



Bioökonomie
REVIER

Regionalization of Bioeconomy

The path to sustainable economies and
stewardship to natural resources

Prof. Ulrich Schurr

Sustainable Development Goals and Bioeconomy



Improve primary production and utilisation
More efficient secondary use and conversion
Sustainability and ecology targets
Societal goals in focus
Systemic Integration and regionalisation



What characterizes a region?

Sustainable Development Goals

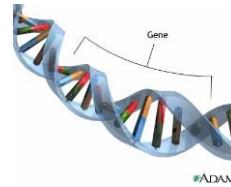


Resources and Frames

Natural resources



Science and education



Markets (regional)



Human resources



Legal framework



Trade (regional/ global)

Actors/ Stakeholders



Science



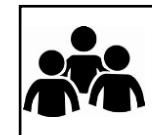
Economy



Region



Media



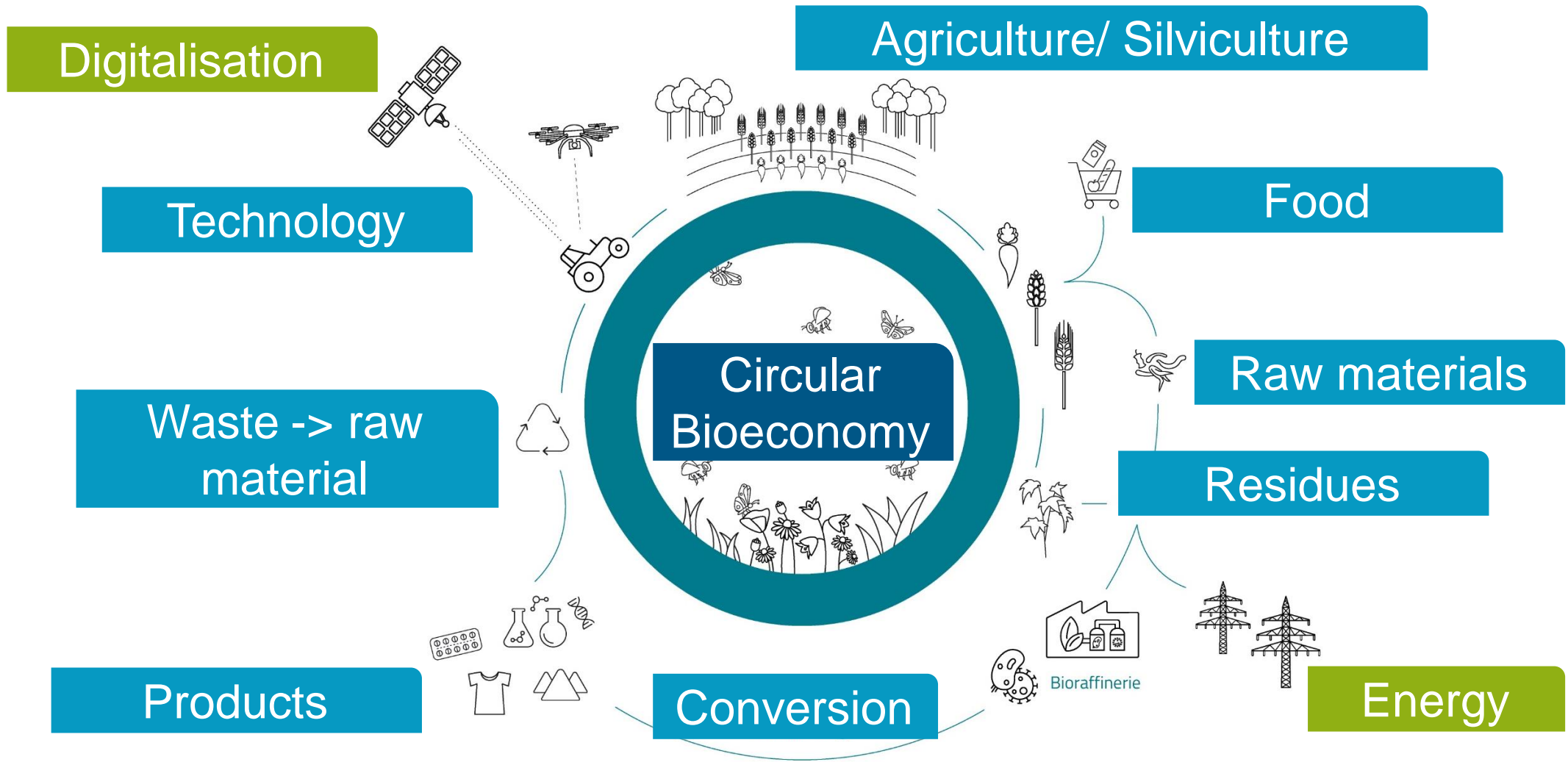
Public

Implementation of bioeconomy solutions will only be implemented if:

- effective for solving a concrete problem
- affordable (technological, economic, social)
- depending on the initial situation and general conditions



