AN ASSESSMENT OF EFFICIENCY AND PROSPECTS FOR DAIRY AND BEEF SECTORS IN SERBIA

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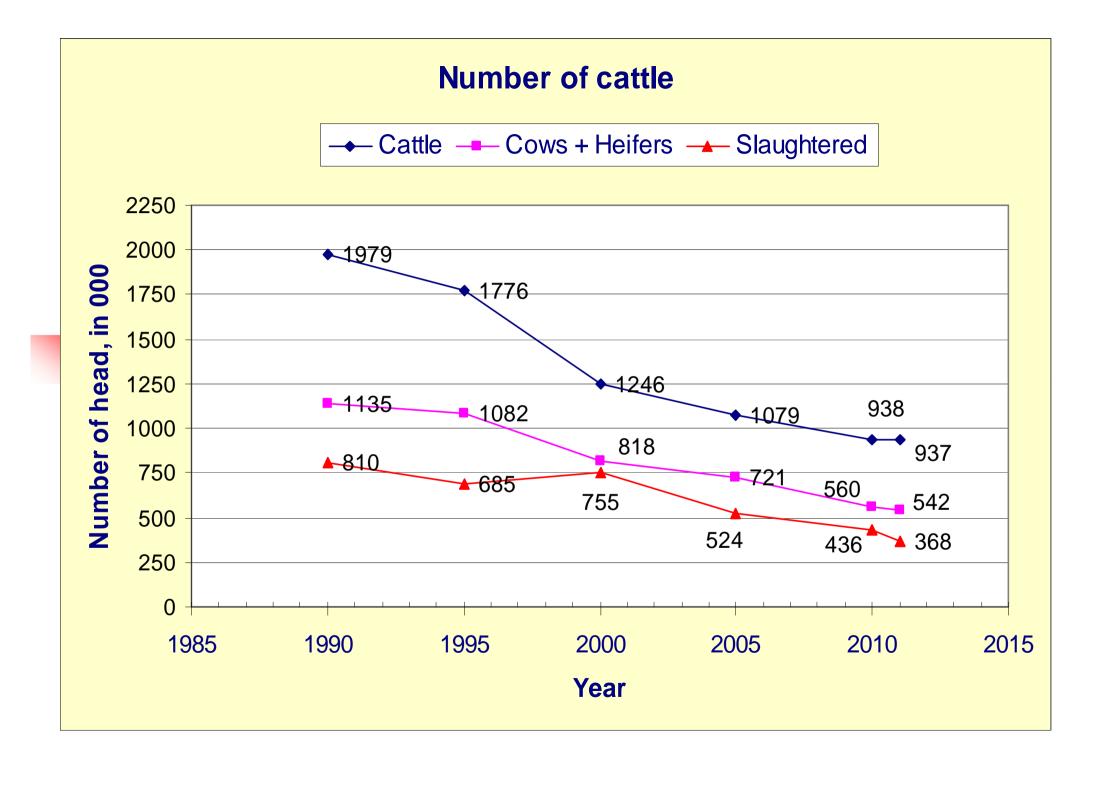
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CONTENT OF PRESENTATION:

- □ Short introduction
- Material and methods surveys
- Main findings from surveys farm level
- □ Prospects for future sector development:
 - > From farmers' perspective
 - > From resource availability
 - > SWOT analysis
 - Measures to be taken

BASIC DATA

- Serbia has 5.1 mil ha of agricultural land;
- 3.3 mil ha of arable land;
- 0.84 mil ha of pastures;
- 0.61 mil ha of meadows;
 - 85% of agricultural land is private, while 15% belongs to the state or co-operatives;
 - O Rural areas cover 85% of the territory of Serbia with 55% of the population creating over 40% of the GDP



| Basic National | Year | | | | |
|--|------------------------------|------------------------------|------------------------------|-------------------------|-------------------------|
| Indicator (<u>www.stat.gov.rs</u>) | 2007 | 2008 | 2009 | 2010 | 2011 |
| GDP (Gross Domestic Product) – Agricultural sector (mil €) | 2,380.3 (8.36% of GDP) | 2,845.5 (8.71% of GDP) | 2,254.1 (7.78% of GDP) | Not available yet | Not available yet |
| GDP – Total national economy (mil €) | 28,467.9 | 32,668.2 | 28,956.6 | 28,006.1 | Not available yet |
| Gross output milk production in % of Gross Agricultural Output (GAO) | 15.00 | 15.69 | 14.52 | Not available yet | Not available yet |
| Gross output beef production in % of GAO | 12.15 | 11.44 | 13.62 | Not available yet | Not available yet |

- 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%.

