An outline of the ruminant livestock industry in Hungary

(structure of the livestock industry and future priorities for the sector in Hungary)

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CHANGES OF CONSUMPTION AND TRADE OF ANIMAL PRODUCTS
Changes of the food consumption (kcal/person/day)

Source: Alexandratos (2006)

http://rstb.royalsocietypublishing.org/content/365/1554/2793.full
## World wide trends of meat and milk consumption

Source: WB

<table>
<thead>
<tr>
<th>Region</th>
<th>1983</th>
<th>1997</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumption (million tons)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed countries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>32</td>
<td>30</td>
<td>34</td>
</tr>
<tr>
<td>Hog</td>
<td>34</td>
<td>36</td>
<td>39</td>
</tr>
<tr>
<td>Poultry</td>
<td>19</td>
<td>28</td>
<td>38</td>
</tr>
<tr>
<td>Total meat</td>
<td>88</td>
<td>99</td>
<td>114</td>
</tr>
<tr>
<td>Milk</td>
<td>233</td>
<td>254</td>
<td>276</td>
</tr>
<tr>
<td>Developing countries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle</td>
<td>16</td>
<td>27</td>
<td>52</td>
</tr>
<tr>
<td>Hog</td>
<td>20</td>
<td>46</td>
<td>80</td>
</tr>
<tr>
<td>Poultry</td>
<td>10</td>
<td>29</td>
<td>67</td>
</tr>
<tr>
<td>Total meat</td>
<td>50</td>
<td>112</td>
<td>213</td>
</tr>
<tr>
<td>Milk</td>
<td>122</td>
<td>198</td>
<td>372</td>
</tr>
</tbody>
</table>
Meat consumption trends in the EU

Consumption (kg/head): of which pork 50%, poultry 25%

Source: European Commission, 2006
Food supply of the central European countries (2006-2011)

Source: Faostat

Slowly decreasing energy in Hungary!
Main characteristics of animal products in Hungary

Production and trade of raw materials and animal products in Hungary
Livestock numbers in Hungary, 1901-2010

Animal unit nr / 100 ha agricultural area
Structure of the Hungarian livestock production, 2013 (%)

- Milk: 21.7%
- Egg: 6.8%
- Poultry: 30.8%
- Pig: 27.4%
- Other animal products: 3.3%
- Other live animal: 1.4%
- Sheep and goat: 2.2%
- Cattle: 6.4%

Source: HCSO, AKI
Change of the structure of Hungarian agriculture (2003-2013)

Crop production  Animal husbandry  Agricultural services, non-agricultural secondary activities

Source: HCSO
Livestock production of Hungary (1000 t)

Source: FAOSTAT
Number of animals per 100 hectares of agricultural area by species
2000-2013 (pieces)

Source: HCSO
Food security issues, consumers’ habits in Hungary
The share of consumer spending* on food in Hungary

2000 – 2012

- Fiscal austerity
- Economic crises
- Food price inflation
- Changes in the structure of consumption

Per capita consumption of
- pigmeat: -22.5% (24.5 kg in 2012)
- poultry meat: -24.6% (25.4 kg in 2012)

The level of consumer incomes has a significant impact on the demand for food

* Based on the classification of individual consumption according to purpose (COICOP)

Data source: Eurostat
Daily protein consumption per capita by origin, 2000-2012 (g)

Source: HCSO
Composition of daily protein consumption per capita by source 2012

- Meat: 32%
- Fish: 7%
- Milk: 16%
- Sugar and honey: 30%
- Mill and rice: 2%
- Potato: 5%
- Other vegetal food: 2%
- Fruits and vegetables: 4%

Source: HCSO
Meat consumption per capita 2000-2012 (kg)

Source: HCSO
Number of professional livestock producers at the time of farm structure surveys

Source: Research Institute of Agricultural Economics, Hungarian FADN
Change in return on total output

Source: Research Institute of Agricultural Economics, Hungarian FADN
## Policy measures

### Subsidy per animal head by species in Hungary, 2013 (€/head)

<table>
<thead>
<tr>
<th>Animal</th>
<th>Subsidy (€/head)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>203,2755263</td>
</tr>
<tr>
<td>Pig</td>
<td>7,396473737</td>
</tr>
<tr>
<td>Poultry</td>
<td>0,560620557</td>
</tr>
<tr>
<td>Goat &amp; Sheep</td>
<td>12,120573</td>
</tr>
</tbody>
</table>
Cattle: 154,4894 Million €
Dairy cattle: 64,9%
  EAFRD – Animal welfare in the dairy sector: 13,7%
  National milk subsidy: 17,3%
  Support of dairy sector due to aflatoxin contamination: 0,007%
  School milk programme: 4,9%
  Special dairy premium: 29%
Beef cattle: 35,1%
  Ruminant restructuring: 22,2%
  Cow – linked to production: 7,7%
  Beef cattle – decoupled: 4%
  Extensification payment for cattle: 1,2%
  Cattle export: 0,002%

