



Agricultural research and innovation

Strengthening their links to policy challenges and priorities

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Outline

1. Some relevant facts
2. Some emerging challenges
3. The opportunities towards 2020



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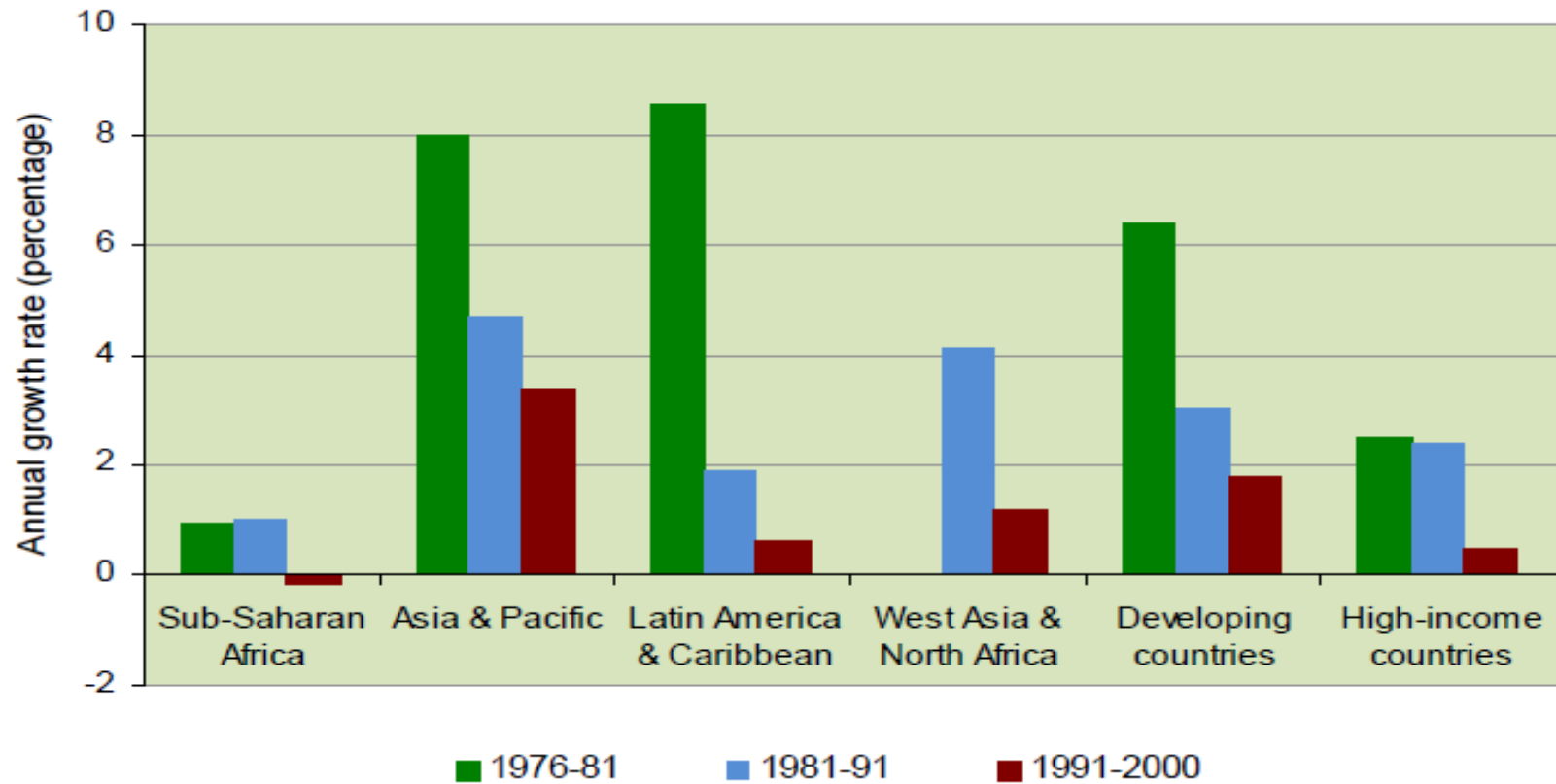
Recent trends in agricultural research...

