Challenges for European Agricultural Research
a Dutch Agricultural Research Institute’s perspective

October 2\textsuperscript{nd} 2012, Dr. Frank Bakema
Content

- Current trends affecting Agricultural Research in Europe
- Trends / developments affecting organization of research
- Reflection on EU instruments for Research & Innovation
- Challenges for Agricultural Research Institutes

Global trends / EU strategy

R&I Instruments

Agricultural Research Institutes
Current global trends

- A large number of global societal issues relevant for our domain:
  - Food Security
  - Food & Health
  - Climate change
  - Water Availability
  - Transition towards a Biobased Economy
  - Sustainability & Stewardship

- Problems are global, international, national and regional

- Developed countries, as well as developing countries
Scientific challenges

- How to double food production while using less inputs and strongly reducing waste and adverse environmental impacts?
- How to adapt food production systems to climate change?
- How to govern water distribution and to raise efficiency in water use
- How to maximise the value of biomass for the use of food, feed, pharmaceuticals, chemicals and energy?
- How to preserve biodiversity?
Trends and developments in EU-policy affecting agricultural research

- **EU 2020 Strategy & Flagship Initiatives** a new economic strategy for Europe

  Three integrated elements:

  - **Smart growth**
    developing an economy based on knowledge and innovation
  
  - **Sustainable growth**
    promoting a more efficient, greener and more competitive economy (green innovation)
  
  - **Inclusive growth**
    fostering a high-employment economy, delivering social and territorial cohesion and fighting poverty
Trends and developments in EU-policy affecting agricultural research

- 7 Flagship Initiatives:

<table>
<thead>
<tr>
<th>Smart Growth</th>
<th>Sustainable Growth</th>
<th>Inclusive Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>Climate, energy and mobility</td>
<td>Employment and skills</td>
</tr>
<tr>
<td>Education</td>
<td>Competitiveness</td>
<td>Fighting poverty</td>
</tr>
<tr>
<td>Digital society</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Instruments in EU-policy affecting the organization and funding of research

- Horizon 2020: EU Framework programme for research & innovation
- EIT:
  - KICs
  - Joint Programming Initiatives
- Structural Funds
HORIZON 2020: EU Framework Programme for Research and Innovation

Global Challenges

Climate change

Agriculture

Food Security

Food & Health

Stewardship

Biobased Economy
What’s new in HORIZON 2020

- A single programme combining three separate programmes/initiatives*
- Linking research to innovation
- Focus on Grand Challenges
- Simplified access, for all companies, universities, institutes in all EU countries and beyond

*The 7th research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)
HORIZON 2020: Three Blocks

1. Excellence in the Science base (budget: € 25 billion)
   - Frontier research / ERC
   - Marie Curie mobility fellowships
   - Research Infrastructures
   - Future Emerging technologies (FET)

2. Tackling Societal challenges (budget: € 32 billion)
   - Research, innovation, proof of concept demonstration, market uptake (CIP, Eco-innovation, IEE)
   - Innovation action integral part

3. Creating industrial leadership (budget € 18 billion)
   - Innovation of SME’s links with national / regional innovation systems
   - Risk finance facilities
## Block 2: Grand Societal Challenges in Horizon 2020

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Relevance for Agricultural Research</th>
<th>Budget in Horizon 2020 (in €m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food security, sustainable agriculture, marine and maritime research and the bio-economy</td>
<td>++++</td>
<td>4152 (13%)</td>
</tr>
<tr>
<td>Climate action, resource efficiency and raw materials</td>
<td>+++</td>
<td>3160 (10%)</td>
</tr>
<tr>
<td>Health, demographic change and wellbeing</td>
<td>++</td>
<td>8033 (25%)</td>
</tr>
<tr>
<td>Secure, clean and efficient energy</td>
<td>+</td>
<td>5782 (18%)</td>
</tr>
<tr>
<td>Smart, green and integrated transport</td>
<td>-</td>
<td>6802 (21%)</td>
</tr>
<tr>
<td>Inclusive, innovative and secure societies</td>
<td>-</td>
<td>3819 (12%)</td>
</tr>
</tbody>
</table>
KIC’s initiated by the European Institute of Innovation and Technology (EIT)

- A KIC combines research, innovation & training in Knowledge & Innovation Communities (KICs)
  - Particularly relevant in our domain:
    - KIC Climate
    - FoodBEST
  - Should be developed from the perspective of the “golden triangle”: companies – government – knowledge institutes

- Challenges:
  - Define a focus in order to commit companies and “to make the difference”
  - Link / integrate education, research, entrepreneurship and innovation
Joint Programming Initiatives (JPIs)

- Aim: Coordinated use of national research resources (joint programming, joint foresight studies, exchange of researchers, common use of infrastructure, mapping meetings, pooling capacities etc.)

- Based on intention of national governments in EU to join forces (raising efficiency)

- 10 initiatives have started. Particularly relevant in our domain:
  - Agriculture, food security and climate change
  - Healthy diet for a healthy life
  - Water
  - Connecting climate knowledge for Europe
  - Healthy seas and oceans
  - Healthy Ageing
JPIS: challenges

- JPI’s are small related to programs in Horizon 2020: what to expect?

- Search for instruments to stimulate involvement of participants and to stimulate investments

- How to realise the added value of joint programming in a JPI for government? How to provide better results and integrate these in the policy process
Structural Funds

- Share strategic goals with HORIZON 2020, serving EU strategy 2020
- Building regional capacities (smart specialisation)
- Including SME’s
Challenges for research institutes

- Global and European societal challenges provide new scientific challenges and need for expertise development in new scientific fields
- Explain the societal relevance of research
- Stronger need for interdisciplinary research & integration
- Integrate companies in your institutional network
- Explain the economic value of research
- Be involved in the development of “regional hotspots”
- Take care of link with national ministries
- Be excellent with regard to research quality
Challenges for research institutes

- Develop strong networks / consortia in Europe:
  - Strong partners raise the success rate
  - Affect European policy making with regard to instruments
  - Scientific challenges and EU instruments require more collaboration in Europe, perhaps even specialisation
Discussion