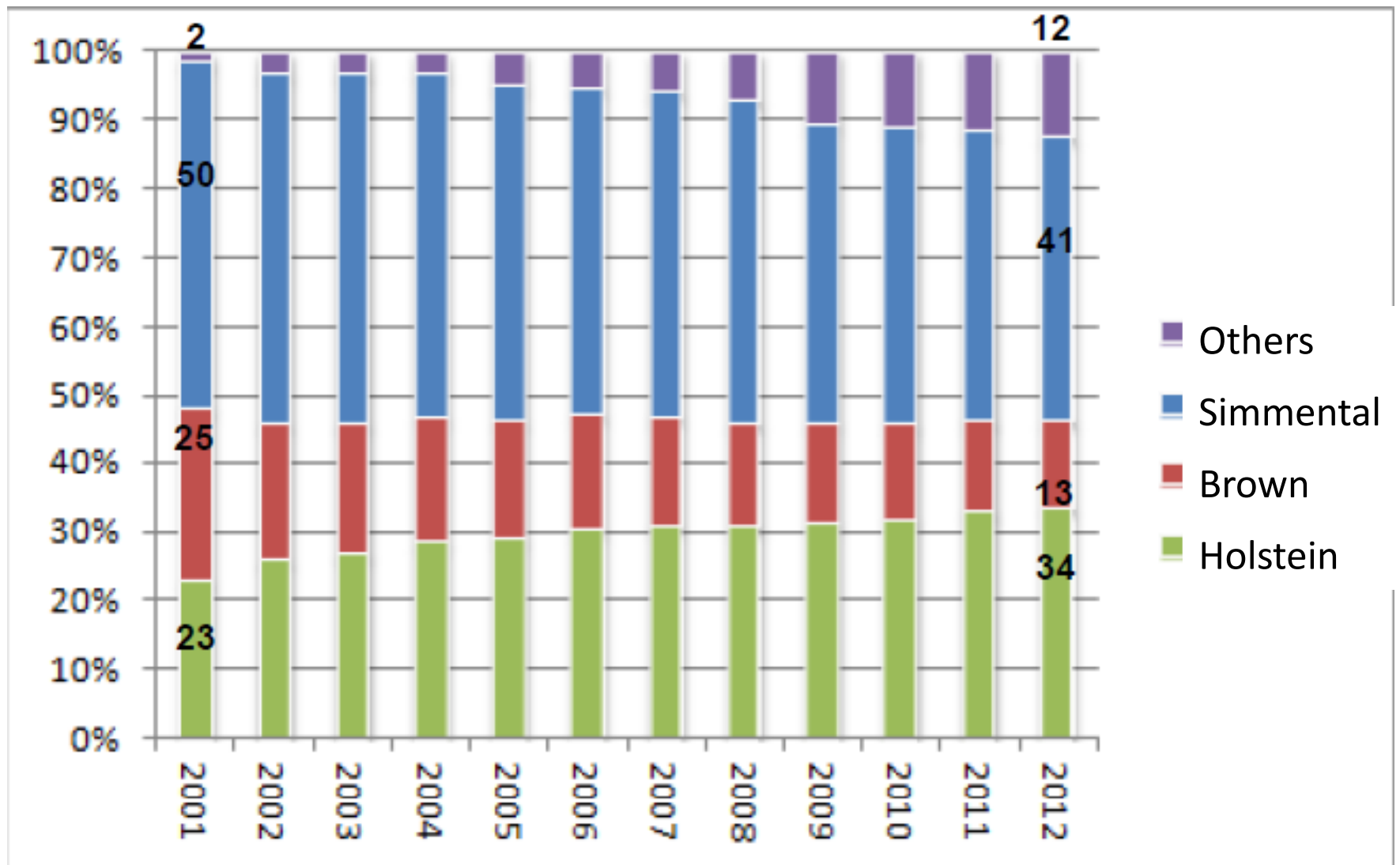
Changes in numbers of milk suppliers (number of herds with dairy cows) and average number of dairy cows per herd