- Strong diversification of research agendas away from productivity gains in food staples towards:
 - concerns for the environmental effects of agriculture,
 - food safety and food quality,
 - other uses of biomass, etc.
- Slow down of growth in agricultural research in many regions of the world despite high rates of return (Alston, Beddow & Pardey, 2009)
 - even in high income countries, the annual rate of growth decreased from 2.3% in the 1980s to 0.56% in the 1990s



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Annual growth rate in agricultural research





...and their impact

- The slowing down of public research in agriculture:
 - had an adverse impact on productivity growth rates in agricultural staples
 - is suspected to have contributed to the high commodity prices observed in recent years (see in particular publications by Alston)
- Continuing the status quo would mean:
 - wasted opportunities (due to high rates of return);
 - declining agricultural competitiveness;
 - worsening of world food supply and demand balance;
 - lower ability of the agriculture sector to cope with environmental and climate change challenges



Stressing the potential delivery of agricultural research...

- Returns to research (in terms of productivity gains) are high for most crops and livestock commodities
- Agricultural research generates long-term benefits:
 - on average, public agricultural research begins to influence agricultural productivity as early as two years later
 - its impact could be felt for as long as 30 years
- Agricultural research has strong geographical spill-over effects (higher for livestock than for crops)
- Difficulty to measure research impact on non-market objectives, such as food safety, environmental sustainability, etc.



...has found some recent strong advocates!

- SCAR Foresight Budapest declaration
 - "in the light of the major challenges and uncertainties ahead continued investment in relevant research and innovation at EU and national levels is considered critical in achieving the transitions required to make the food system more efficient and resilient"
- UK Foresight
 - "there is a strong case for reversal of the low priority accorded to research on agriculture, fisheries and the food system in most countries"
- G20 action plan on food price volatility and agriculture pledges
 - "to strengthen agricultural research and innovation"



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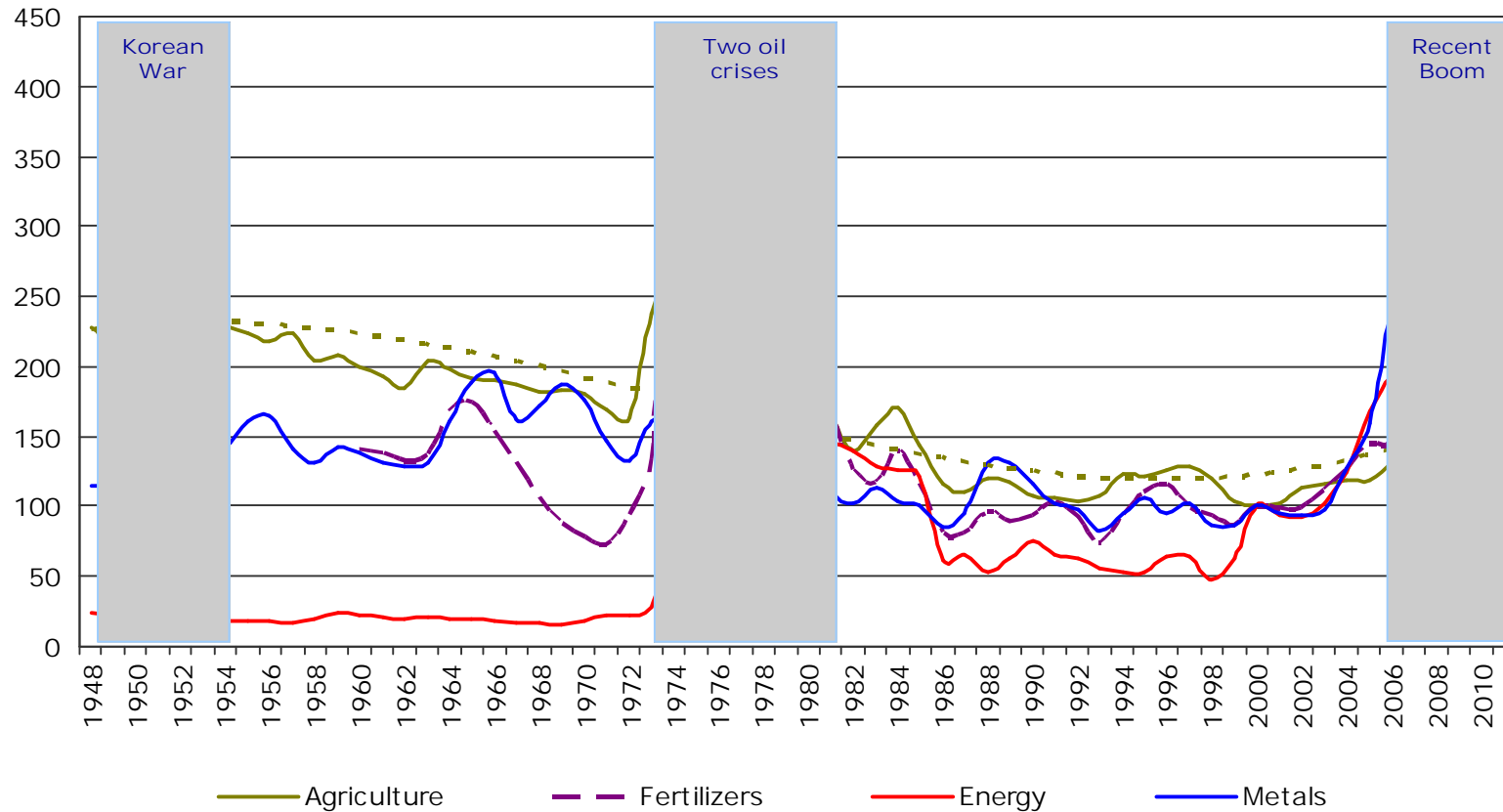
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Long term commodity price trends...

