



# Bioeconomy: a perspective on the Biobased Industries Joint Undertaking (BBI JU)



**Prof. Kevin O Connor**

Chair of the Scientific committee BBI JU

Member EC expert group biobased products

former member Lead Market Initiative (LMI)  
for Biobased products

*EurAgri – Luxembourg - September 29 2015*

# A bioeconomy for Europe

- **Europe** has to address key **inter-related challenges**
  1. **Food security**
  2. **Energy security**
  3. **Climate change**
  4. **Re-industrialisation of Europe**
  5. **Reducing our dependence on fossil resources**

# A balanced bioeconomy

- The sustainable production of renewable biological resources and their conversion into food, feed, bio-based products, biofuels and bioenergy.
- Food production is at the heart of the Bioeconomy
- We must not negatively impact food production
- We can use the need to make biobased products, fuel and energy from biobased resources as an opportunity to increase the land and biomass exploitation efficiency

# Bioeconomy - back to the future

- First diesel engine – Peanut and vegetable oil
- Henry Ford and Charles Kettering (GM) – ethylalcohol from cellulose and farm produce
- Solvents – Turpentine from trees
- Polymers and fibres from nature (cotton, flax, hemp, rubber Cashmere, wool, jute, wood fibre, grass fibre...cellulose)

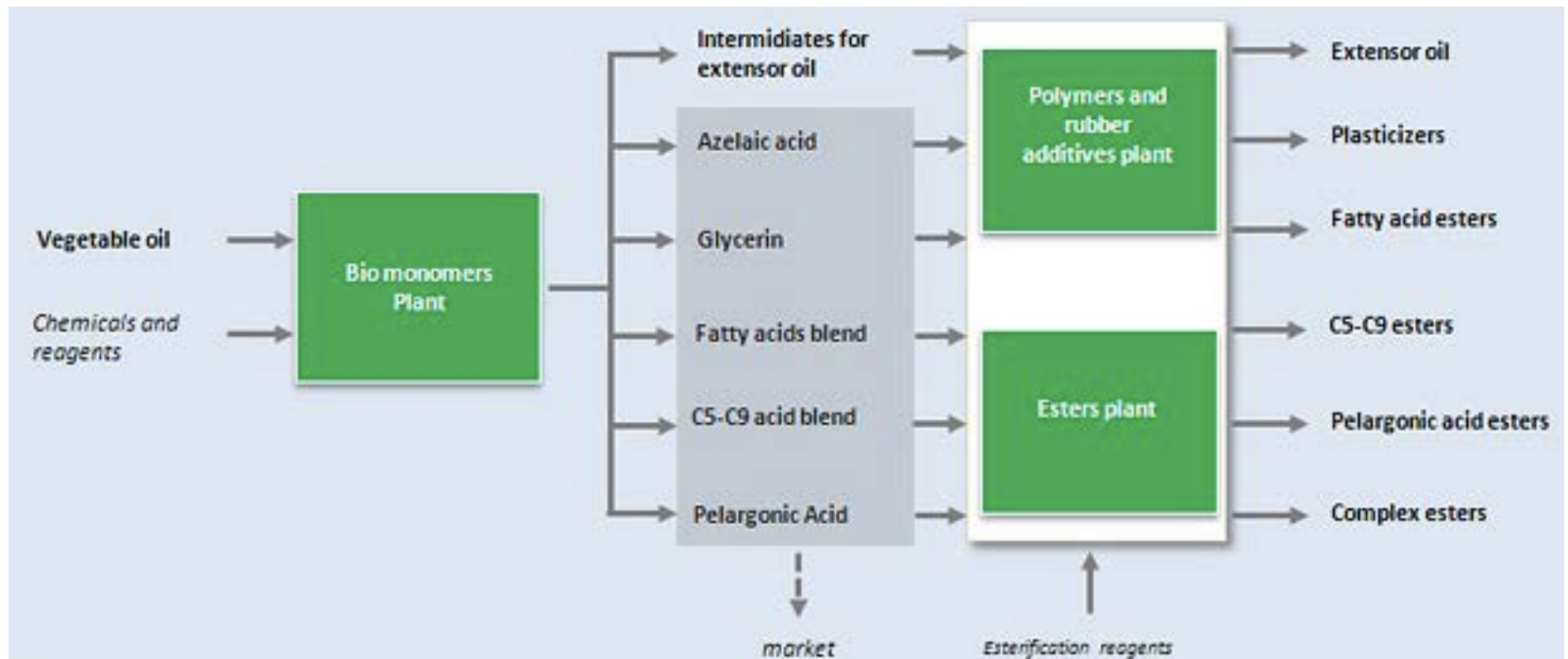
# Bioeconomy – the future

- New products, processes, and value chains
- Diversifying agriculture and industrial activity
- Replace existing petrochemical products and producing new products
- Socioeconomic and environmental benefits

# Bioeconomy and biorefining

**Matricia:** Novamont and Versalis (Eni) JV for the conversion of a petrochemical facility into an integrated green chemistry site – Biorefinery - Porto Torres Sardinia, Italy

Integrating the use of agricultural raw materials and wastes to produce biochemicals.



# Bioeconomy and growth

## Economic opportunity

- Annual turnover of €2 trillion
- 22 Million Jobs
- 10 % of workforce in EU
- 12% of the EU27 turnover
- > 700,000 jobs (80% rural) by 2030
- New value chains

# Value Chains

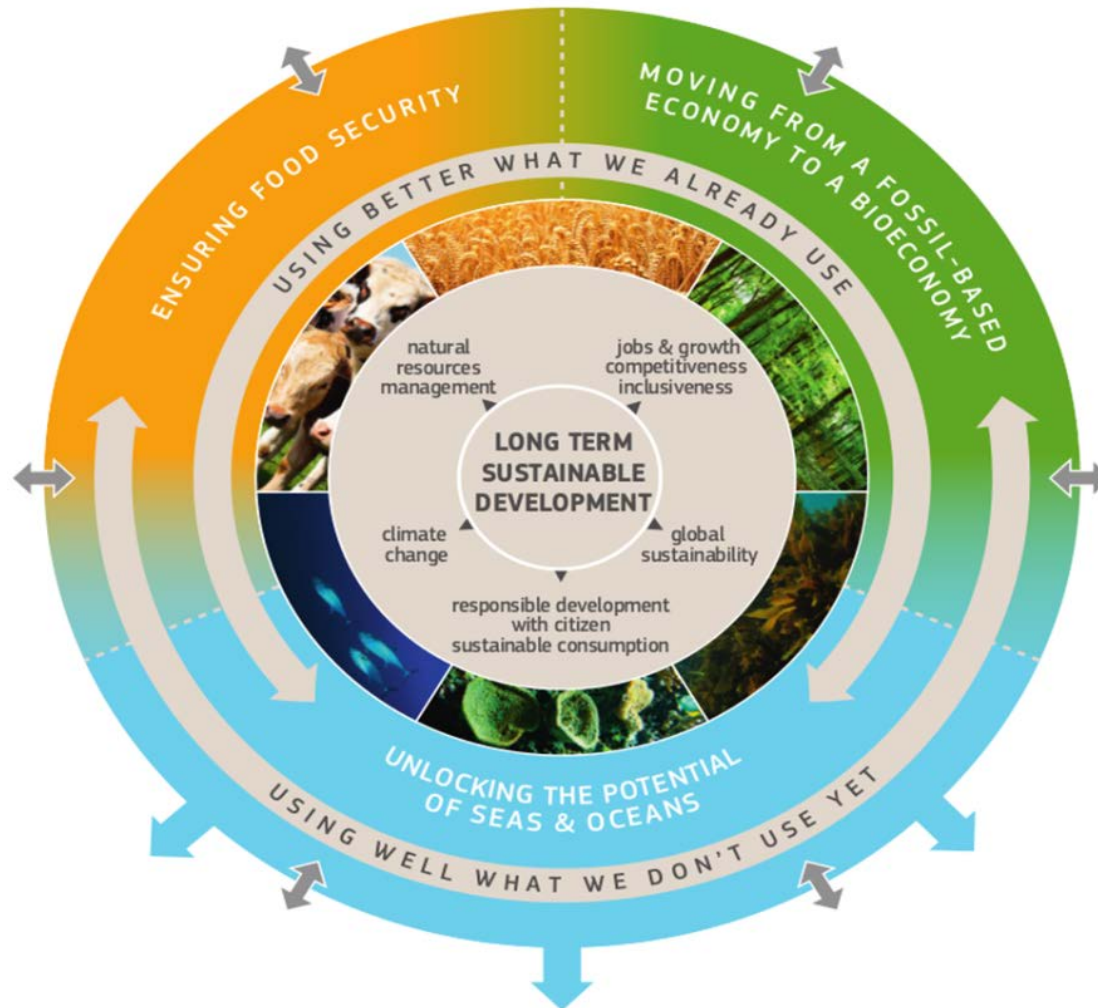
- **Value Chain 1:** From lignocellulosic feedstock to advanced biofuels, bio-based chemicals & biomaterials
- **Value Chain 2:** Next generation forest-based value chains
- **Value Chain 3:** Next generation agro-based value chains
- **Value Chain 4:** New value chains from (organic) waste
- **Value Chain 5:** Integrated energy, pulp and chemicals biorefineries:



Source: Strategic Innovation and Research Agenda ([SIRA](#)) prepared by the Bio-based Industries Consortium



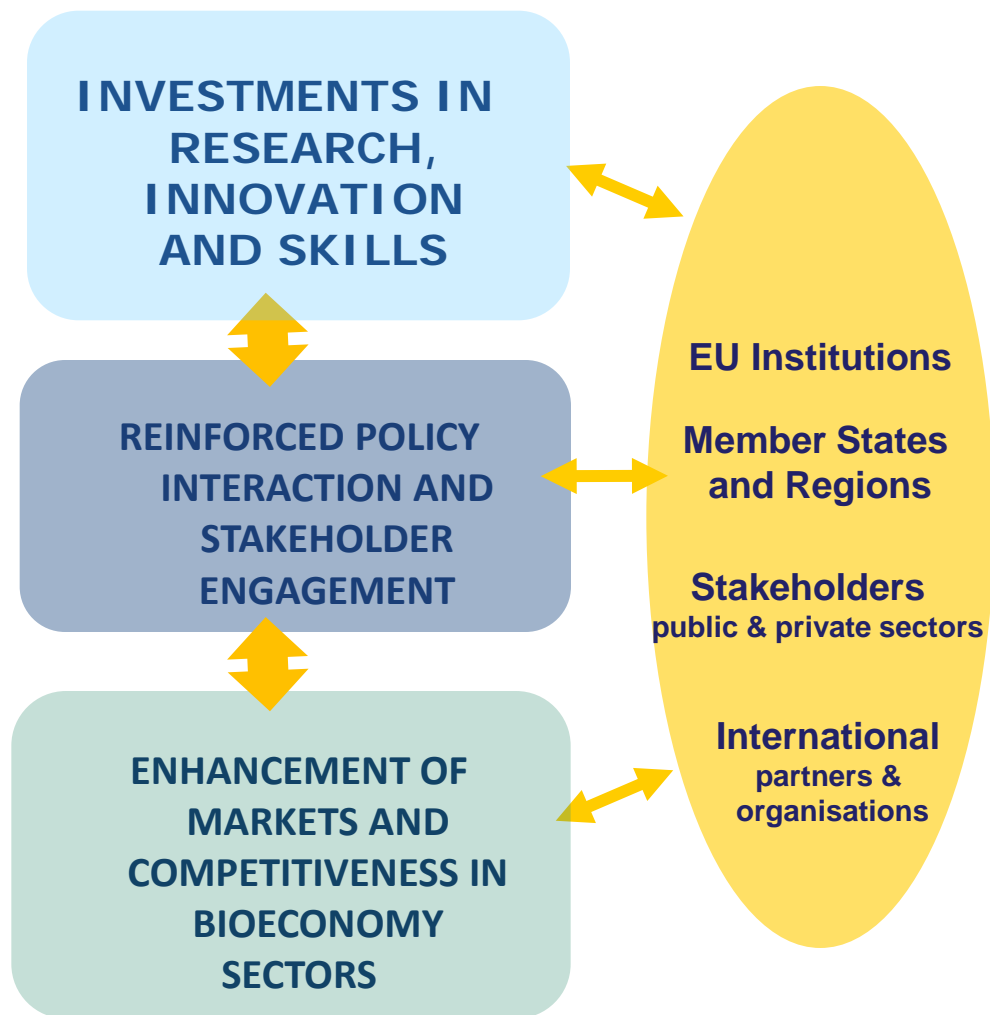
# EU Bioeconomy strategy



# European bioeconomy strategy & action Plan - 2012



The Strategy promotes sustainable use and production of renewable biological resources from land and sea and their conversion into food, bio-based products, biofuels and bioenergy.



# Bio-based Industries Joint Undertaking

Public Private Partnership  
supporting R&I for bio-based  
industries:

**Partners:** European  
Commission and Biobased  
Industries Consortium (BIC)

**Budget:** € 3.705 billion (about  
75% from industry)

**Objectives:** New bio-based  
value chains for Europe based  
on 2nd generation/advanced  
biorefineries.



[www.bbi-europe.eu](http://www.bbi-europe.eu)

# Bio-based Industries Joint Undertaking

Post petroleum / sustainable society

environmental & socioeconomic benefits



sustainability

**Bio-Based Industries**

**Biomass\* – Technologies – Bio-Products**



competitiveness

technological & economic development

Increasing investment for Research & Innovation  
for sustainable and competitive bio-based industries  
and value chains in Europe

# BBI JU SC perspective

- **Policy and standards**
- Clear policy framework to allow investment in emerging technologies and products of the bioeconomy
- Examine policy which will incentivise farmers, increase their engagement and promote inward investment in Biorefining in Europe.
- Develop standards for biobased and biodegradable products (CEN TC 411).
- Examine measures to allow efficient biobased resource mobilisation (sustainability criteria; costs, logistics, availability)

# BBI JU SC perspective

- **Policy and standards**
- Lack of common European policy is impeding widespread business growth in the bioeconomy
- Distortive policy for bioenergy and no policy for Biobased products is also an impediment
- Energy and biofuels are part of the bioeconomy they are NOT the Bioeconomy.
- Biochemicals will be the economic driver for the European Bioeconomy. Co products such as biofuels and bioenergy will be viable as a result of biochemical production.