SURVEY RESEARCH (1)

- In order to have a more precise description of cattle/dairy farm systems in Serbia, a survey was directed at a select group of farmers;
- 1180 questionnaires have been mailed to farmers whose farms are registered for cattle, sheep, goat or mixed production.
- All the addresses to which the questionnaires were sent were obtained from the Ministry of Agriculture and from the Agricultural Extension Service;
- By sample, based on random choice of farms within statistical regions, the whole territory of Serbia was covered, except for the region of Kosovo and Metohia.

SURVEY RESEARCH (2)

- Questionnaire was divided into 6 sections:
 - 1. General information about farm & farmer
 - Year of birth, education, additional sources of incomes etc.
 - 2. Technical and structural information,
 - Farm tenure, farm size, number of animals etc.
 - 3. Education and advisory services,
 - 4. Perspectives for future activities,
 - Benefits of EU membership, way to expand production etc.
 - 5. Sanitary, veterinary and zoo-technical aspects
 - Production parameters, husbandry management, feeding management, reproduction etc.

SURVEY RESEARCH (3)

- Of a total of 1180 questionnaires, 209 responses were received;
- After basic data filtering and manipulating, a total of 153
 questionnaires were analysed.

MAIN FINDINGS FROM SURVEY (1)

FARM TANURE AND FARM SIZE – OWNED AGRICULTURAL AREA

- 95% of farms are privately owned, while 5% are cooperatives or (still) state owned;
- According to Census from 2001, the average farm size in Serbia is about 3.2 ha;

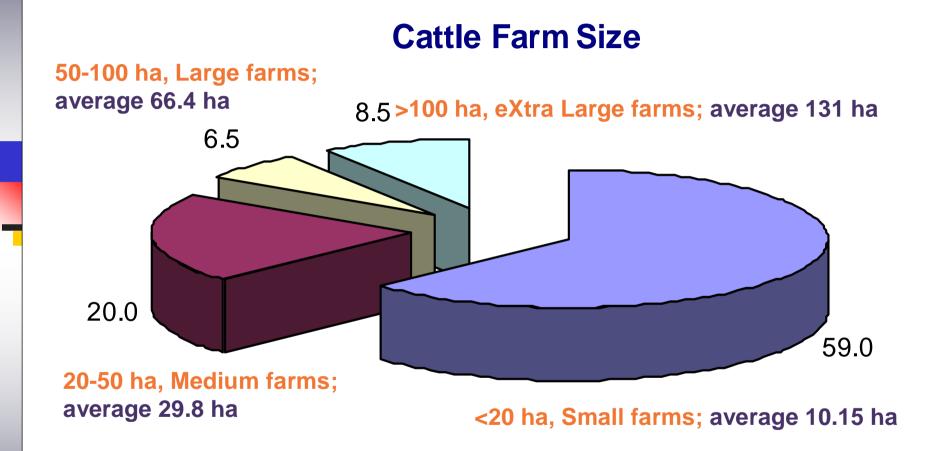
| Share in % | Number of owned ha from survey | | |
|------------|--------------------------------|--|--|
| 76 | <=20 (Small size farms) | | |
| 9 | 20-50 (Medium size farms) | | |
| 5 | 50-100 (Large size farms) | | |
| 3 | >100 (eXtra Large size farms) | | |
| 7 | Unknown | | |

MAIN FINDINGS FROM SURVEY (2)

