TRIPTOLEMOS FOUNDATION

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To Feed the World in 2050

- The world population will reach 9.2 billion in 2050 and most of that increase will be in developing countries
- About 70% of the world population will be urban in 2050 compared to 50% today
- The income per capita in 2050 will be much higher than today increasing world food demand (high elasticity demand/income and change of the food diet patterns)
- In order to feed this larger, more urban and riche population, the world food production will have to increase by 70% (100% in developing countries) from now up to 2050

The challenge for the technology

- 90% of food production increase should come from higher yields and 10% from expansion of cultivated land
- The rate of growth in yields of the grains has been declining from 3.2% per year in 1960 to 1.5% in 2000 and 1.2% in 2015
- The cultivated land per capita changed from 4.3 ha in 1960 to 2.3 ha in 2010 and to 1.5 ha in 2050
- **The challenge for agricultural technology is to reverse this decline and increase the agricultural productivity and food supply in a climate smart, environmentally friendly and preserving natural resources way**

Existing technologies

- Conservation and precision agriculture
- Integrated pest management
- Efficiency fertilizer use
- Efficiency irrigation water use
- Conservation and sustainable use of genetic resources (plant and animal breeding)
- Information and communication technology
- The problem is the low rate of adoption by small farmers in developing countries

Technology innovations

- More and better agriculture and food R&D is needed in developed and developing countries
- The biotechnology will have a key role for the agriculture climate change mitigation and adaptation and to achieve food security
- Smart/digital agriculture based on big data and ICT seems to be the most promising way to develop agribusiness in the future
- But it will be adopted just by agribusiness or by small farmers too?
- The risks that R&D be concentrated in a few private companies
- A private-public partnership could be the best way to increase the agrifood R&D investments in developed and developing countries

Increasing Investments and trade

- The required increase of annual investments to deliver the necessary increase of food production in developing countries is about 50% (83 billion $). Achieving it will require an increase of public expenditure and donor contributions in developing world
- The small farmers still produce more than a half of the total world food production
- Policies that support to the small farmers and encourage them and other private actors to increase investments are needed
- The import of grains in developing countries will move from 135 millons tons in 2010 to 300 millons tons in 2050 (OECD-FAO). More sound liberalization of the international trade is needed

Agribussines and development

- Agribusiness investment contributes to the multiplier effect of income generated with significant impacts in job creation, tax revenues and regional development.
- In the long run the increase of world food demand will provoke high food prices and this will incentive agribusiness investment
- There are two different models of agribusiness: one based in very large farms (America) and other based on small/medium farms and large cooperatives and competitive food industry (Europe)
- The EU is the first importer and exporter of agrifood in the world but the success is that we import commodities and export quality and safety processed and prepared food with high added value

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Food System Development

Today **science** has a key role in the challenges of the agriculture and food industry ...

Bioeconomy	Climate Cange	Demography
Education	Limited resources	Eating habits
Gastronomy	Allergies	Culture

Sustainability, Credibility and Trust Society

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Food System Development

Today science has a key role in the challenges of the agriculture and food industry ...

Quality raw materials	Food safety	Food and health
Agricultural productivity	New industrial technologies	Obesity
GMO	New, more friendly packaging	Functional Foods