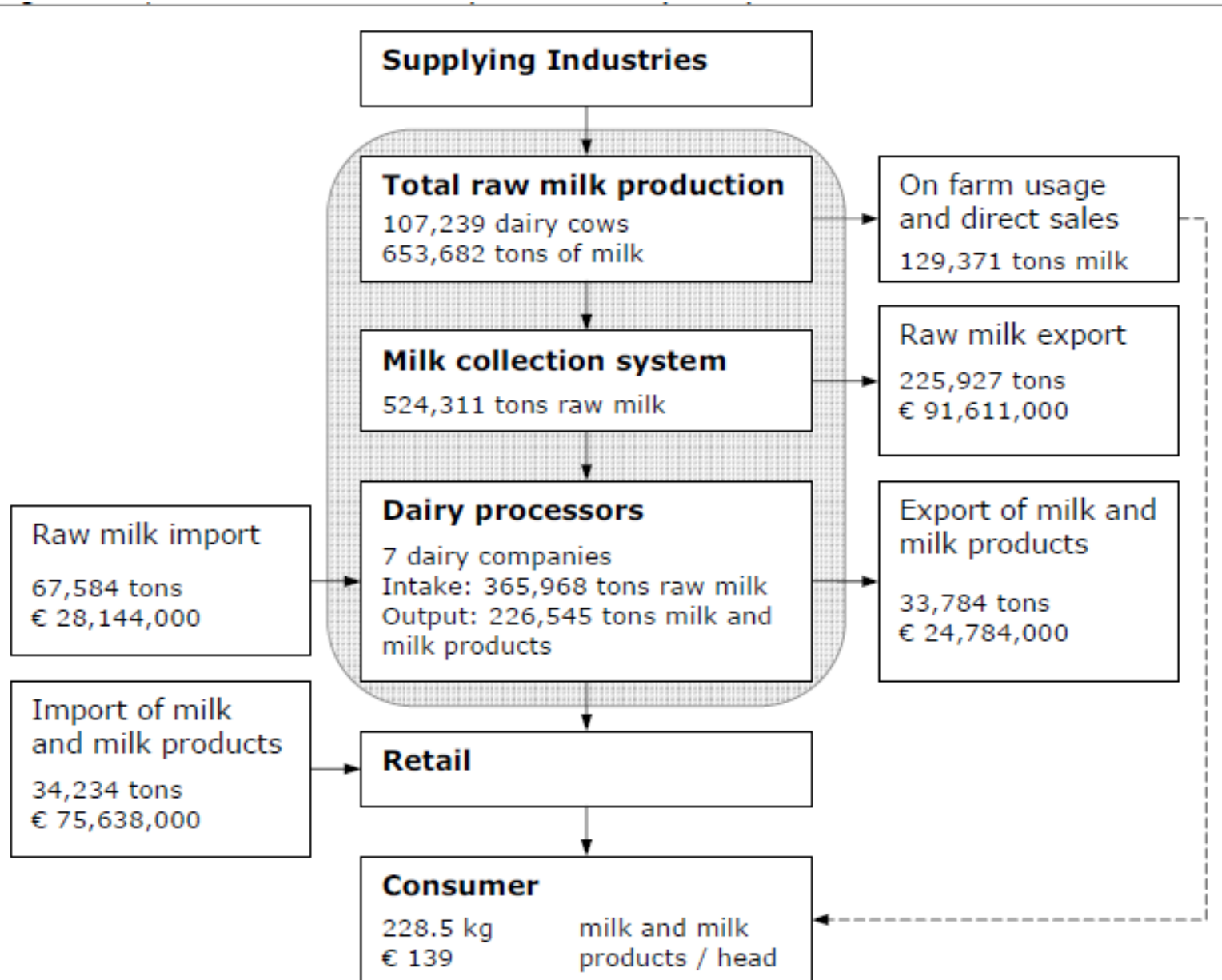
Number of dairy cows and farms in different farming conditions (2002 vs 2013)