FARM SIZE - TOTAL UTILIZED AGRICULTURAL AREA

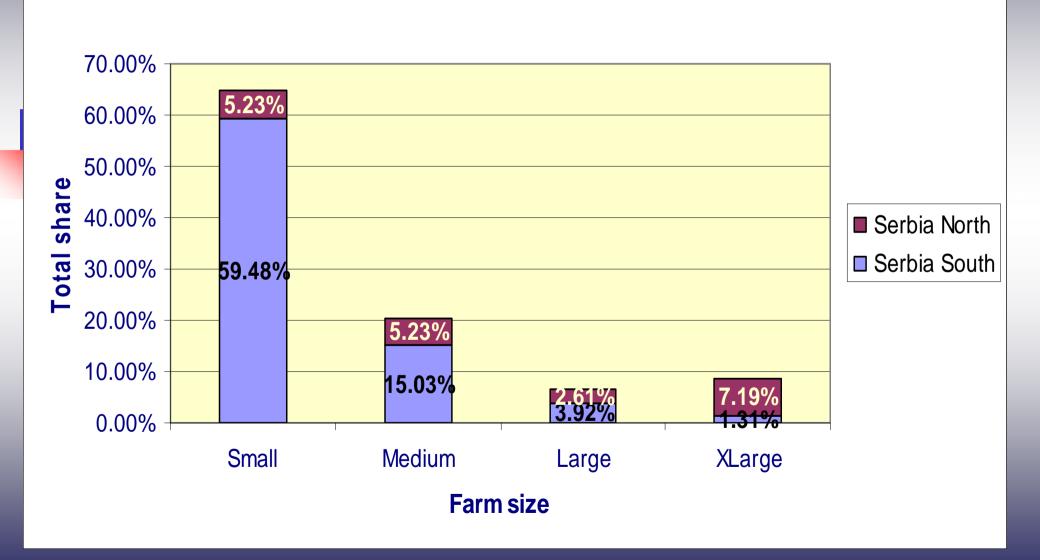
- From this survey, cattle farms are larger than average farm;
- The average total farm size is about 18ha (total size is consisting of owned and rented land);

MAIN FINDINGS FROM SURVEY (3)



MAIN FINDINGS FROM SURVEY (4)





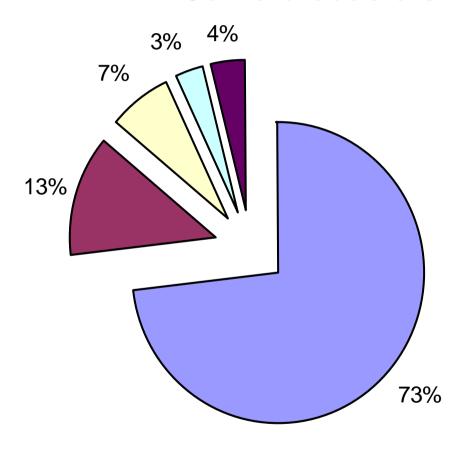
MAIN FINDINGS FROM SURVEY (5)

NUMBER OF CATTLE AT FARM

| Share in % | Number of cows and heifers at farm | |
|------------|------------------------------------|--|
| 55 | <15; average 6.3 heads | |
| 15 | 15-30; average 22 heads | |
| 5 | 30-100; average 55 heads | |
| 8 | >100; average 220 heads | |
| 17 | Unknown number of cows and heifers | |

MAIN FINDINGS FROM SURVEY (6)

