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# PRIORITIES FOR ADDRESSING OPPORTUNITIES AND GAPS OF INDUSTRIAL BIOTECHNOLOGY FOR AN EFFICIENT USE OF FUNDING RESOURCES (PROGRESS)

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## Future Aims for Europe R&D&I Needs & Actions

**Bärbel Hüsing**

# Future Aims for IB in the EU

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- Maintain the strong and leading position
- Exploit the enabling character of IB
  - Diffusion into and adoption by new industrial sectors
  - Bioeconomy and Circular Economy
  - UN Sustainable Development Goals
- Robust policy strategies, taking uncertain future developments into account („plan B“)
- Support broad product portfolio
- Address heterogeneity of value chains and geographical concentration of IB activities
- Balance interests of industry and general public
- R&D policy as integral part of a comprehensive and coherent policy framework

# Recommendations - Overview

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- Support advanced technologies
- Multidisciplinarity of skills
- Sustainable feedstock supply
- Transfer of R&D results into commercialisation
- Collaboration along value chains
- Demand pull
- Address public perception and acceptance
- Co-evolution of regulatory environment and S&T development
- Collaboration across European countries

# Recommendations (1)

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## Supporting advanced technologies

- Stay at the cutting edge to maintain international competitiveness
- Integration of IB with „green chemistry“, (bio)informatics and others
- Non-food biomass as feedstock
- Tailored production catalysts (e.g. systems metabolic engineering)
- Scale-up; optimisation of economic, ecologic, quality parameters
- Alternatives to controversial technologies

## Multidisciplinarity of Skills

- Effective collaboration in teams of experts from different disciplines -> high expertise in one discipline, basic understanding in others
- Adaptation of curricula, create opportunities to gain relevant experience: exchanges between countries, between academia/industry, dedicated training facilities, R&D infrastructures with skill formation
- Position IB as an attractive job perspective for talented students

# Recommendations (2)

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## Sustainable feedstock supply

- Implement effective concepts for „food first“
- UN Sustainable Development Goals as guidance for biomass production (SDG 2: Zero Hunger; SDG 15: Life on Land)
- Internationally agreed standards, tools and indicators for „sustainable biomass“ and its certification
- Increase the technological potential of biomass production and use: all biomass fractions, non-food biomass, waste (regulation!)
- EU-wide information system: economic potential and availability of types of feedstocks

## Transfer of R&D results into commercialisation

- Continue efforts to overcome barriers to commercialisation
- Special focus on competencies in scale-up
- Access to capital-intensive infrastructure (pilot and demonstration plants), offering improved and complementary services

# Recommendations (3)

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## Collaboration along value chains

- Continue efforts in R&D cooperation of actors along value chains
- Improve collaboration between biomass production and conversion
- Strengthen collaboration between countries with complementary strategic focus
- Technology: establish novel networks in emerging fields, open existing networks to novel expertise

## Demand pull

- Support demand pull for IB products and processes with improved sustainability (e.g. public procurement, B2B, success stories)
- Develop and implement internationally recognised standards for sustainability assessment, certification schemes and labels
- Target-group specific information and dialogues with consumers, facilitating informed purchase decisions

# Recommendations (4)

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## Address public perception and acceptance

- Develop commonly shared future visions of IB in participatory processes
- Actively address public and consumer concerns in (value chain specific) constructive dialogues
- Results of these participatory processes should have consequences for R&D strategies and regulations

## Co-evolution of regulatory environment and S&T development

- Align R&D policy with regulatory activities (time-line, areas incentivised)
- Establish trust and credibility in IB by balancing the – potentially differing - interests of R&D, industry, consumers and the public

# Recommendations

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