(World Bank MUV-deflated indices, 2000=100)

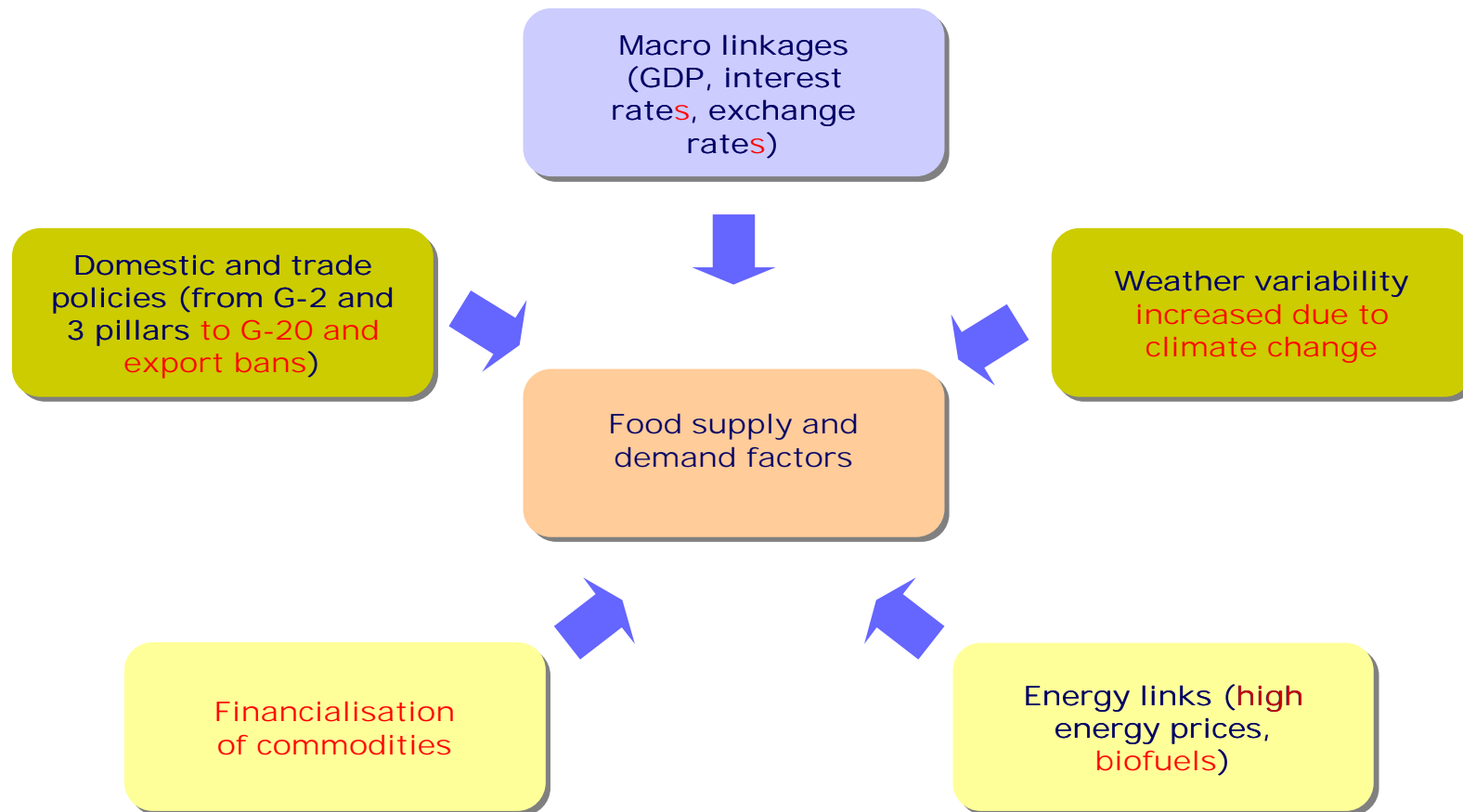


Source: World Bank. Note: 2011 figures as of November 2011.