Breed structure of dairy cows

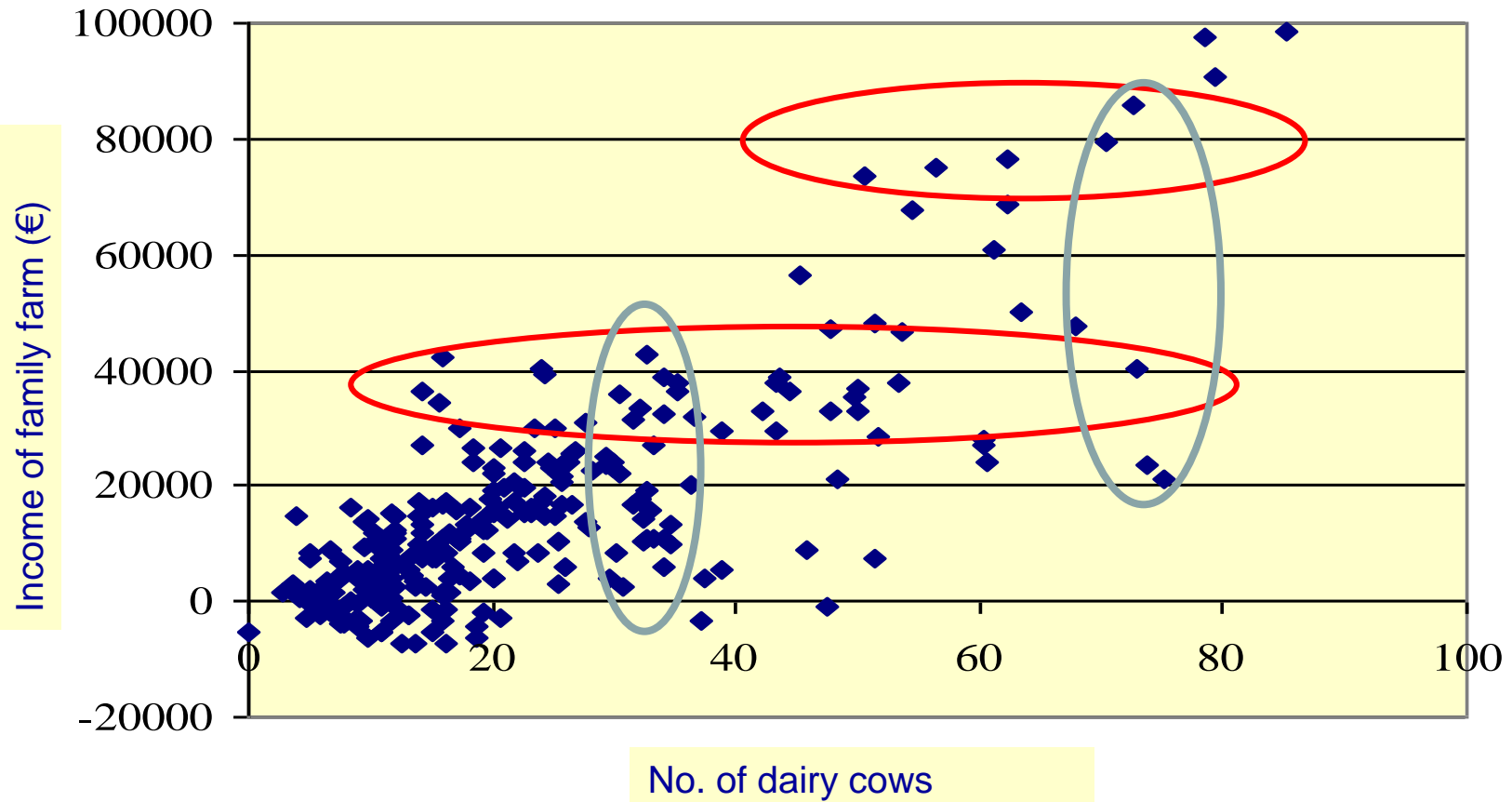


Overview of the dairy food chain



Opportunities at farm level

income / farm size



Diversification

- **Agricultural activities**

- Suckler cows
- Beef/pigs/sheep/goats
- Horses / bees
- Vineyards/horticulture
- Forestry...

