

**Knowledge Based Bio-Economy  
towards 2020 conference**

turning challenges into opportunities

**Professor Dianna Bowles**

Chair of Biochemistry  
Centre for Novel Agricultural Products

CNAP

THE UNIVERSITY *of York*



working together to address the NEEDS  
sustainability and policies  
feedstocks for the KBBE

CHALLENGES

increasing GHG emissions

population growth

climate change

urbanisation

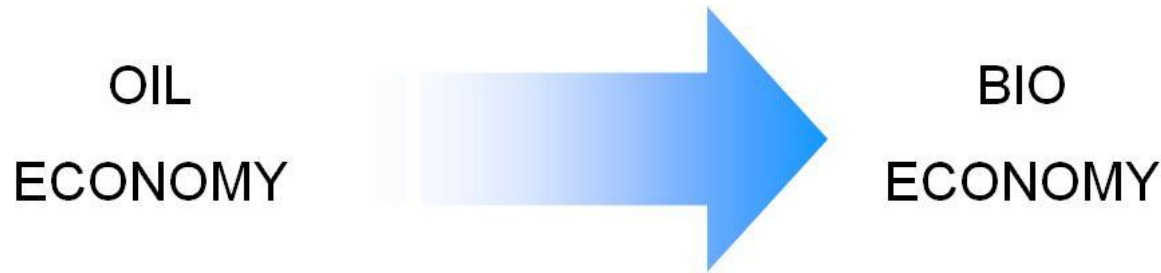
decline in fresh water

loss of biodiversity



decline of fossil reserves

# SOCIETY IS IN TRANSITION



policies to ensure sustainable use of the land,  
protect biodiversity and the environment,  
encourage rural development and best practice  
in the use of agricultural feedstocks



## EC-US TASK FORCE ON BIOTECHNOLOGY RESEARCH

### plant-based bioproducts: creating value from renewable resources

**SIXTH FRAMEWORK PROGRAMME**  
**PRIORITY 8.1 Policy-orientated research**  
 Tools and assessment methods for sustainable agriculture and  
 forestry management  
 Task 2 - Non-food policy Research

#### SPECIFIC SUPPORT ACTION

Project acronym: **EPOBIO**

Project full title: **Realising the economic potential of sustainable  
resources - bioproducts from non-food crops**



## a process to ensure sustainable development

in the **epobio** project, desk researchers identified and integrated the science, technology and supply chains needed for the design, success and sustainability of new bioproducts

support analyses of environmental impacts, the economic and regulatory environments and social attitudes established context

the **epobio** process – a holistic analysis of the issues to provide a thorough evidence-base to inform decision-making by funding agencies and policy-makers



