Describe current situation in the agri-food sector in Croatia regarding main economic indicators and research policies
The report is based mainly on secondary quantitative data gathered from different sources, both from Croatian and European institutions. The report also includes a SWOT analysis of the sector. Interviews - experts from scientific community and managers who work in agro-food companies. Some data for the analysis were taken from previous research conducted by Faculty of Agriculture in Zagreb.
Overview of developments

- Since the year 1994 Croatia has been a net importer of agricultural products.

As a result of liberalization:
- value of Croatian exports of agricultural products is constantly rising
- Republic of **Croatia has become one of the biggest importers of food** in Europe (300.3 euro per capita) and in the world.

**2005 saw record imports** of agricultural and food products with imports of 1.30 billion euro and agri-food exports amounting to 743 million euro.
National agricultural policy

The majority of the national agricultural policy is implemented through two Acts – the *Agriculture Act* and the *Act on the State Aid in Agriculture, Fisheries and Forestry*.

The Act on State Aid in Agriculture, Fisheries and Forestry provides for four different state aid schemes intended for different target groups or aid beneficiaries.

**The schemes are:**
1. Production subsidy scheme (direct payments)
2. Capital investment scheme
3. Income support scheme
4. Rural development scheme
### Economic data of the agro - food sector

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population ‘000</td>
<td></td>
<td>4,381</td>
<td>4,437</td>
<td>4,443</td>
<td>4,442</td>
<td>4,439</td>
<td>4,442</td>
<td>4,441</td>
<td>4,441</td>
</tr>
<tr>
<td>GDP (in current prices)</td>
<td>mill. €</td>
<td>19.976</td>
<td>22.62</td>
<td>24.75</td>
<td>27.10</td>
<td>29.07</td>
<td>33.047</td>
<td>34.22</td>
<td>37.52</td>
</tr>
<tr>
<td>Agriculture, hunting, forestry and fishery</td>
<td>mill. €</td>
<td>1.473</td>
<td>1.670</td>
<td>1.793</td>
<td>1.571</td>
<td>1.678</td>
<td>1.780</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share In GDP %</td>
<td>%</td>
<td>7.37</td>
<td>7.54</td>
<td>7.33</td>
<td>5.99</td>
<td>5.91</td>
<td>5.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP (PPP)/capita €</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic growth (change in GDP) %</td>
<td></td>
<td>2,9</td>
<td>4,4</td>
<td>5,6</td>
<td>5,3</td>
<td>4,3</td>
<td>4,3</td>
<td>4,8</td>
<td>5,1</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>%</td>
<td>16,1</td>
<td>15,8</td>
<td>14,8</td>
<td>14,3</td>
<td>13,8</td>
<td>12,7</td>
<td>11,2</td>
<td>15,1</td>
</tr>
<tr>
<td>Inflation (yearly average) %</td>
<td></td>
<td>4,6</td>
<td>3,8</td>
<td>1,7</td>
<td>1,8</td>
<td>2,1</td>
<td>3,3</td>
<td>3,2</td>
<td>2,9</td>
</tr>
<tr>
<td>Share of food, beverages and tobacco in total household’s expenditures %</td>
<td></td>
<td>36,0</td>
<td>37,7</td>
<td>36,1</td>
<td>36,8</td>
<td>35,5</td>
<td>37,2</td>
<td>36,3</td>
<td>-</td>
</tr>
</tbody>
</table>
Since the year 2000, the national economic situation is characterized by significant economic growth.

2000 – 2007 Agricultural production together with forestry and fishery sector is increasing.

2000 – 2005 Share of stated sectors in total GDP is decreasing.

- Whole economy is forwarding much faster than agriculture (Ipard, 2007).
Croatia has large deficits for almost all primary agricultural products, except maize (+7.4 million euro), tangerines (+529 thousand)

- **Exports increased for the following agricultural products:**
  - tobacco,
  - sugar,
  - food complements,
  - fermented milk products and processed meat.