- **Non-agricultural activities**

- Special local products
 - Milk & meat products
 - Oil, honey, ...
- Energy production
- Machinery services
- Agro-tourism
- Cottage industry
-



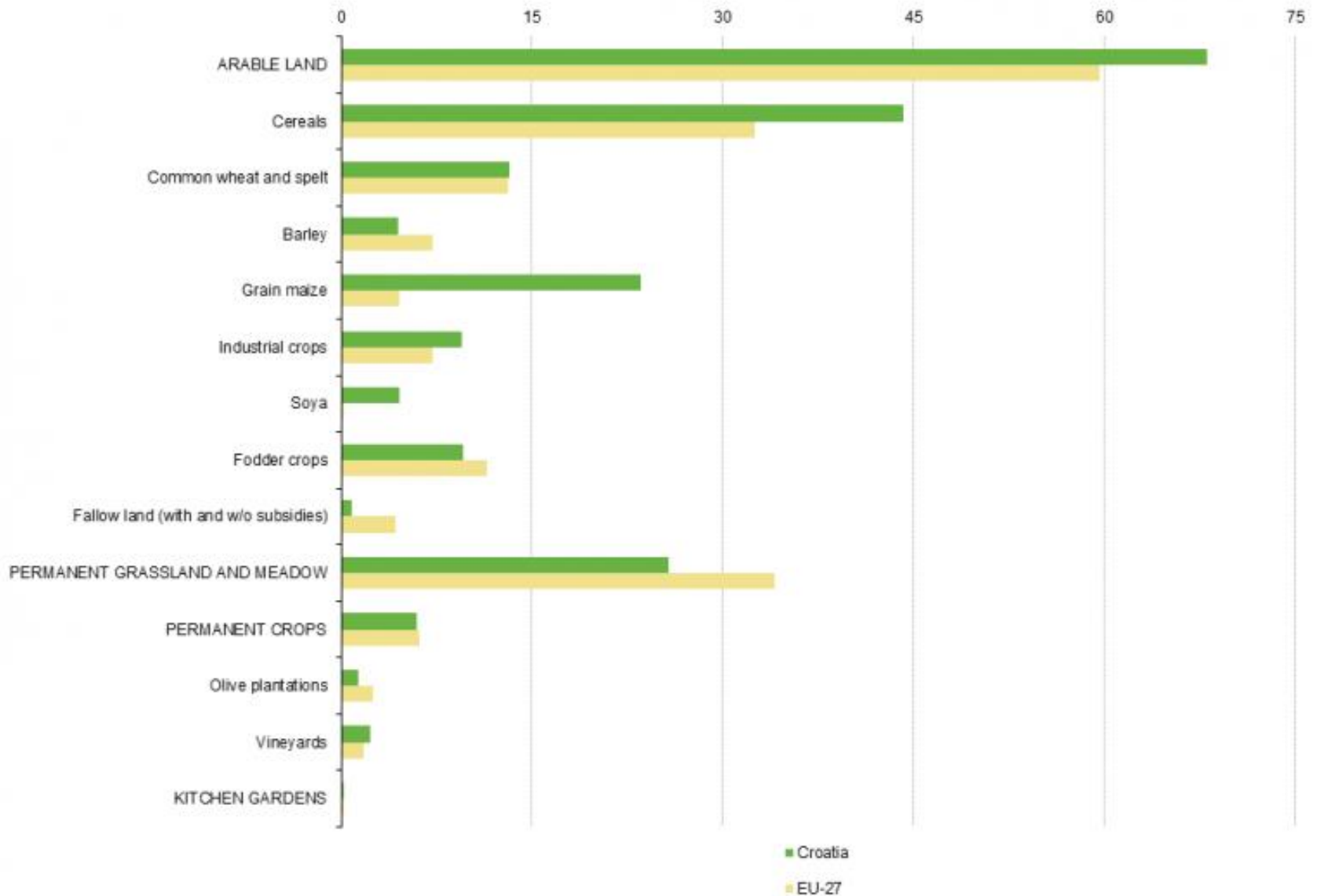
Government actions preparing sector for challenges ahead in **Slovenia**

- **Land policy** – encourage land consolidation
- **Technical and institutional modernization**, aimed at increasing productivity and efficiency in the chain;
- **Regional policy** – support farming in less-favored areas by encouraging farming with nature conservation and/or tourism;
- **Rural development programs** – aimed at creating non-agricultural employment in rural areas

Take home message - Slovenia

- Spatial distribution of milk production in Slovenia is relatively stable
- Milk price is low compared to EU-15 countries; this stimulates sale of milk to Italy
- Dairy farmers are more economically oriented than Suckler and Cika cow farmers;
- Dairy farmers give a high priority to the management of grassland; Cika farmers are more nature minded.
- High output in valleys (mostly dairy), low in/output in hills and mountains
- For Slovenian dairy farmers, cooperation among the farmers and in the chain, and diversification are also important development paths besides specialisation in dairy
- Interest in ecological farming is lower than expected
- Land and labour availability and land fragmentation are the biggest problems for all segments of farmers
- Strengthening of the dairy chain is a key factor for success!