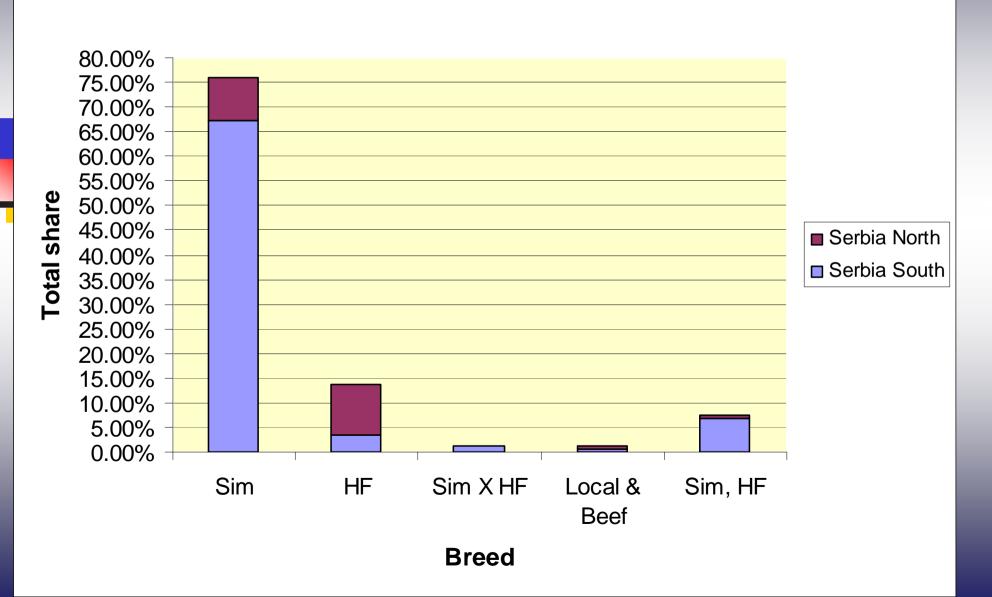
Cattle breeds distribution in Serbia



- Simmental
- Holstein
- Both breeds
- □ Local and beef breeds
- Unknown

MAIN FINDINGS FROM SURVEY (7)





MAIN FINDINGS FROM SURVEY (8)

SOURCE OF FARM INCOME

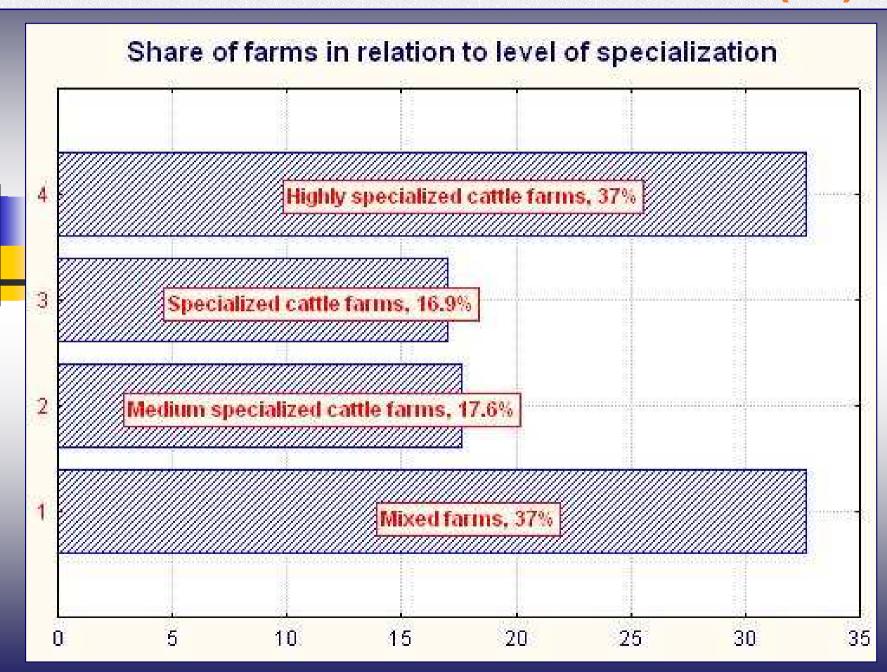
- For 75% of farmers the agriculture is the only source of income;
- 25% of farmers have some other sources of income (mainly trade or agricultural services);

MAIN FINDINGS FROM SURVEY (9)

