

6th FOOD-NCP meeting  
Brussels, 10 JULY 2006

**Life sciences and biotechnology for  
sustainable non-food products and  
processes**

Dr Maurice Lex  
European Commission  
DG Research  
Agriculture, Food and Biotechnology

# Life Sciences and Biotechnology

## A Strategy for Europe

COM(2002)27 - January 2002



Biotechnology has the potential to improve non-food uses of crops as sources of industrial feedstocks or new materials such as biodegradable plastics.

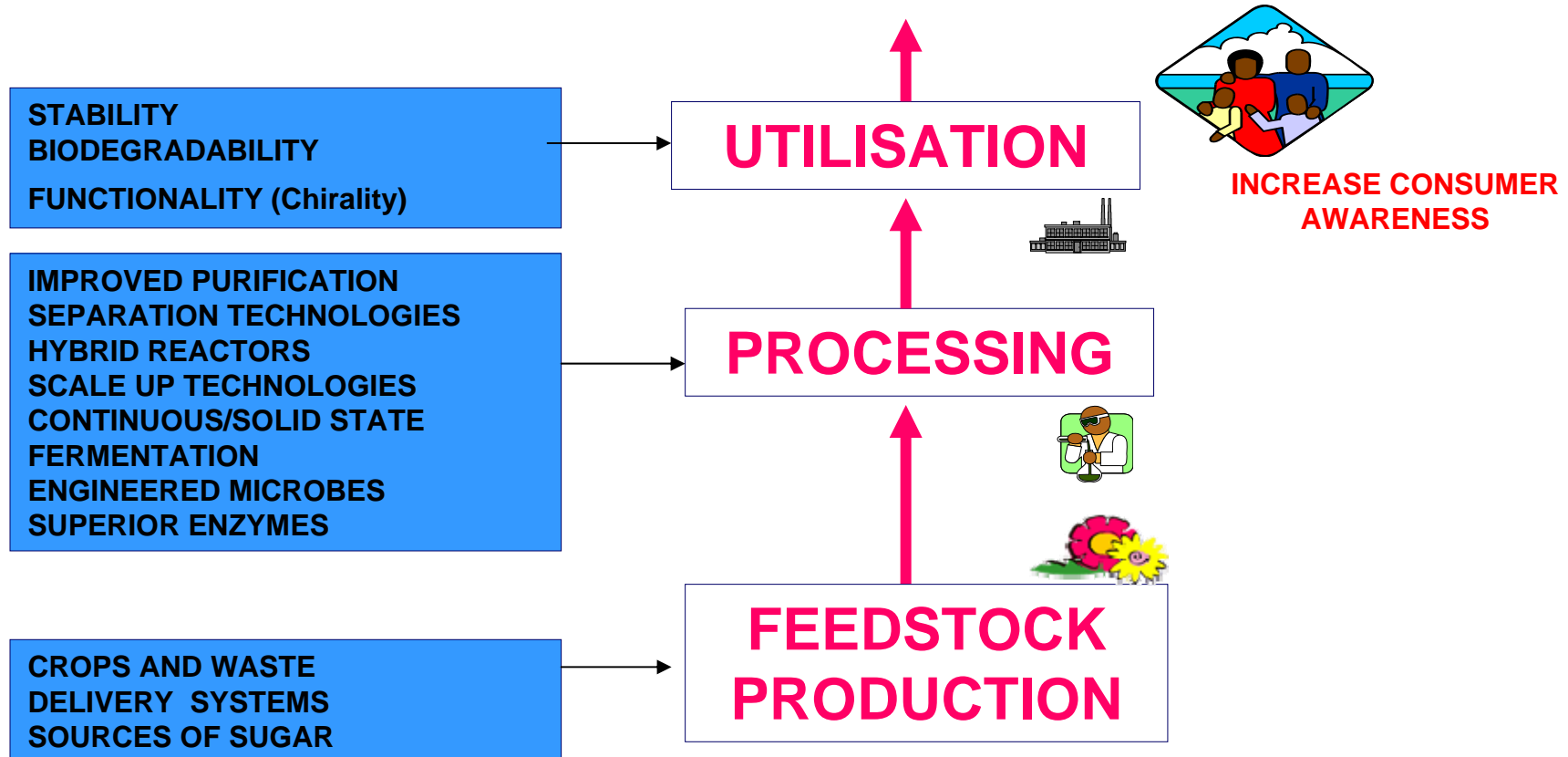
Biomass may contribute to alternative energy sources ... such as biodiesel and bioethanol.