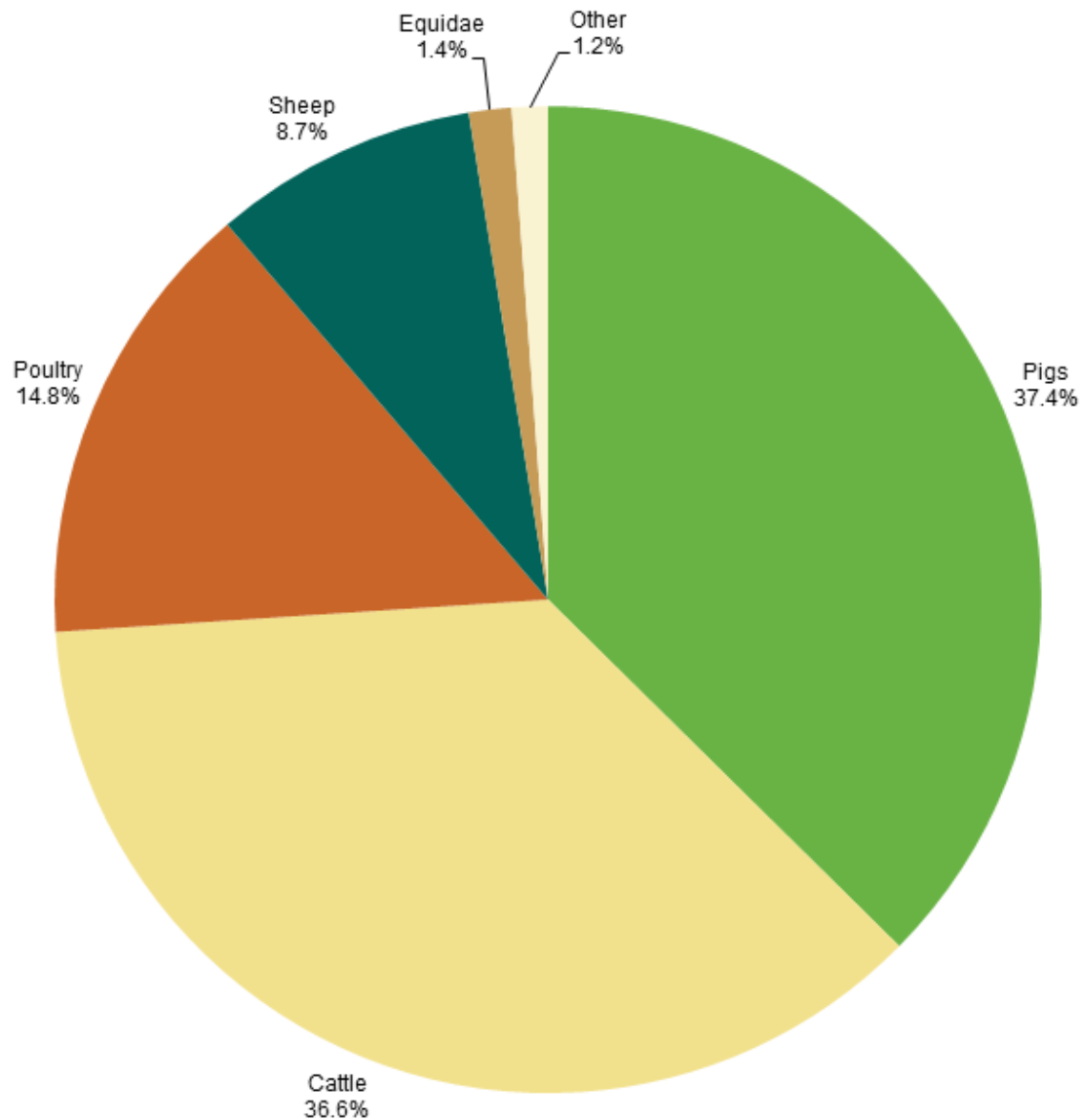
Agricultural land use in Croatia



Livestock production in **Croatia**

- to the **nineties of the twentieth century animal production** was largely covered needs of food industry and domestic consumption
- during the last two decades, **significant changes** happened:
 - specialization and intensification of production, improving of active technologies, enlargement of production units, ...
 - through new quality standard, liberalization of market, ...
 - through creating recognizable trademarks, traceability, ...
- **liberalisation** of the food product market **increased the demand for competitiveness and distinctiveness** of national animal production