Pig: 22,10806 Million €
  Animal welfare payment: 98,8%
  Support for strategic measures improving the situation of pig sector: 1,2%
Poultry: 21,60968 Million €
  Animal welfare payment: 87,3%
  EAFRD modernization of poultry farms: 10,6%
  Live poultry meat export: 2,1%
  Egg export: 0,0012%

Sheep and goat: 15,44161 Million €
  Ruminant restructuring: 58,9%
  Ewe subsidy: 5,9%
  Additional ewe husbandry support–decoupled: 4,9%
  Ewe de minimis: 27,2%
  She-goat de minimis: 0,99%
  EAFRD – electronis tagging of sheeps and goats: 2,1%

Other subsidies: 201,0123 Million €
  Husbandry tasks: 1,3%
  Prevention and overcoming of certain animal diseases: 9,1%
  Subsidy for the removal and disposal of animal corpse: 2,9%
  Animal and plant indemnification (uncapped appropriation): 1,5%
  EAFRD modernization of animal farms: 73,7%
  Subsidy for breeding of indigenous farm animals: 1%
  Prevention and elimination of certain animal diseases: 1,5%
Domestic food price volatility index, 2009-2013

- France
- Germany
- Hungary
- Italy
- Netherlands
- Poland
- Romania
- Slovakia
- Slovenia
- Spain
- United Kingdom
- Ukraine
- Ukraine
Environmental effects of livestock production
Global estimates of emissions by species

<table>
<thead>
<tr>
<th>Species</th>
<th>Million tonnes CO₂-eq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef cattle¹</td>
<td>2,495</td>
</tr>
<tr>
<td>Dairy cattle²</td>
<td>2,128</td>
</tr>
<tr>
<td>Pigs</td>
<td>668</td>
</tr>
<tr>
<td>Buffalo</td>
<td>618</td>
</tr>
<tr>
<td>Chickens</td>
<td>612</td>
</tr>
<tr>
<td>Small ruminants</td>
<td>474</td>
</tr>
<tr>
<td>Other poultry</td>
<td>72</td>
</tr>
</tbody>
</table>

¹ Includes emissions attributed to edible products and to other goods and services, such as draught power and wool.
² Producing milk and meat as well as non-edible outputs.

Source: GLEAM.
Share of agriculture in greenhouse gas emission in Central-Eastern-European countries, 2004-2010 (%)
Density of cattles and buffaloes, 2011 (total/ha of agricultural land)

Source: FAO
Density of pigs, 2011
(total/ha of agricultural land)

Source: FAO
Density of poultries, 2011 (total/ha of agricultural land)

Source: FAO
Density of sheeps and goats, 2011 (total/ha of agricultural land)

Source: FAO
Emission of all farm animals - CO2 equivalent, 2012 (Gigagrams)

Source:

FAO
Greenhouse gas emission by animal husbandry sector in Hungary, 2000-2012 (1000 tonnes of CO₂ eq.)

Source: FAO
Livestock density (heads/100 ha) in Western and Eastern Europe

Hungarian Scientific Academy, Csathó, 2011
Organic fertilization area and the amount of applied organic fertilizer in Hungary

![Bar chart showing the amount of organic fertilizer (t/ha) and organic fertilization area (1000 ha) for the years 2004 to 2010. The chart displays a decrease in amount of organic fertilizer from 2004 to 2007, followed by a slight increase in 2008 and 2009. The organic fertilization area remains relatively stable across the years.]

Source: HCSO, 2012
What are the consequences?

Statistics and explications

Aussie out on a date
Changes in the structure of pig fattening farms in Hungary & other EU Member States

No. of pigs for fattening
- >1000
- 100-1000
- <100

Data source: Eurofarm structure survey on total pigs
The development of pig numbers in Hungary since transition

1989 – 2013

Pigs: -38.7% vs 2003
Sows: -41.6% vs 2003

Data source: KSH
The development of slaughter pig prices in Hungary & other EU Member States

May 2004 – July 2014

◆ Johansen test results: prices are cointegrated

◆ local S & D factors are negligible in HU pricing

Data source: European Commission
Production cost and revenue of pig fattening in Hungary

2003 – 2013

Farms with over 500 pigs for fattening

- Feed cost
- Cost of piglets
- Other costs
- Direct subsidies
- Production value

* Preliminary

Data source: AKI FADN
The efficiency of pig farming in Hungary & in other EU Member States in 2012

