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

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Presentation of Other Value Chains and Overall Conclusion

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Future scenarios for the analyzed value chains in the PROGRESS project

Value Chain	Scenario 1	Scenario 2	Scenario 3	Key Drivers
Lignocellulosic ethanol	Policy-driven uptake	Partial established production	Stagnant development	demand side policy
Bio-based plastics	"De-risking strategy"	High oil price, no additional policy measures	High attention for (micro)plastics	oil price, demand side policy
Enzymes	Technology push	High oil price, but consumer concerns	Coordinated bioeconomy policy, but global competition	oil price, consumer acceptance, demand side policy
Production of Bio-pharmaceuticals	High demand for biopharma	Gene therapy breakthrough	Stagnant development	Innovation push, demand side policy
Biotech Flavours and Fragrances	Price driven market	Carbon footprint as market driver	non GMO production: Alternative niches for the EU	Consumer acceptance, regulation, Innovation push
Microbiomes	Optimal development	R&D focus	Supporting regulation, negative public perception	Consumer acceptance, regulation, Innovation push

Important Drivers & Barriers in the Scenarios

- Cost reduction as key challenge in all value chains (also in the high-price segments)
- Advanced technologies for some value chains of key importance; however, consumer acceptance is decisive factor for their use in some segments (e.g. for food, textiles)
- Feedstock availability and prices are key drivers in some of the value chains, but not in all
- Current status and challenges for effective collaboration networks differ between the value chains
 - bottleneck in emerging value chains (e.g. microbiomes) or in existing ones, where novel approaches enable an innovation push (e.g. flavors & fragrances)
 - for highly-matured value chain question arises whether they are sufficiently open for alternative, competing concepts
- Product regulations have significant impact on growth opportunities and innovation incentives; impact differs significantly between value chains

Important Drivers & Barriers in the Scenarios

- Principally important role for R&D&I policy in the value chains,
 - but, in some cases the markets are dominated by large companies that are less dependent on funding and have their own agenda
 - gap in cost competitiveness can often only be partially closed by R&D&I policy
 - some issues are relevant across many value chains: Scale up of lab results to production, efficiency of production organisms, etc.; cross-cutting issues across the value chains (acceptance, etc.)
 - needs regarding fostering collaboration across countries, certain R&D&I topics, TRL-stages, etc. differs between value chains

⇒ Cross-cutting recommendations (presented in the afternoon) must be combined with value-chain specific issues (forthcoming Deliverable 5.1)