Sustainability, Credibility and Trust Society

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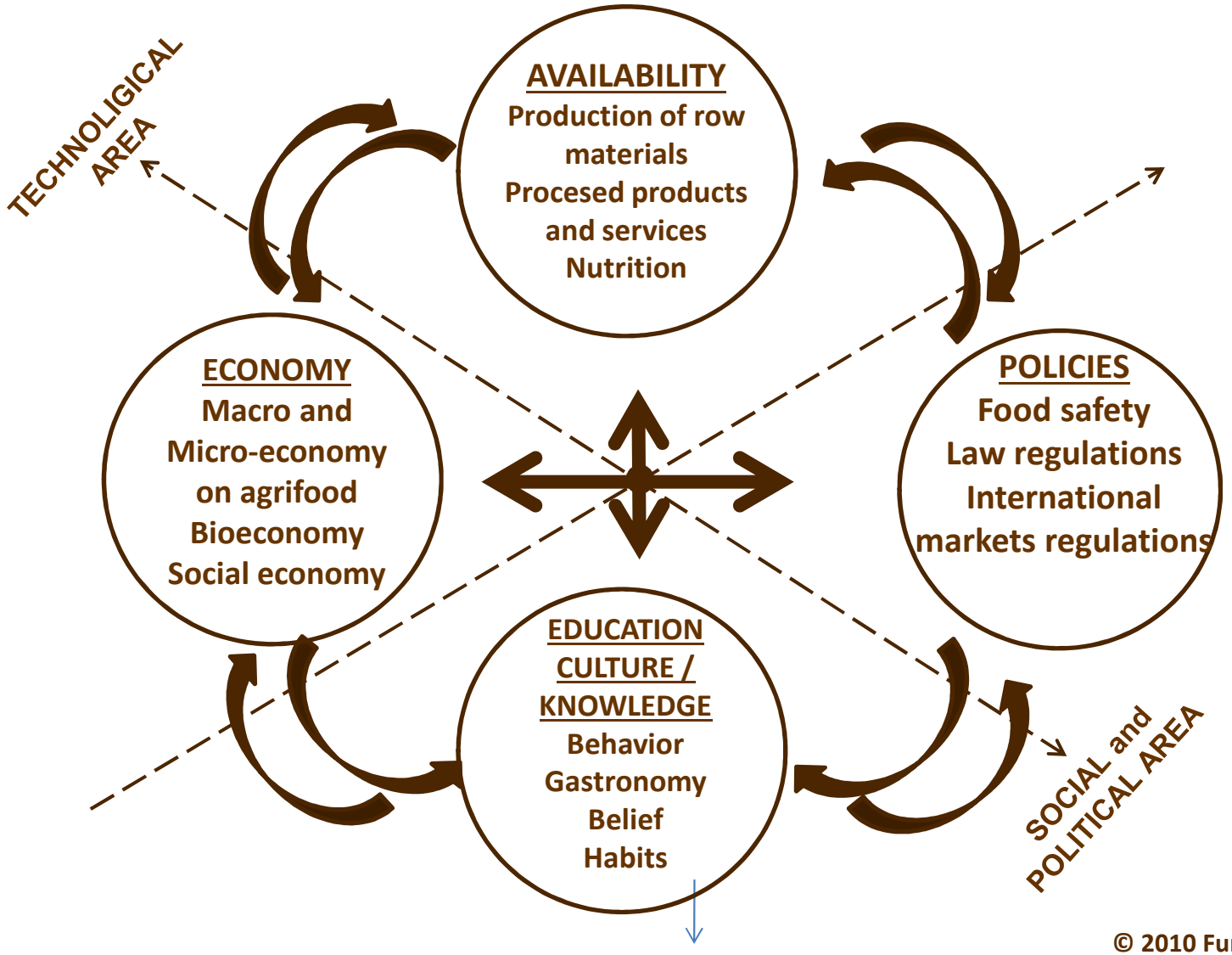
Food System Development

In this context the Triptolemos Foundation was established in 2002 to assist the optimization and coordination of the global food system actors aiming to a greater availability, quality and safety of food

Global Food System

In a framework of ethics and sustainability (4 axis)



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Food System Development

Triptolemos Foundation activities are developed around **three strategic axis**:

1. **Articulation** of the Global Food System
2. **Generation of knowledge** and **confidence** in the Global Food System
3. **Bridging** knowledge and entrepreneurship

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Food System Development

Some data about members of Triptolemos:

- 17 Campus of International Excellence
- 26 universities
- 3625 researchers in agriculture and food industry
- 1.340 patents
- 1450 Research Groups
- 350 food companies
- 4 farmers and cooperative organizations
- 3 consumers and distribution organizations

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Food System Development

UNESCO CHAIR :"*Science and Innovation for Sustainable Development: Global Food Production and Safety*"

United Nations
Educational, Scientific and
Cultural Organization

UNESCO Chair on Science and Innovation for
Sustainable Development: Global Food Production and Safety
Fundación Triptolemos para el desarrollo alimentario

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Food System Development

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Strategic partner of:

Alimentaria 2016

The Alimentaria Hub

Triptolemos Foundation

Food System Development

The Triptolemos Foundation is open to any other entity or activity that share its aims and objectives

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Food System Development

The Alimentaria Hub

Trends & Innovation