- **Pigs reared / sow**
  - DE: 25.8
  - NL: 27.7
  - DK: 28.8
  - HU: 21.8
  - SK: 19.5

- **Daily live weight gain**
  - DE: 780
  - NL: 795
  - DK: 905
  - HU: 633
  - SK: 619

- **Feed conversion ratio**
  - DE: 2.85
  - NL: 2.60
  - DK: 2.70
  - HU: 3.33

Genetics and raising technology
Feed cost and feed quality
Climate conditions

Data source: BPEX, VUÉPP, AKI FADN (farms with over 500 pigs for fattening)
The dairy sector in Hungary

- Share in total agricultural output: 7%
- Share in agricultural export: 4%
- Number of employees: 26,000 (milk production) + 6,400 (dairy industry)
- Consumption of milk and dairy products: 175 kg/capita
- Share in food expenditures: 14.3%

Source: KSH, NAV, AKI
Structural changes of milk production in Hungary

Source: KSH, Eurostat, AKI
Structural changes of milk processing in Hungary

Market share (2012):
- Top 3: 37%
- Top 5: 55%
- Top 10: 78%

Source: KSH, NAV, AKI
Cost and revenue of milk production in Hungary

* Previous data

Source: KSH, AKI
Dairy outlook of the EU-28
2013-2022

Milk production: +3.1%
Exports of dairy products: +14.3%

Source: OECD-FAO
General problems in the livestock production

- Inherited history and dependency of state (government), missing relevant innovation and advisory services,
- Export subsidies on pig and poultry meat phased out before accession
- Due to substantial excess capacities, structural changes in the processing industry after accession
- Dynamic growth of imports of live animals as well as high value-added products since accession
- High feed grain prices since 2005/06 which are likely to persist in the mid-term
- Due to climatic conditions, cattle farming is not pasture based
- Outbreaks of animal diseases
- Increasing pressure on intra and extra EU markets by third countries
- Low and fluctuated producer prices
- Full or partial decoupling of direct payments
- Lack of capital for modernization to comply with EU environmental, animal-health and welfare requirements
- Due to demographic reasons, no increase in consumption expected, 27% VAT
- Less interest among the farmers producing animal products, no cooperation
- Stronger advisory and transparent product chains accountancy systems are needed
Conclusions and lessons to learn

Level of competitiveness! Innovation! Knowledge transfer-advisory services! Cooperation in the product chain?
Scale of economic? Process of concentration.
Less consumption of meat?
Decrease food losses?
Greener CAP based on producers and consumer consensus
Tailor made regulation is needed by countries
Different ways of thinking about environment?
Some ideas! (insects, vegetarian, biodiversity, ect.)
Which is easier to reduce?

- Beef & Dairy vital CO₂ emission
- CO₂ emission of raw milk transport and dairy product distribution

86% of milk is water!
Entomology? Is a solution?

- Entomofágia = „rovarevés”” eating insects”, (entomology)
- Increasing demand
- 2 billion people, source of protein
- 113 countries
- More than 2000 species
### Sustainable food supply: less products of animal origin

<table>
<thead>
<tr>
<th>Type of diet</th>
<th>Necessary land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetarian</td>
<td>500 m²</td>
</tr>
<tr>
<td>Dominant vegetarian</td>
<td>700 m²</td>
</tr>
<tr>
<td>Western</td>
<td>4000 m²</td>
</tr>
<tr>
<td>Riche in meat</td>
<td>7000 m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Total calorie</th>
<th>Animal origin calorie</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>3500</td>
<td>1400</td>
<td>40</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>3400</td>
<td>900</td>
<td>26</td>
</tr>
<tr>
<td>Poor</td>
<td>2000</td>
<td>80</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Martine Padilla IAMM

FAO
Some important indigenous breeds

Hungarian grey cattle

• Excellent meat quality
• Perfectly adopted to the extensive cattle farming in Hungarian climate
Mangalica pig

- Special quality meat
- Almost extincted in the 70’s

3 types:
- Blond
- Red
- Swallow-bellied
Sheeps

- Racka - most ancient
  2 types:
  - Hortobágy racka sheep
  - Gyimes racka sheep
- Cikta sheep
- Tsigai (Cigája) sheep

Almost extincted, but survived due to the state gene conservation program
Looking towards the future

Besides state subsidy, private cooperation is necessary because these breeds are essential in:

• Keeping national identity
• Economic value laid in those genetic potential
• Education
• Arts
• Providing aesthetic value
Summary

Why to insist indigenous breeds in 21st century?

• One reason is the same why we protect old buildings, folklore, old artifacts
• From another point of view human kind is curious about the past
• It also has practical benefits
• Last but not least: We are proud of them
Biodiversity: our food supply depends on it?
Thanks for your attention!