Biotech may lead to the development of cleaner industrial products and processes using enzymes (biocatalysis)

# THE EUROPEAN KNOWLEDGE-BASED BIOECONOMY - WHITE BIOTECHNOLOGY



## BIOBASED MATERIALS FOR HEALTH INDUSTRY & ENERGY



# Activity 3:

## Life sciences and biotechnology for sustainable non-food products and processes

- Improved crops, feed-stocks, marine products and biomass for energy, environment, and high added value industrial products; novel farming systems
- Bio-catalysis; new bio-refinery concepts
- Forestry and forest based products and processes
- Environmental remediation and cleaner processing



# Life sciences and Biotechnology for sustainable non-food products and processes - Activities

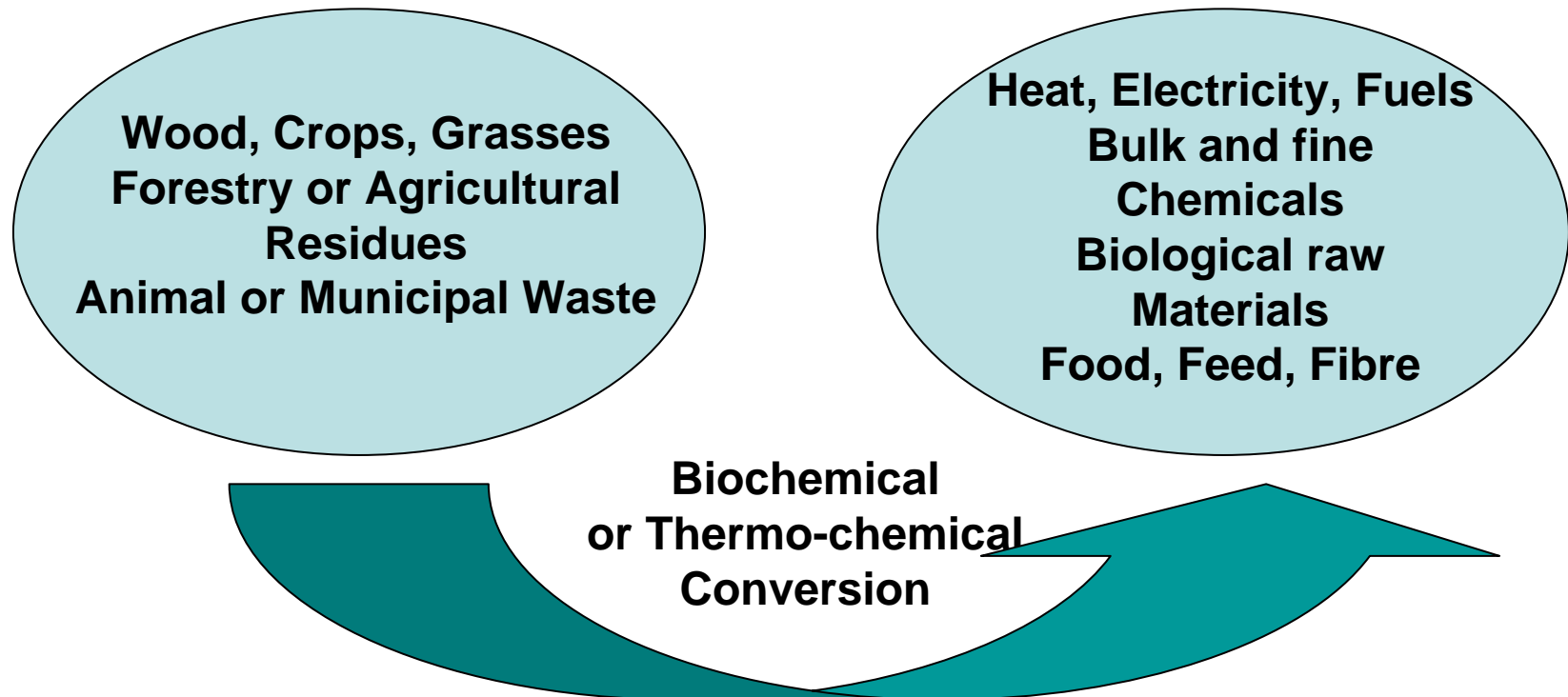
- 1. Improved crops, feed-stocks, marine products and biomass for energy, environment, and high added value industrial products; novel farming systems:**
  - Strengthen the knowledge base and develop advanced technology for terrestrial or marine biomass application in energy and industry
  - Exploitation of natural or enhanced terrestrial and marine organisms as novel sources of new valuable products (speciality chemicals, pharmaceuticals etc.)
  - Improve chemical and biochemical productivity of biomass for production of high added value products etc.