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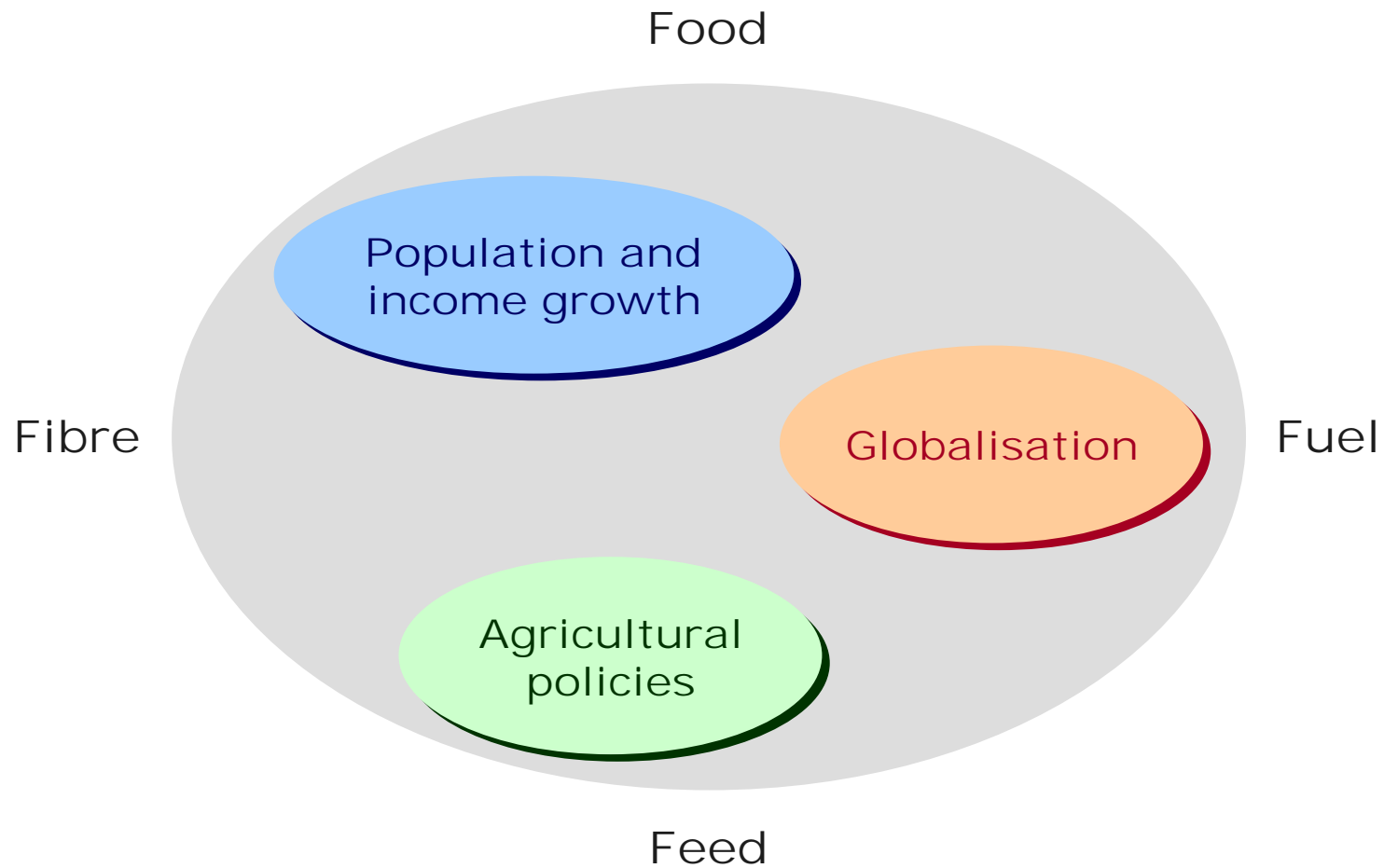
...and the new realities of agricultural markets