- **The most important exporting destinations**
  - the countries of the ex Yugoslavia, especially Bosnia and Herzegovina, EU Member States (Italy, Slovenia, Germany, Austria)

**The most important supplying countries (2007)**
- Italy, Germany, Brasil, and Hungary

- **The top five of the export are all processed agro-food products**
- 2007 - sugars & sugar confectionery (€157,727 mill.), miscellaneous edible preparations (€111,347 mio), Fish and crustaceans, Tobacco & tobacco products) and cereals
# Importance of agro-food trade in Croatia

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agro-food trade</strong></td>
<td>mill. €</td>
<td>1.187</td>
<td>1.447</td>
<td>1.621,6</td>
<td>1.738,2</td>
<td>1.744,8</td>
<td>2.023,4</td>
<td>2.422,4</td>
<td>2.533,0</td>
</tr>
<tr>
<td><strong>Agro-food exports</strong></td>
<td>mill. €</td>
<td>441,0</td>
<td>495,8</td>
<td>559,7</td>
<td>624,0</td>
<td>560,4</td>
<td>716,1</td>
<td>949,15</td>
<td>960,4</td>
</tr>
<tr>
<td><strong>Agro-food imports</strong></td>
<td>mill. €</td>
<td>746,1</td>
<td>951,4</td>
<td>1.062,9</td>
<td>1.114,2</td>
<td>1.184,4</td>
<td>1.307,3</td>
<td>1.473,3</td>
<td>1.572,6</td>
</tr>
</tbody>
</table>

## Share of agro-food trade in:

- **Total exports** % 9,2 9,5 10,8 11,4 8,7 10,1 11,2 10,6
- **Total imports** % 8,7 9,3 9,4 8,9 8,9 8,8 8,7 8,3

Source: CBS, DAES (Kumrić, Franić, 2007), CCE
Main Economic sub sectors

- **Cereals**
  - most significant sub-sector in 2007
  - with share of **GAO** of approximately **23%**.
  - 66% total arable surface in Croatia.
  - most important commodities in this sector (Maize (1,425,000 t produced in 2007) and wheat (812,000 t in 2007))
**Oil crops**
- Areas covered with oil crops in the last five years have been approximately 80,000 ha for one year.
- In the production structure, the most abundant is **soybean, than sunflower and oilseed rape**

**Fruits**
- production located on agricultural farms
- In 2007 the F&V sector represents 12 % of the GAO
- As for fruits, the most important are grapes followed by apples and plum
- home fruit production do not satisfy even 50% of domestic needs.

**Vegetables**
- potatoes are the most important, followed by cabbages and tomatoes.
Livestock production

Livestock contribution to the GAO was 47% in 2007.

Small production units prevail, especially for cattle; swine production; sheep; goat and horse keeping

**Pork production**

This production amounts to 12.18% in total agricultural production (small production units - over 85% farms are production units with up to 10 sows)

Self-sufficiency for pork in Croatia is around 80%
- **Cattle and beef production**
  - production is organised in the family farms (83%)

  Self-sufficiency for beef decreased from 83% in 2001 to around 75% in (2006.)

- **Poultry production**
  - amounts to approx. 7% of GAO, i.e. 18% of livestock production, and is self-sufficient (rate is 101%)

- **big production units**

- **Chicken production** represents the main production section (93%)
  - goose account to only (3%)

- **each duck and turkey productions represent (2%)**
Dairy sector

- share of dairy production in the Croatian agricultural GDP is **only 7.3%**
- *households with 3 cows per farm dominate*
- most Croatian milk is produced on family farms.
- *the production is expensive and insufficient to meet the needs of the dairy industry.*
- *domestic production covers* about 80% of the annual needs for milk and dairy products
- In the last years, the share of imported milk has decreased, while the import of high-quality dairy products has increased.
Research expenditures

Since 2000 - (GERD) is constantly growing, and despite some decline in 2004 (from 1.22% of GDP in 2004 to 0.93% of GDP in 2007. (gross domestic exp. on r&d)

Table 3 Some indicators of Research and Development (R&D) in Croatia, 2004

<table>
<thead>
<tr>
<th>Indicator</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total public expenditure on education as a percentage of GDP</td>
<td>4.53*</td>
</tr>
<tr>
<td>Gross domestic expenditure on R&amp;D (GERD), % of GDP</td>
<td>1.22</td>
</tr>
<tr>
<td>R&amp;D expenditure by sector, % of GDP</td>
<td></td>
</tr>
<tr>
<td>Business enterprise sector</td>
<td>0.51</td>
</tr>
<tr>
<td>Government sector</td>
<td>0.25</td>
</tr>
<tr>
<td>Higher education sector</td>
<td>0.45</td>
</tr>
<tr>
<td>Exports of high technology products as a share of total exports</td>
<td>11</td>
</tr>
</tbody>
</table>