# Life sciences and Biotechnology for sustainable non-food products and processes – Activities

## 2. **Bio-catalysis; new bio-refinery concepts:**

- Investigate and apply industrial biotechnologies and improve whole crop chain for realising the full potential of the bio-refinery concept (including socioeconomic, agronomic, ecological and consumer aspects)
- Increase understanding and control of plant and microbial metabolism for the production of renewable high value products (fibres, polymers, pharmaceuticals etc.)
- Improved biomass input and bio-processes for increased yield, quality and purity of conversion products including biocatalytic process design and innovative down stream processing etc.

# Bio-refineries



Will be supported in two FP7 Thematic Priorities:  
Food, agriculture and bio-technology and Energy

# Life sciences and Biotechnology for sustainable non-food products and processes - Activities

## **3. Forestry and forest based products and processes:**

- Biotechnologies for new and improved high quality and renewable wood/fibre-based products and processes
- Development of novel and improved high added value products from forest raw material
- Support to underpinning sciences of forest physiology and pathology etc.

# Life sciences and Biotechnology for sustainable non-food products and processes - Activities

## 4. Environmental remediation and cleaner processing:

- Exploit the potential of biotechnology to detect, monitor, prevent and remove pollution
- Treating, upgrading and/or recycling wastes and industrial by-products
- Bioassays and Biosensors
- Biogradation of chemicals
- Analysis of bottlenecks for the introduction of bioprocesses etc.

# Technology Platforms

## Central Concept

***A Framework to unite all interested parties in a particular sector or area of strategic importance or potential contribution to knowledge-based growth***

### **Main features:**

- a common long-term “vision” for the technology concerned
- mobilisation of a critical mass of public and private research and innovation efforts
- definition of a Strategic Research Agenda and roadmap to realise the common vision

A new instrument is proposed for FP7 to support ambitious, large-scale research projects through large public-private partnerships: “Joint European Technology Initiative”

# **Technology Platform: Industrial Biotechnology (part of SUSCHEM)**

- **Stakeholders:** EuropaBio;ESAB (applied biocatalysis section of EFB); Chemical, pharmaceutical, food and drinks and feed, pulp and paper, textile, detergents, starch, energy and agriculture industrial sectors
- **Vision paper** “Industrial or White Biotechnology: a driver of sustainable growth in Europe” (April 2005)
- **Strategic research agenda:** Published
- **Implementation Action plan:** in preparation
- **Website:** [www.suschem.org](http://www.suschem.org)
- **Commission contact:** [maurice.lex@cec.eu.int](mailto:maurice.lex@cec.eu.int)

Status: May 2006

# COST ACTION 868

## Biotechnical Functionalisation of Renewable Polymeric Materials

77 Institutions from 22 countries with  
16 companies over 4 years from 2006

Proposer: Prof. Georg Guebitz  
Graz University of Technology  
Petersgasse 12  
A-8010 Graz  
Tel: +43 316 873 8312  
Fax: +43 316 873 8399  
e-mail: [guebitz@tugraz.at](mailto:guebitz@tugraz.at)

# ERA-Net Industrial Biotechnology Partners:



NWO – The Netherlands



BMBF / PTJ - Germany



MEC / FECyT - Spain



SCO-MOH / MOST - Israel



ADEME -France



DTI - UK



CNMP - Romania



MES / TUL - Poland



FCT - Portugal



DRA - Denmark



MSES - Croatia



BeISPO - Belgium

*Observers: Slovenia, Norway, Finland, Sweden*

# IB activities in Member States

## Denmark

SD project

## Sweden

IB Forum

## Finland

IB Forum

## UK

Pro-Bio Faraday  
CoEBio3

## Baltic region

Inst. for Sust. Ind.

