



Stakeholder Forum 2019

#BBISF19

Developing the Sustainable and Circular BioEconomy in EU

-by partnering across sectors, upscaling and using new knowledge faster

-for the benefit of *Climate, Environment & Biodiversity*, and *People & Business*

Lene LANGE, Vice Chair BBI SC

Director, Professor, PhD et Dr.Scient.

“BioEconomy, *Research & Advisory*”

Lene.lange2@gmail.com; (lene@DTU.dk)

BBI took "EU Bio-based Economy" to a new level

-for the benefit of climate & environment, and for stimulating
job creation & industrial competitiveness

- *Valorization of many types of biomass*
 - Agricultural, fishery/marine and forestry residues, as well as industrial sidestreams and organic wastes
- *Processed by smarter and more efficient technologies*
 - Bioprocessing by enzymes, enzyme blends and whole cell catalysts
 - Harvesting synergy, by bio-, chemical- & physical-processing +ICT
- *Producing higher value, implementing the Cascading principle*
 - => Unlocking the full potentials of the biomass!

What still needs to be done!

Developing Biobased solutions for more societal challenges

- Developing **biobased solutions for circularity in textile sector**, reducing global use of land (pesticides and water) and fossils for production of textile fibers. Ditto for plastic/packaging
- **Improved human and animal health** by new types of food supplements, pre- and probiotics, strengthening a healthy gut flora: Bio-sidestreams can be game changers in Public Health!
- **Reducing risk of antibiotic resistance** threatening the human and animal health
- Develop microbiome-fermentation technologies. Eliminating pesticide residues in drinking water, by developing biological solutions => **giving space & suitable habitats for biodiversity**
- Developing a proactive International "Strategy & Action Plan" for **sharing knowledge** of how to improve the responsible use of the global biological resources

What should be kept? Industry led iPPP JU! -and what needs to be changed? 3 suggestions:

1. *Improve copy-paste mechanism*, lifting biobased sectors at large
 - By strategically improving knowledge management: patenting & sharing!
 - Strengthening the EU industrial competitiveness *and* technology leadership, empowered by sharing the basic, pre-competitive know-how
2. *Include a low TRL component* also to Demo and Flagship
 - Fast track innovation is important for business development
3. *Include primary sector* as value chain beneficiaries: in Agriculture, Forestry and Fishery. Design Calls, giving primary sector active roles in VC!

BBI JU has been leading in promoting and implementing PPP Industry/Academia collaboration

- **This track-record should be continued & strengthened**; combining valuable and relevant new knowledge, with the drive to create technologies & solutions
- **Strengthen societal understanding of what biobased solutions** can deliver to address an entire range of societal challenges
- **Engage citizens & increase collaboration**, public organizations & NGOs. Learn!
- **Develop teaching materials** for schools and for life long learning
- **Push for Responsible Consumption of Bioresources to be part of COP Agenda**

BBI has developed many new technologies (Ex!)

=> faster from new knowledge & lab results to industrial scale production!

- Reinforced **composites** & Novel **coatings**
 - **Blue biomass** for **food, feed & cosmetics**
 - **Advanced recovery**, higher value products
 - **Smart packaging**
 - **Functional polymers** for e.g. **biomedicals**
 - New **Bio-based fertilizers** from Biorefinery
 - Pioneering CarbonCapture&Use: **Bio-CCU**
- plus*
- **Demos for Upscaling processes & production**
- **Intelligent fermentation**
 - **Protein & Bioactives** from biomass
 - **Improved bio-plastics**
 - **Wood2Textiles**
 - **Biobased coatings**
 - Modification of **aromatics**
 - Combining **ultrasonics and enzymes**
- plus*
- **Flagships for Commercial scale production**

BBI as a Joint Undertaking, Institutional iPPP has structured development of a stronger EU Bioeconomy

BBI has had an active role in EU “across sectoral collaboration”, hereby:

- **Creating framework** for the rapidly growing group of Biobased industries, “**BIC**”
- **Empowerment of SMEs** –included in consortia of established bio-based industries
- **Broadening the Scope:** More types of industries are now part of the “New Bio-based Era”
- Stimulating increased **mobility among talented young scientists** across Europe
- **Attracting investments** through e.g. co-funding talented Demos & Flagships, de-risking conditions for investors to enter into promising, interesting, EU bio-based businesses

How EU Biobased technologies, through collaboration, can create international opportunities

- *Attracting more investments* to Europe –starting a turn-around from previously, where EU mostly was seen as a source of knowledge for the world to use
- *Growing international markets* for EU bio-based industries
- Branding EU by increased Technology Export –green technologies, essential for reaching the international "Climate COP", goals and objectives
- *Stimulating stronger, mutual trade connections* by proactively seeking collaboration:
- **Building an Alliance between Africa and EU, to develop the African Bioeconomy:**
 - Ensuring optimized use of the harvest, reducing risk of food security under climate change challenged agriculture, an obstacle for stable production and harvest

Partnerships, focusing on Circular Bioeconomy can make EU leading in Circular Technologies

Hereby contributing to all three sustainability bottom lines:

- Climate, Environment and Biodiversity
- Strengthened societies, in all parts of EU, by social inclusiveness, life long learning, rural development & job creation
- Increased industrial competitiveness, also contributing to the global, green turn-around

• **Thanks for Listening,
Lene, SC-BBI**