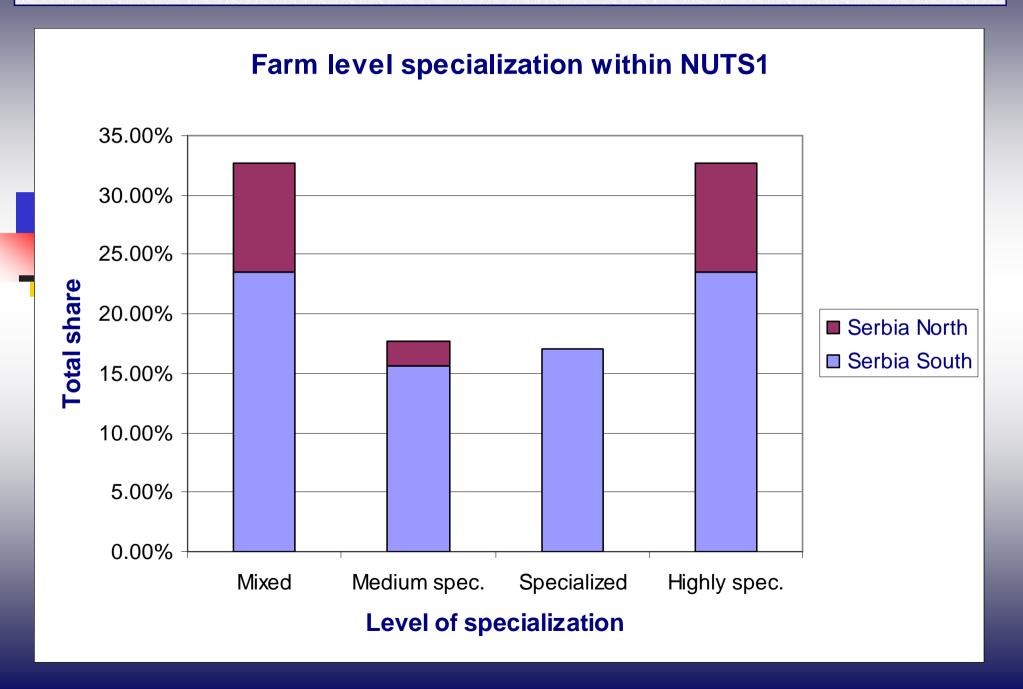
LEVEL OF FARM SPECIALIZATION

- Level of cattle farm specialization:
 - Mixed farm: up to 50% of total income from dairy/beef production,
 - Medium specialized cattle farms: 50-70% of total income from dairy/beef production,
 - 3. Specialized cattle farms: 70-85% of total income from dairy/beef production,
 - 4. Highly specialized cattle farms: more than 85% of total income from dairy/beef production

MAIN FINDINGS FROM SURVEY (10)



MAIN FINDINGS FROM SURVEY (11)



MAIN FINDINGS FROM SURVEY (12)

LEVEL OF FARM SPECIALIZATION

- For 2/3 of all specialized farm, cattle production is main source of farm income:
 - average share of milk production in total farm income is about 58%,
 - average share of beef production in total farm income is about 39%.
- For mixed farm:
 - average share of milk production in total farm income is about 22%,
 - average share of beef production in total farm income is about 23%.

MAIN FINDINGS FROM SURVEY (13)

BASIC ZOOTECHNICAL DATA

- Age at first conception: 15-16 months;
- Age at first calving: 24-25 months;
- Age at last calving: HF 8 years, Sim 9 years;
- Weaning age: 2.5 months;
- 92% of farmers prepare their own animal feed (at least partially), while 55% purchased ready-made animal feed from feed manufacturers;

MAIN FINDINGS FROM SURVEY (14)