- **consumers' attitudes** have changed significantly during the last two decades, and today, the **hygienic safety, traceability and origin of the product** have become essential criteria

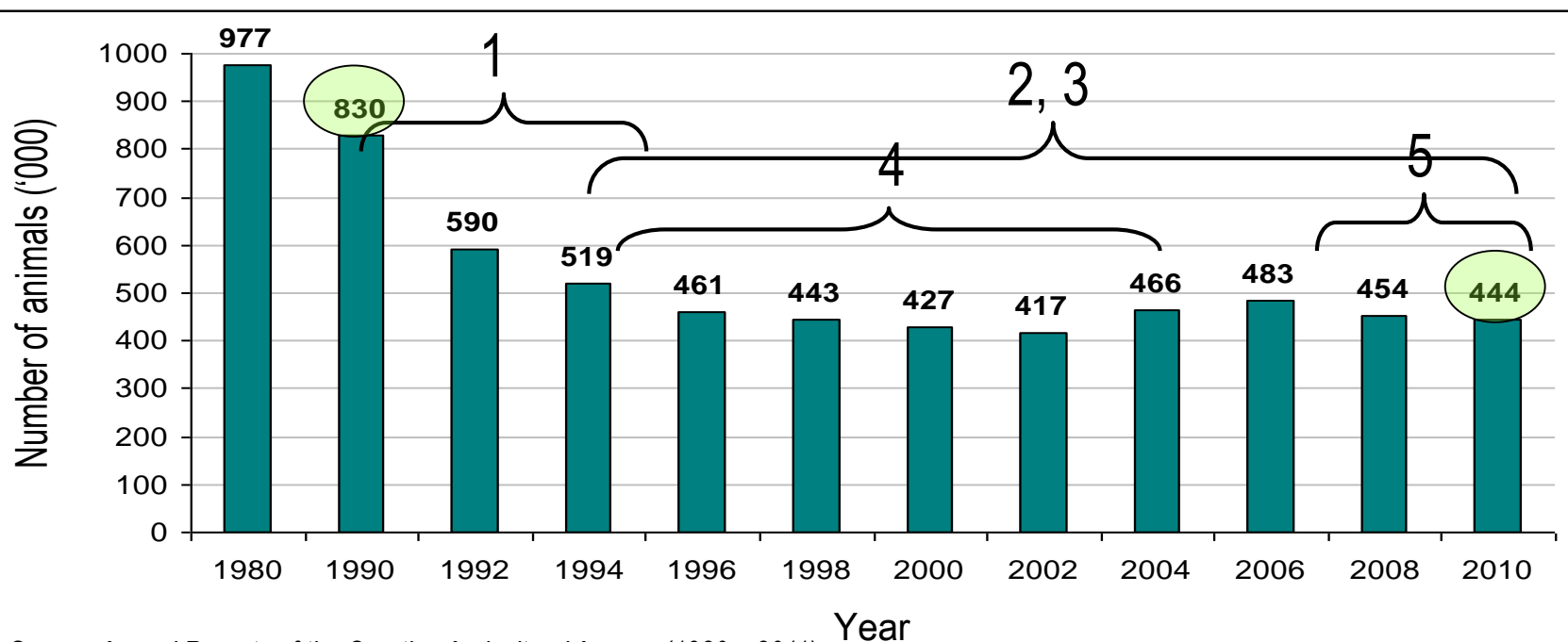
Livestock in Croatia, % based on 1,0 mio LU



Cattle population

Reason for change

1. war
2. liberalization of market, trade with genetic material
3. depopulation of rural area, loose of interest for animal production
4. change of organizational structure of farm
5. relationship between prices input (fuel, feed) : output (milk)