## Netherlands

Kluyver Centre  
B-BASIC  
→ NIIB

## Germany

BioProduktion  
IB platform

## Belgium

BIPIB  
RT Chemistry and  
Biotech

## Austria

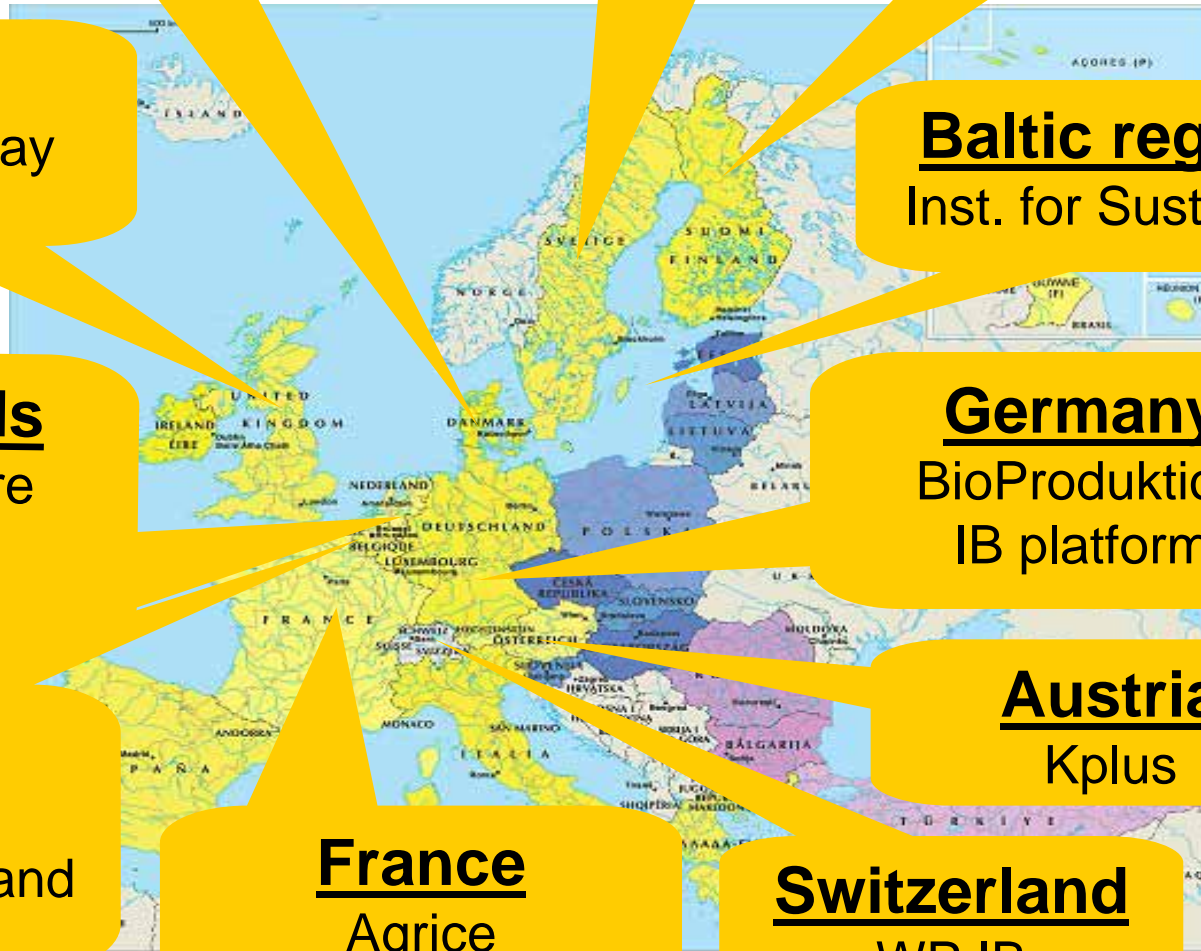
Kplus

## France

Agrice  
Pôle Comp.

## Switzerland

WP IB



**Thursday 23 March 2006**

European Parliament resolution on the promotion of crops for non-food purposes

***A future for non-food crops***

- Stresses the importance of increasing the support for research and development in non-food crop technology
- Stresses the need to carry out research to explore the economic, ecological and technical factors involved in selecting suitable crops
- Stresses the need for the integration of national research, development and testing of bio-materials at a EU level, particularly with regards to the establishment of an EU-wide research programme on technology for the conversion of biomass into energy, fuel and chemicals
- Calls for funding for research and rural development to be increasingly directed towards the more efficient and extensive use of organic waste from farming and forestry
- Calls for increased research funding for new economically efficient and sustainable technologies

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