FOOD RESEARCH IN SUPPORT TO SCIENCE-BASED REGULATIONS:
Challenges for producers and consumers
21–22 April, 2009
Prague Congress Centre
• Outline

Research in Europe, the **added value**

Food complexity and the **importance of the consumer**

EC research to **support** health and well-being of consumers, some examples

EC research to FOSTER **Innovation in the food Industry**
Build a European **Knowledge-Based Bio-Economy (KBBE)**

- Respond to social and economic challenges:
  - Product markets- Productivity gains (Agriculture)
  - Enhancement effects (Nutrition & Health)
  - Eco-efficient and sustainable use of natural resources Substitution- (Biotechnologies)
  - Support Lisbon Strategy – Growth and Employment

- Provide goods and services to a growing population
Build a European Knowledge-Based Bio-Economy

Establishing priorities

EUROPEAN ADDED VALUE

Risk

Market

Food Safety

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“A need to improve R&D efforts”

R&D in EU and non EU countries (Million €)

**Major Trends**

- GLOBALISATION
- STRUCTURAL CHANGES
- TRADE PATTERNS
- NEW(BIO)TECHNOLOGIES
- CONSUMER PREFERENCES
- EDUCATION

Source: 2008 EU R&D investment scoreboard European Commission, JRC and DG RTD / CIAA data and trends 2008

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THE IMPORTANCE OF THE CONSUMER

Health and well-being of consumers

Nutritional value / digestion health impacts

Organoleptic impact

Safe, high-quality foods

Preparation

Storage / transport / retail

Environment

Production systems: Agriculture / Fisheries / Aquaculture

Consumers
Nutrition
Processing
Safety
Environment

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CONSUMER
Influence & determinants

Food knowledge plays a key role in food and drinks development.

Individual choices

Needs and taste

Family practices

Healthy and Sustainable eating & dietary habits

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Most of the value is in the processing rather than in the commodity itself.

**Farmer** custodian of land and water resources and an applier of technologies that provide for long-term sustainability.

**Assembler** ensures origins and safety at all levels of the food chain

**Processor** developer of branded and own-label products that now provide not only caloric content but also health and nutrition alternatives

**Distributor** to provide unique foods for people to manage the health and nutrition of the general population.

Adapted from Goldberg R. Nature Biotechnology 17 suppl. 1999
Policy issue:
Acrylamide in foods

**FP6 HEATOX**


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DG SANCO's
"Draft Commission Recommendation on the monitoring of acrylamide levels in food"

CIAA
“Acrylamide Toolbox”
(Updated 2009)
GUIDELINES
nutrition and consumer health
AGING
CARDIVASCULAR DISEASES
CANCER

FP6 Flora
«FLAVONOIDS AND RELATED PHENOLICS FOR HEALTHY LIVING USING RECOMMENDED ANTIOXIDANTS”

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Legislation debates in the field of nutrition

FP7 Flabel
Food Labelling to Advance Better Education for Life

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EFSA publishes opinion on the potential risks arising from nanotechnologies on food and feed safety

"... current data limitations and a lack of validated test methodologies could make risk assessment of specific nano products very difficult and subject to a high degree of uncertainty... ».
EC RESEARCH to FOSTER Innovation in the food Industry
What Does INNOVATION mean?

**Theory of Innovation and R&D**

There is frequent confusion over both the definition of an innovation and the definition of R&D.

- Technology adoption
- Incremental changes
- Reverse engineering
- Combining knowledge in new ways

Adapted from

« **Neglected innovators: How do innovative firms that do not perform R&D innovate?** »


Anthony Arundel, Catalina Bordoy, and Minna Kanerva MERIT March 31, 2008
What Does **INNOVATION** mean?

Theory of Innovation and R&D

European consumers are conservative about the food they choose to eat and most innovations in the food industry tend to be **incremental** rather than **radical**

Extracted from

*Biotech Innovation in Europe’s Food and Drink Processing Industry: Promise, Barriers and Exploitation*

Chapter for R. Rama (Ed.), *Innovation in the food and drink processing industry*, Haworth Press Inc, N.Y. Biotech.

Jacqueline Senker and Vincent Mangematin
What Does INNOVATION mean?

Both approaches are valid:

- **RADICAL**: Applying processes that have been developed elsewhere
- **GROWTH**: Developing new innovative products and processes
- **INCREMENTAL**: Promoting and supporting entrepreneurship

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INNOVATION
With and Without R&D

Innovative firms that did not perform R&D in 2000: Breakdown by Country

Adapted from "Neglected innovators: How do innovative firms that do not perform R&D innovate?"
Anthony Arundel, Catalina Bordoy, and Minna Kanerva MERIT March 31, 2008

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Food, Agriculture and Fisheries, and Biotechnology Knowledge-Based Bio-Economy (KBBE)

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Lead Markets

How can we help?

Identify barriers & opportunities

Public procurement

Standards

Regulations

IPR

to develop
LEAD MARKETS

+ to create
INNOVATION-FRIENDLY
EUROPE

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BEVERAGES
focus on functional foods

- Broader nutrient & speciality ingredient fortification
- Condition specific marketing
- Lifestyle enhancers
- Sports market
- Childrens’ health
- Gender, age & ethnic products
- Weight, satiety & appetite suppression
- Functional snacks
- Natural foods
- Non-traditional food markets
- Drug/medication delivery

adapted from
FOOD PROCESSING-INNOVATION-NUTRITION HEALTHY CONSUMERS
Brian McKenna, President EFFoST, The third SNS Congress: Radenci, September 22nd to September 26th, 2007

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“OPEN vs CLOSED” INNOVATION:

INDISPENSABLE
DIALOG STEPS

ESTABLISH
TRUST

BUILD
GOODWILL

CREATE
VALUE

Typical innovation partnership stages

adapted from: "CREATING SUCCESSFUL INNOVATION PARTNERSHIPS" by H.TRAITIER AND I.S. SAGUY
FOOD TECHNOLOGY 03.2009

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Technology Platforms in the KBBE sector

Farm Animal Breeding

Industrial biotechnology

European Biofuels TP

European Technology Platform
Food for Life
http://etp.ciaa.be

SusChem

ETP Global Animal Health
www.fabretp.org

ETP Plants for the Future
www.epsoweb.org

www.suschem.org

www.forestplatform.org

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EC research

Packaging + Sensoring (intelligent packaging)

Immunosensors

Lab-on-a-chip ‘Omics’

Nanosensor

ROBUST scientific data must support EU food policies

Maintain quality

Identify processes e.g. by Proteomic/Metabolomic approach

Avoid counterfeit

Adapted from: 3rd International Symposium on Recent Advances in Food Analysis - Food Analysis 2007
PRAGUE

Food, Agriculture and Fisheries, and Biotechnology
Knowledge-Based Bio-Economy (KBBE)

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Build a European Knowledge-Based Bio-Economy

DEFINE
Global research needs along the food chain

ALIGN
European research to meet consumer needs

KNOWLEDGE

FOSTER
Innovation in the food Industry
Thank you for your attention

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EUROPEAN COMMISSION
DG RESEARCH

Food, Agriculture and Fisheries, and Biotechnologies

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