Source: Annual Reports of the Croatian Agricultural Agency (1980 – 2011)

Production system

- **Traditional system of milk production**
 - traditional technology, low investment, low production
 - produce milk and meat mainly for their own purposes
- **Modernized traditional system of milk production**
 - improved technology, medium level of investment
 - modernized traditional system involves small dairy farms, up to 15 cows
- **The system of small conventional dairy farms**
 - Harmonized technology, medium to high levels of investment, a market-oriented commodity production
- **Specialized system of large dairy farms**
 - larger herds, modern technology, high investment, production >7000 kg lactation
 - Holstein, Brown Swiss
 - competitive milk production
 - milking, feeding and other working operations are automated

Take home message - Croatia

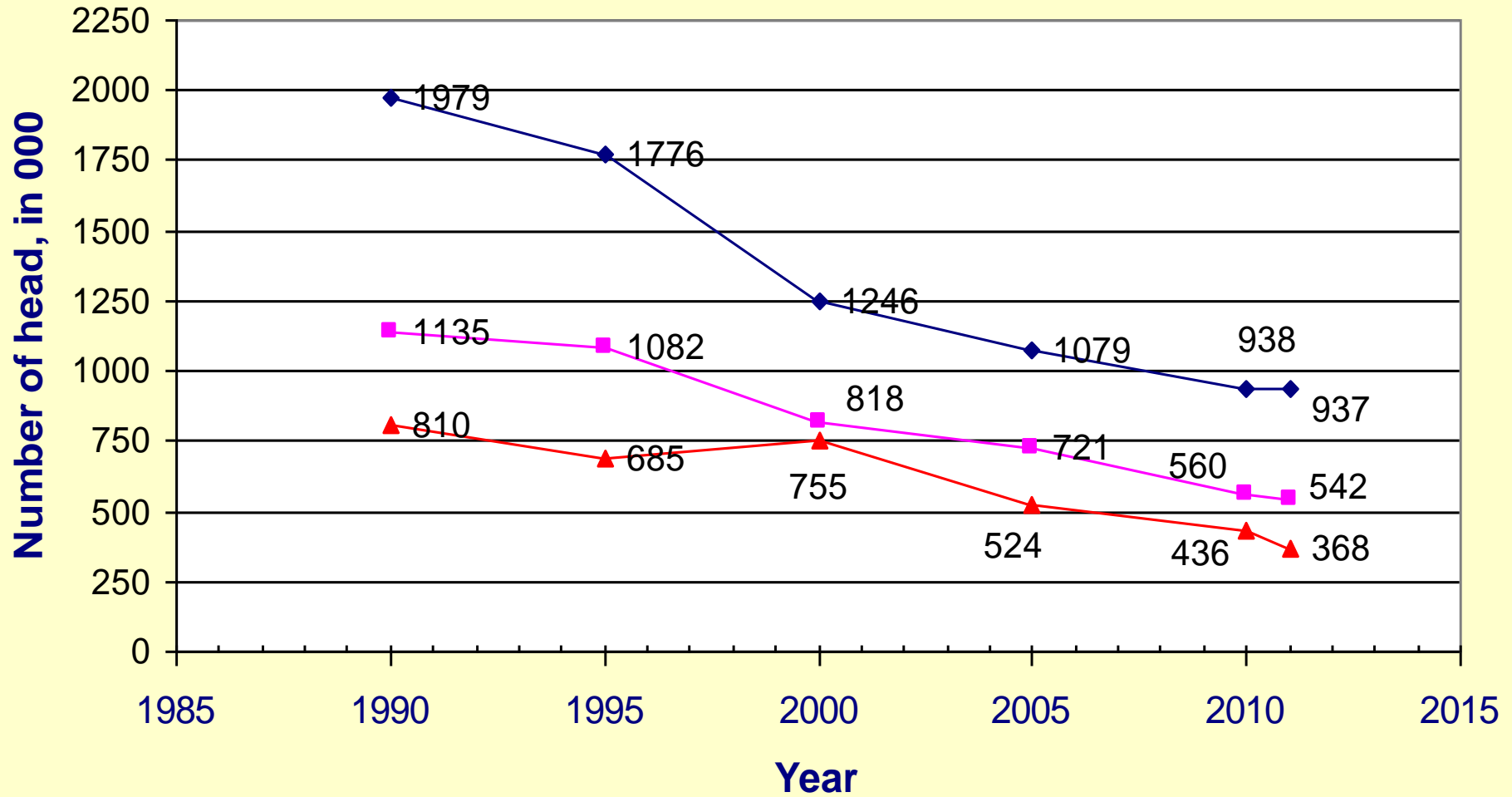
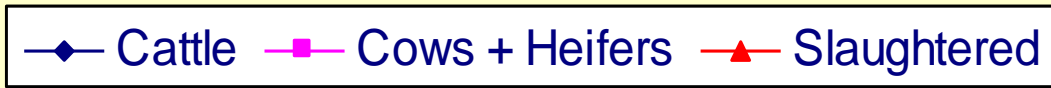
- decrease of dairy cattle number had no significant effect on produced milk quantity, while had negative effect on quality beef calf number
- sheep milk is processed in quality cheeses, and as valued-added product is placed on market
- standard models of sheep and beef meat production are recognisable on national level, but they need to undergo quality standardization due to appropriate