# BBI JU SC perspective

- **Consumer behavior and acceptance**
- Open and transparent communication
- Showcasing biorefinery activity
  - Product performance
  - Job creation (rural development)
  - Environmental benefits

# BBI JU SC perspective

- **Value chain**
- Examine the entire process and value chain when developing technologies
- Focus on biomass/biobased resource value cascading
- Promote bioproducts to be an add on to food production rather than in competition with food production i.e. integrating food and non-food production
- Bioresource mapping needed
- Improve resource efficiency of agriculture/food production, and food processing value chains to reduce waste and produce biobased products. (LCA)



# BBI JU SC perspective

- **Market**
- Examine means of encouraging the uptake of biobased products e.g. Green public procurement
- Analysis of the conditions for supporting industry investment is required, as well as the possible mechanisms for reducing their risk.
- Standards and certification – global standards
- Incentives to stimulate market activity e.g. incentives for the valorisation of biological waste
- Industry cooperation for mutual benefit a major challenge

# Bioeconomy SC perspective

- **Industry support**
- Guidance and support for industry (small and large) on life cycle of biobased products, which would also allow them to examine risks as well as opportunities in the current and future regulatory framework.
- Guidance and support for SMEs on the grant application process (workshops, match making grant writing experts with SMEs)

# BBI JU SC perspective

- **BBI JU conclusions**
- Great opportunity to operate flagship and demonstration plants across Europe
- Need major investment in the Bioeconomy
- Need coordination and support actions (CSAs) – e.g. policy, life cycle analysis, standards, certification, biomass supply
- Need a robust policy landscape
- Biorefining - Value Cascading is critical
- Improved resource efficiency and diversification
- Deeper understanding of capacity for the use of cellulosic and waste resources

**Thank you for your attention!**