* year 2003
Source: EUROSTAT

- high rate of investment in research and development (R&D)
- disproportion of investment between the public and the private sector
- R&D expenditure by the private sector is relatively low, 0.51% of GDP
Public research activities are dominantly financed by budget resources allocated by the Ministry of Science, Education and Sports (MSES) through the two main channels:

- institutional funding
- research projects

Science policy in Croatia is based on a horizontal approach in which all research areas should be treated equally in order to attain an equal level of scientific excellence.
The budget of the Research Projects programme in the total amount of HRK142.5 mill (€19.6m) in 2007 was distributed according to the six scientific fields as follows:

- Natural sciences - 25%
- Technical sciences - 23%
- Bio – medical sciences - 23%
- Bio – tecnical sciences - 12 %
- Social sciences - 9%
- Humanities - 8%
Main research infrastructure

The Croatian research and higher education system consists of:
- 7 universities,
- 26 public research institutes,
- 11 research centres in the industry sector,
- 16 public colleges and polytechnics,
- 16 private colleges and polytechnics which are accredited by the MSES

in the field of agri-food and agriculture:

**UNIVERSITY OF ZAGREB**
- Faculty of Agriculture
- Faculty of Food Technology and Biotechnology
- Faculty of Veterinary Medicine
- Faculty of Pharmacy and Biochemistry
- Faculty of Forestry
UNIVERSITY OF OSIJEK
- The Faculty of Agriculture
- The Faculty of Food Technology

UNIVERSITY OF SPLIT
- Department of Mediterranean Agriculture and Landscape
- Faculty of Chemical Technology

OTHER RELEVANT INSTITUTIONS (college and institute):
- The School of Professional Higher Education in Agriculture, Križevci
- Polytechnic College in Knin
- Institute for Adriatic Crops and Karst Reclamation in Split
- Institute for Agriculture and Tourism in Poreč

Public services in agriculture and food industry
- Veterinary institutions
- Croatian Livestock Centre

Plant production institutions
- Fruit Growing Institute
- Croatian Institute of Viticulture and Oenology
- Food safety institutions
- Croatian Agricultural Extension Institute (CAEI)
- Croatian Market Information System in Agriculture (TISUP)
Main activities of FAZ

- The FAZ organisation is based on 28 departments.
- More than 200 researchers are involved in scientific and research work.
- Most projects are funded by the MSES (2002-2007) - 93 research project, MAFRD, Projects Contracted with National and Regional Administration, Companies and Entrepreneurs.
- **Main activities**
  - Application of biotechnology in agriculture,
  - Application of geoinformatics science in agriculture,
  - New technologies for sustainable and renewable (organic) agricultural production,
  - New food production technologies,
  - Socio-economic and marketing analyses of Croatian agriculture, competitiveness of Croatian agriculture on the domestic and world markets.
- International projects (TEMPUS, FP6, 7, INTERREG, COST)
R&D priorities

- increase investment in this area,
- increase the efficiency of research in agro-food sector
- strengthen the cooperation with other scientists and institutions
- include Croatian agro-food researchers in European and other international research projects.

- Also, one of the priorities is to **strengthen the research infrastructure and to invest in human potentials in this research area.**

- These priorities and **foresight** are driven by general national development policy and tries to be in-line with other priorities set by the state agencies and ministries.
Agri food sector Research priorities

- competitiveness of agribusiness sector, namely family farms
- Rural development
- Environmental protection and climate change
- Modernization of agricultural production in order to achieve existing quality standard. Very often it is way to raise productivity (yields) from current (low level) to EU level.
- orientation toward organic agriculture
- Issues of food safety and quality assurances

- Role of social sciences are very important and therefore researches in the field of agricultural economics and rural sociology
Funding Programs at National level

Scientific research, technical and development projects are financed by several sources:

1. Ministry of Science and Technology,
2. Ministry of Agriculture, Fisheries and Rural Development (MAFRD) through the Council for Research in Agriculture (ARC) – CAEI
The ARC research is financed by the MAFRD through the Fund for Applied Research Development in Agriculture

Council for Research in Agriculture (ARC) in its regular annual tender for applied research projects in agriculture put following priorities:

1. Development and income and employment diversification on family farms in the function of rural development
2. Increase family farms’ competitive through innovation and new technologies
3. Influence of agro-ecology, economy and social conditions on the expansion of agriculture
4. Organic agriculture
In the period 1998-2004 ARC projects have encompassed following biotechnology fields:

- crop production (46 projects),
- horticulture (35 projects),
- family farms (45 projects)
- and organic production (27 projects).