## epobio – selection criteria for priorities

user / consumer benefit

societal benefit across the entire supply chain

scientific challenge

requires large-scale, complementary, multinational input

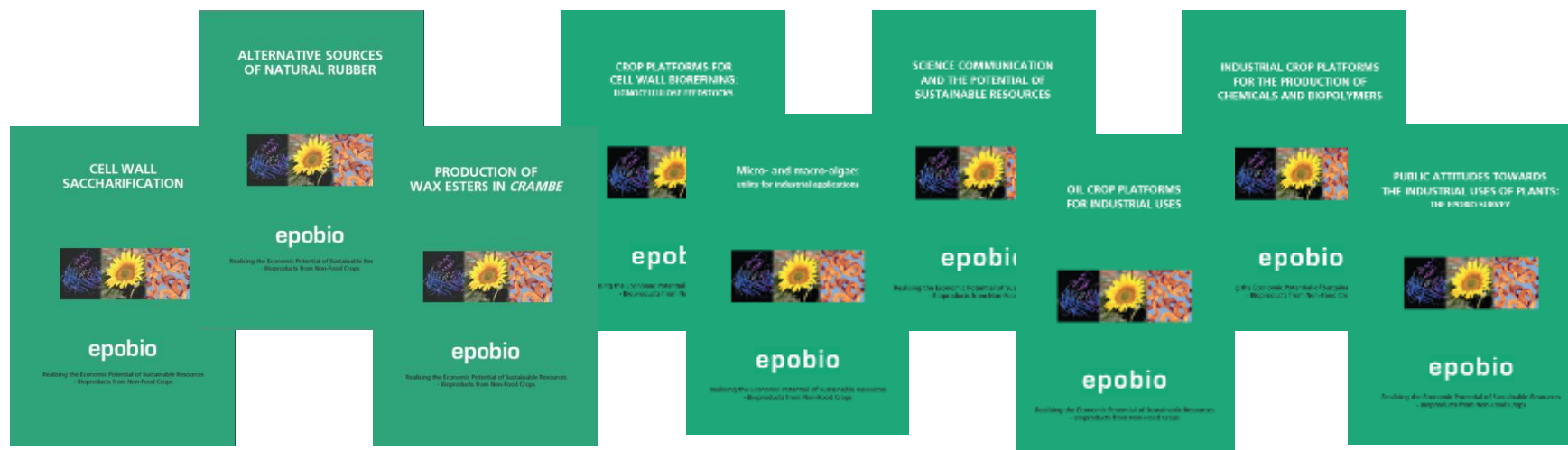
economic benefits and risk analysis

the project as a continuum – research to proof of concept

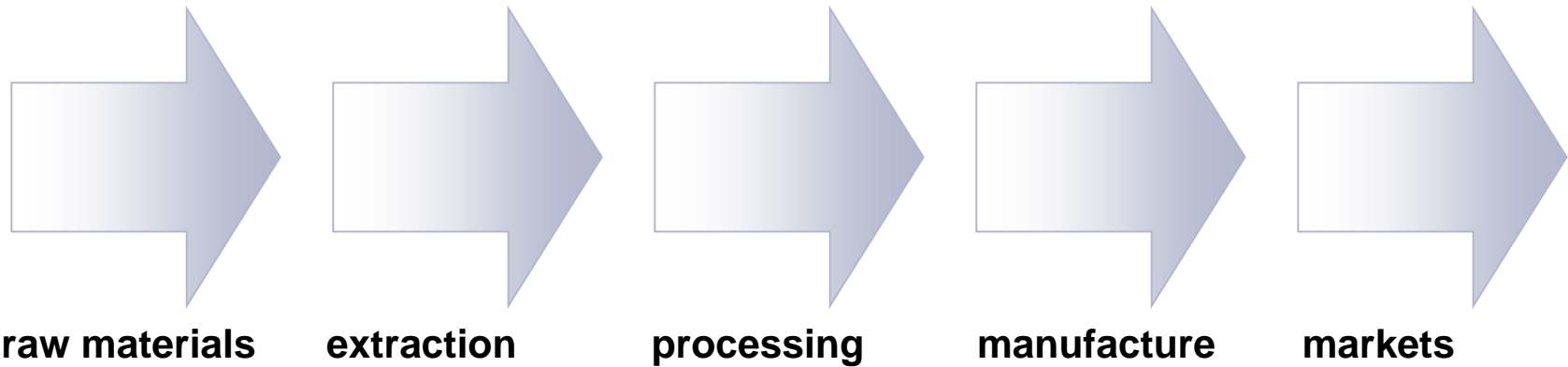
private sector involvement


pre-competitive, demonstration of value

# epobio reports



[www.epobio.net](http://www.epobio.net)



growers of the feedstocks  users of the feedstocks

the need for integrated supply chains

new policy requirements to ensure sustainability  
across the supply chain





climate change... land availability... virtual water...

## the politics of land-use decisions

developed world



developing world

productivity and sustainability

food animal feed chemicals materials fuel

sustainability criteria for ALL agricultural production

# the knowledge based bio-economy

## complementary strategies and technologies

plant production systems

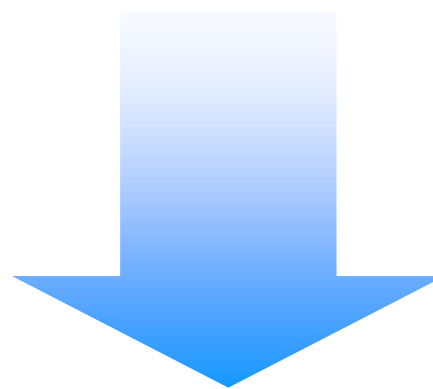
biorefineries

extraction

biocatalysis

fermentation

processing



end-user requirements

## pipelines of new products

realising the sustainable use of bio-based feedstocks