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The shifting balance of constant needs...



...lead to a non-exhaustive list of research challenges...

Food security

- Food quality and the standards of food production
- Functional food
- Preservation and promotion of EU agriculture diversity
- Animal health

Climate change

- Adaptation of EU agricultural production systems

Efficient use and preservation of natural resources

- Preservation of bio-diversity
- Identification of renewable energy alternatives

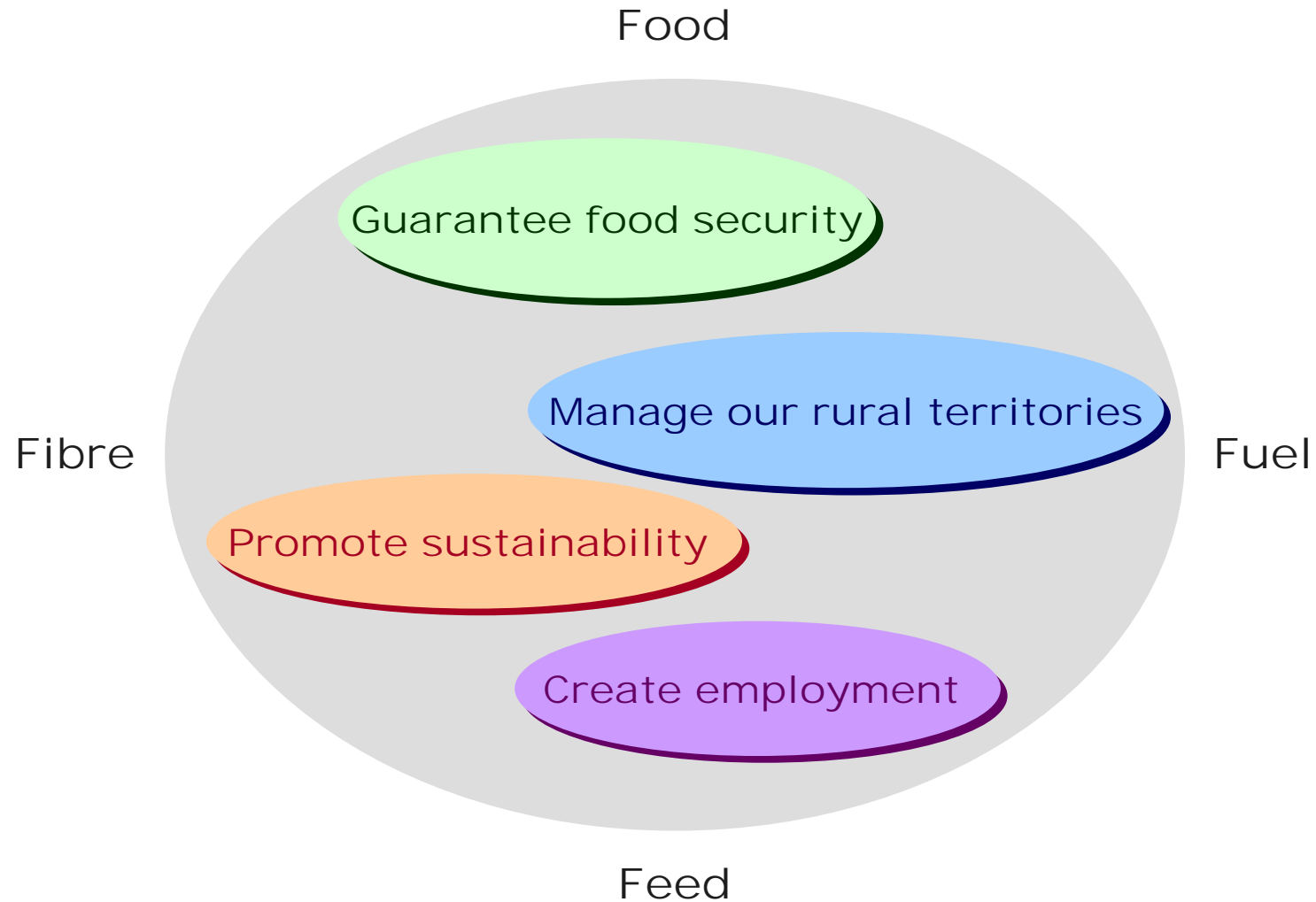
Applied research

- Application of scientific progress and achievements in agriculture
- Integration of innovation in agricultural research
- Mechanisms for CAP monitoring and evaluation



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..in search of a new equilibrium of policy priorities





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What Needs to Be Done?

- Increase both quantity and quality of knowledge through research
- Adapt and streamline CAP measures with an impact on innovation and integrate them into a coherent and visible framework
- Foster the circulation of information among stakeholders
- Establish workable links between research and innovation on the ground
- Ensure a faster exchange of knowledge from research to practical farming and provide feedback on practical needs to science

THIS WILL BE PUT IN MOTION BY
MORE FUNDS FOR RESEARCH, THE EUROPEAN INNOVATION
PARTNERSHIP FOR AGRICULTURE AND AN IMPROVED FARM
ADVISORY SYSTEM



Linking the CAP and research: Horizon 2020

- Deals with the continuum between basic research, applied research, demonstrations and implementation;
- Strengthens the dissemination and valorisation of research project results to the farming sector with, where relevant, a multi-actor approach within research and innovation projects
- Increases place for pilot and demonstration projects
- Encourages bottom up approach (in particular through the EIP)
- Promotes innovation centres / brokers
- Fosters networking and clustering at EU level (EIP)
- Incorporates cross-cutting issues (climate change, etc.)
- Coordinates and complements activities at MS level and joint initiatives (e.g. Joint Programming Initiative on Food Security and Climate Change)



Linking research to innovation