- In Serbian agricultural production **70% comes from plant** and **30% from livestock production**;
- Within livestock production, the share of **cattle sectors is about 43%**;
- The share of **cow's milk** in the total value of livestock production is **25%**, while share of **beef production is 17.6%**.



Number of cattle



PROSPECTS FOR FUTURE SECTOR DEVELOPMENT

FARMERS' PERSPECTIVE / RESOURCE AVAILABILITY

- The **farmers ways** for the improvement of production:
 - increase in the number of animals / increase of the farm capacities,
 - adaptation of farm facilities and improvement in the conditions of nutrition, housing and care,
 - animals genetic improvement,
 - more favourable bank credit terms and regulation of the situation on the market;

Objectives and visions of future agricultural and rural development in Serbia

- **dynamic and competitive agricultural farms**, operating according to modern and environment-friendly standards;
- **a profitable processing industry**, capable of manufacturing products of high demand for domestic and international markets;
- **rural areas** to maintain its attraction for people to live and work in, and at the same time evolve their own identity.

Farming conditions of the R. of Macedonia

- Good climate and relatively good soils offer comparative advantage for accomplishing high yields in agricultural production
- Half of the territory (50.8%) is used for agriculture, split almost equally between arable and pastures
- A cattle breeding is in very strong competition with vineyard, vegetable and fruit production, from one side, and with small ruminant production on hill-mountain area, in the other side

Milk production



- In the R. of Macedonia there are 87 registered dairy plants
- Annually processed around 150.000 tons of milk
- From totally 45.127 dairy farmers, only 11.000 farmers (24,33 % i.e. one of four farmers) has delivered his milk to the milking plant
- The larger dairy farms with more than 200 cows per farm, are still the nucleus of high-performance cattle, mainly for Holstein breed of cows

Perspectives of Macedonian agriculture

- Ecological clean land for organic agriculture;
- Mixture of nations, religions, climate, cultures, etc.
- Organizing of farmers in Associations;
- Growing domestic market and consumption level for milk and meat products
- Use of domestic products: cheese, meat, fruit, vegetable, grape, wine, rakija, ...
- Development “niche” products for both domestic and export market
- Ability to create new EU approved slaughtering/processing facilities

➤ **Constraints and challenges**

- Structure: many small farms and small plots
- Strong decline during last years in cattle, sheep and goats population
- Milk and meat processing industry are in several locations not very well developed which has impact on farm gate prices (low capacities of processors)
- Livestock farmer organizations and services need further development

➤ **Opportunities**

- Livestock sector has long tradition, particularly rearing of ruminants
- EU accession perspective / IPARD / Agri-Environmental Measures
- Programmes to preserve traditional animal breeds
- Domestic and export markets for products from ruminants
- Serbia and Croatia beef production with maize
- Grassland-based ruminant production system in Slovenia

Simulation of the Development of a Mountain Landscape (Kucan & Simonic):



Dairy farming determines landscape



Decline of biodiversity if dairy farming disappears



Thank you for your attention! HVALA!