Other fields like livestock production, genetics, food technology, fishery and legislation had a less significant share in ARC's projects.

In financial terms amount invested in the period 1998 to 2007 was about 7 million Euro.
As a candidate country, Croatia has obtained access to pre-accession funds

- PHARE
- ISPA
- SAPARD
- CARDS

Framework programmes (FP6, FP7) - according to the European Commission data, Croatia had signed 60 contracts co-financed by the European Commission (€5.8 million) by February 1, 2006.
From 2007 onwards “IPA - Instrument for pre-accession assistance for 2007-2013” was replaced PHARE, ISPA, Sapard, and CARDS.

IPA was contain five components:

I) Transition Assistance and Institution Building,
II) Cross-border cooperation,
II) Regional Development,
IV) Human Resources Development,
V) Rural Development.

In 2007 IPA replace Sapard and change name in IPARD (2007.).
Bilateral funding programs

- GTZ – Office for Economic Co-operation of the Republic of Germany
- EVD – The Dutch Government Agency
- Italian Act Nr. 84:
- SIDA – Swedish International Development Agency
- World bank projects
## SWOT chart for Croatian agri-food sector

### Strengths (S)

<table>
<thead>
<tr>
<th>SCIENCE</th>
<th>INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>high number of education institutions and centers</td>
<td>favourable production conditions (climate)</td>
</tr>
<tr>
<td>highly qualified staff (scientists)</td>
<td>production technology in some areas</td>
</tr>
<tr>
<td>R&amp;D programs and strategies</td>
<td>modern small scale food industries</td>
</tr>
<tr>
<td>Involvement in international projects</td>
<td>highly developed tourist market</td>
</tr>
<tr>
<td>Existing support centers for the development of the sector</td>
<td></td>
</tr>
</tbody>
</table>

### Weaknesses (W)

<table>
<thead>
<tr>
<th>SCIENCE</th>
<th>INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>inadequate programs of agro-food education</td>
<td>low competitiveness of small scale producers</td>
</tr>
<tr>
<td>underdeveloped sector of adult education</td>
<td>low compliance with EU safety and quality standards</td>
</tr>
<tr>
<td>low investment in educational infrastructure</td>
<td>insufficient organisation of production?</td>
</tr>
<tr>
<td>low number of available experts</td>
<td>negative trade balance in the sector</td>
</tr>
<tr>
<td>low networking of institutions</td>
<td>undeveloped distribution channels</td>
</tr>
<tr>
<td>Opportunities (O)</td>
<td>Threats (T)</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>SCIENCE</strong></td>
<td><strong>SCIENCE</strong></td>
</tr>
<tr>
<td>• improvement of agri-food education</td>
<td>• low priority of the sector in scientific community</td>
</tr>
<tr>
<td>• better cooperation of science and industry</td>
<td>• limited financial resources for research</td>
</tr>
<tr>
<td>• higher involvement in European research area</td>
<td>• slow process of changes in the scientific research</td>
</tr>
<tr>
<td><strong>INDUSTRY</strong></td>
<td><strong>INDUSTRY</strong></td>
</tr>
<tr>
<td>• better organisation of producers</td>
<td>• increased competition resulting from EU accession</td>
</tr>
<tr>
<td>• modernisation of SMEs</td>
<td>• low investments in modernisation and infrastructure</td>
</tr>
<tr>
<td>• adopting EU food safety standards</td>
<td>• limited sources of financing</td>
</tr>
<tr>
<td>• agro-tourism</td>
<td><strong>Industry</strong></td>
</tr>
<tr>
<td>• accession to EU – availability of EU funds</td>
<td><strong>Industry</strong></td>
</tr>
<tr>
<td>• establishment of private consultancy services</td>
<td>• increased competition resulting from EU accession</td>
</tr>
<tr>
<td>• improvement of networking between producers, industries, research centres</td>
<td>• low investments in modernisation and infrastructure</td>
</tr>
<tr>
<td></td>
<td>• limited sources of financing</td>
</tr>
</tbody>
</table>
THANK YOU ON YOUR ATTENTION