- The European Innovation Partnership “Agricultural productivity and sustainability” aims to enhance productivity and efficiency, whilst ensuring sustainable resource management:

“Achieve more from less”

- It will build bridges between research and technology and farmers, businesses, stakeholders, industry and advisors
- It will enhance the exchange of knowledge and provide feedback about research needs
- It will mobilise multiple approaches, including technological and non-technological innovations
- It will foster investment and business development



How will the European Innovation Partnership work?

- Training and knowledge transfer to bring technology to the market and give feed-back from practice to science
- Rural Development Programmes provide for support for cooperation and setting up of the 'operational groups' (e.g. farmers, advisers, enterprises, researchers, administration)
- 'Operational Groups' may carry out projects, testing and applying innovative processes, products and technologies
- A specific Innovation Network will be established which aims at fostering the dissemination of experience with innovative approaches and improving communication between agricultural practice and science
- The EIP will make use of existing policies and measures to foster innovation.



Knowledge exchange and advice

- The Farm Advisory System becomes a single horizontal instrument
 - rules are merged in one single CAP legal instrument and provisions are made consistent
- The scope is significantly enhanced
 - requirements under Cross Compliance remain
 - the "green" payments and the maintenance of land are added
 - the FAS shall cover requirements and actions related to climate change, biodiversity, protection of water, animal and plant diseases as well as innovation
 - the FAS shall cover the sustainable development of the economic activity of farms, in particular small farms
- A number of principles are specified
 - this follows-up the 2010 Commission report
 - the principles concern the qualification of advisers, the separation with controls and the access for farmers to the FAS



Conclusions at a glance

Proposed new budget for agri research: from 1.9 to 4.5 billion EUR

New mechanisms steering innovation

New mechanisms fostering knowledge exchange