

# Challenges for European Agricultural Research a Dutch Agricultural Research Institute's perspective

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# 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:**

Smart Growth	Sustainable Growth	Inclusive Growth
Innovation	Climate, energy and mobility	Employment and skills
Education Digital society	Competitiveness	Fighting poverty



# 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

Food Security



Climate change



Agriculture



Food & Health



Stewardship



Biobased Economy



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# What's new in HORIZON 2020

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- 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

Challenge	Relevance for Agricultural Research	Budget in Horizon 2020 (in €m)
Food security, sustainable agriculture, marine and maritime research and the bio-economy	+++++	4152 (13%)
Climate action, resource efficiency and raw materials	++++	3160 (10%)
Health, demographic change and wellbeing	++	8033 (25%)
Secure, clean and efficient energy	+	5782 (18%)
Smart, green and integrated transport	-	6802 (21%)
Inclusive, innovative and secure societies	-	3819 (12%)

# 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

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- 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

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- 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



Photo: FloraHolland