BASIC ZOOTECHNICAL DATA

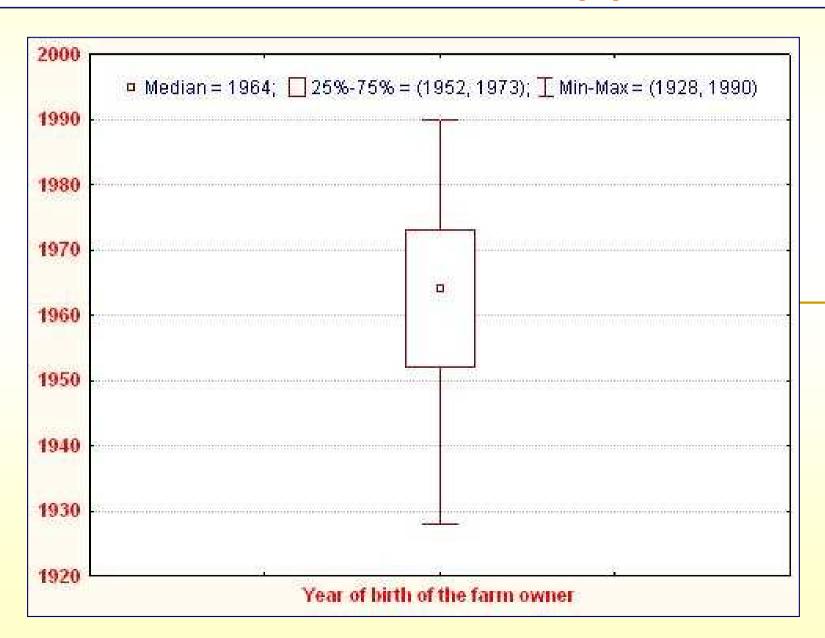
- Average milk production/cow/year in kg in controlled herds:
 - ➤ HF: ≈ 7800 kg, 3.55% fat content;
 - Sim: ≈ 4600 kg, 3.94% fat content;
- Average SCC: ≈ 310,000
- Average milk purchase price in Eur/100kg at farm gate (without subsides): 24.19 €

PROSPECTS FOR FUTURE SECTOR DEVELOPMENT (1)

FARMERS' PERSPECTIVE / RESOURCE AVAILABILITY

- About 149,000 farms are more or less involved in dairy production;
- For future sector development very important are:
 - the age of owner,
 - contact with Agricultural Extension Services,
 - willingness for applying new technological solutions,
 - Ministry support,
 - availability of bank credits or other financial sources.

PROSPECTS FOR FUTURE SECTOR DEVELOPMENT (2)



PROSPECTS FOR FUTURE SECTOR DEVELOPMENT (3)

FARMERS' PERSPECTIVE / RESOURCE AVAILABILITY

- About 71% of farmers have regular contact with Agricultural Extension Service, while 23% of farmers have "time-to-time" contact;
- 75% of farmers have expressed a positive expectation from the future membership of Serbia in EU, although these expectations are not clearly defined;
- Over 86% farmers intend to expand or improve cattle production in the short term, while about 6.5% had no such intention;

PROSPECTS FOR FUTURE SECTOR DEVELOPMENT (4)

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;

SWOT ANALYSIS

| Farm Strengths | Farm Weaknesses |
|--|--|
| Family business, Good natural conditions, Tradition in dairy farming, Fast growing middle-sized family cattle/dairy farms, Dairy farm companies with specialised production. | No cooperative action between farmers, Not enough high level of specialisation, Low yield and low milk quality level, Obsolete buildings, mechanisation and milking technology. |
| Farm Opportunities | Farm Threats |
| National (from Ministry) & EU grants, Future EU subsidies, Dairy development projects and investments in dairy sector, Infrastructure development in rural areas. | EU requirements, Further input price increases, Labour migration, Climate change. |

HOW DO FARMS NEED TO CHANGE (1)

Become bigger:

> implies more effective cattle farms.

Increase yields:

implies changes in genetic value, breed structure, feeding, calving index & overall management.

Increase milk and gain production per kg concentrate:

implies improvement in forage management & better ration formulation as well as better feed conversion.

HOW DO FARMS NEED TO CHANGE (2)

Improve hygiene:

implies not just housing & hygiene, but also health care, welfare, milking conditions, cooling.

Improve environment:

implies more effective management and utilisation of manure and silage effluent.

HOW DO FARMS NEED TO CHANGE (3)

What investments are needed:

- More cattle of appropriate genetic value / potential;
- Bigger and better buildings & equipment for cattle, milking and milk storage;
- > Better farm, forage & feeding machinery;
- Better storage for manure & silage.

HOW DO FARMS NEED TO CHANGE (4)

What training & advice is needed:

- > Feeding & nutrition,
- Forage production & conservation,
- Genetic improvement,
- > Fertility management,
- Milk hygiene,
- Management & marketing.