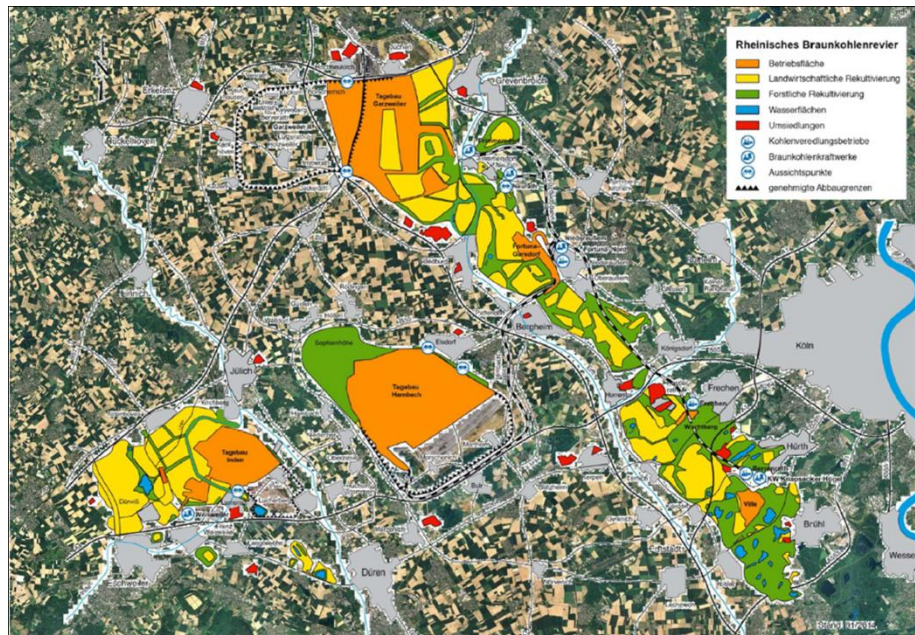
Let's talk about solutions!



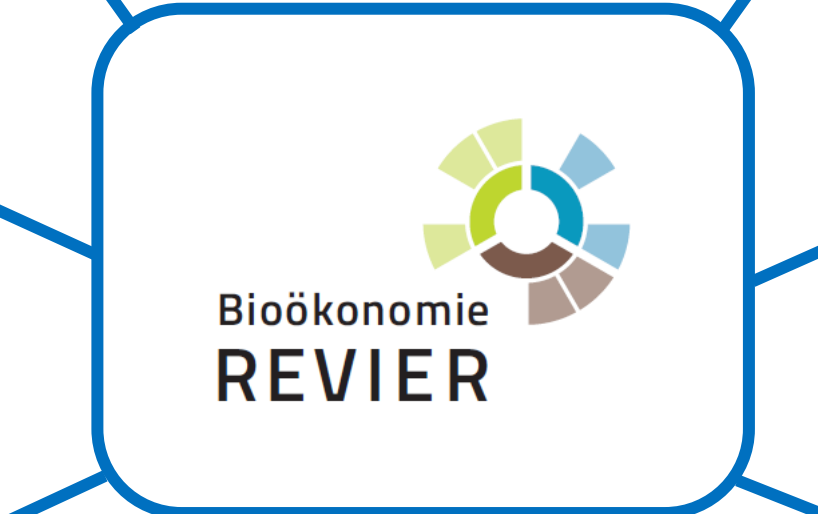
Regions in change: coal phase-out regions as a hotspot example

- Lignite mining will expire by 2038 at the latest
- 9,000 jobs directly, 93,000 affected in associated industries
- 1.4 billion €/ a income will be lost from the region

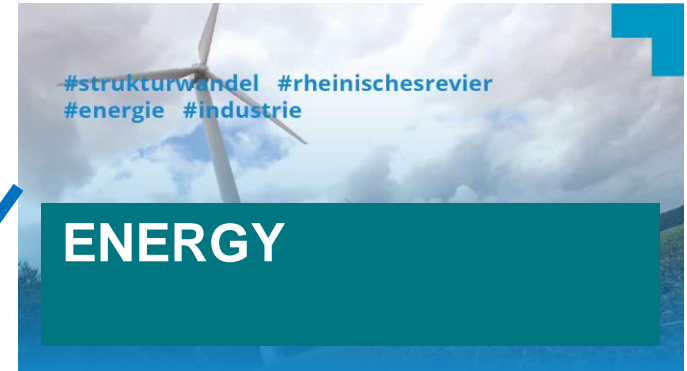
1984 - 2017



BioeconomyREVIER - Integral part of the REVIER



Development of a model region
for sustainable management
and living



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Global goals –

Regional contributions



Global Objectives



National Policies

**Bioeconomy
Strategy**

**Coal
Phase-Out**

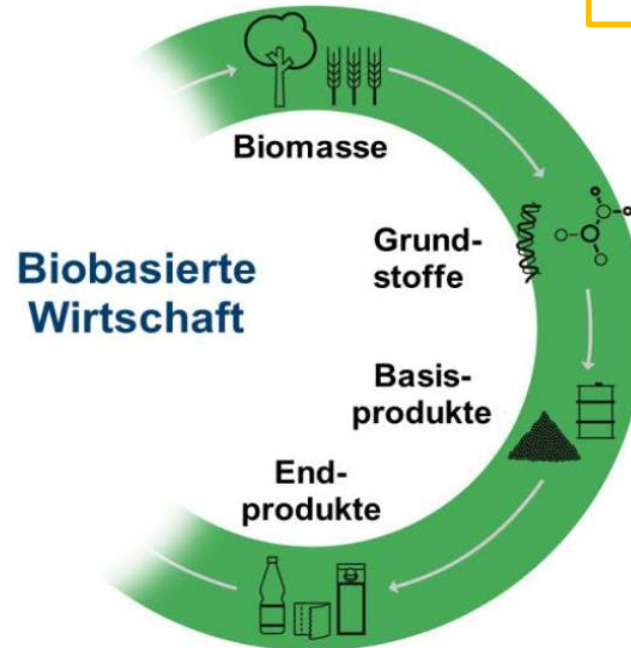
Regional Implementation

Structural Change



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Real region for a sustainable bioeconomy in structural change



Replacement of fossil resources

Innovative food and feed



Circular economy

Model Region BioeconomyREVIER
Climate protection and value creation/ employment inclusive

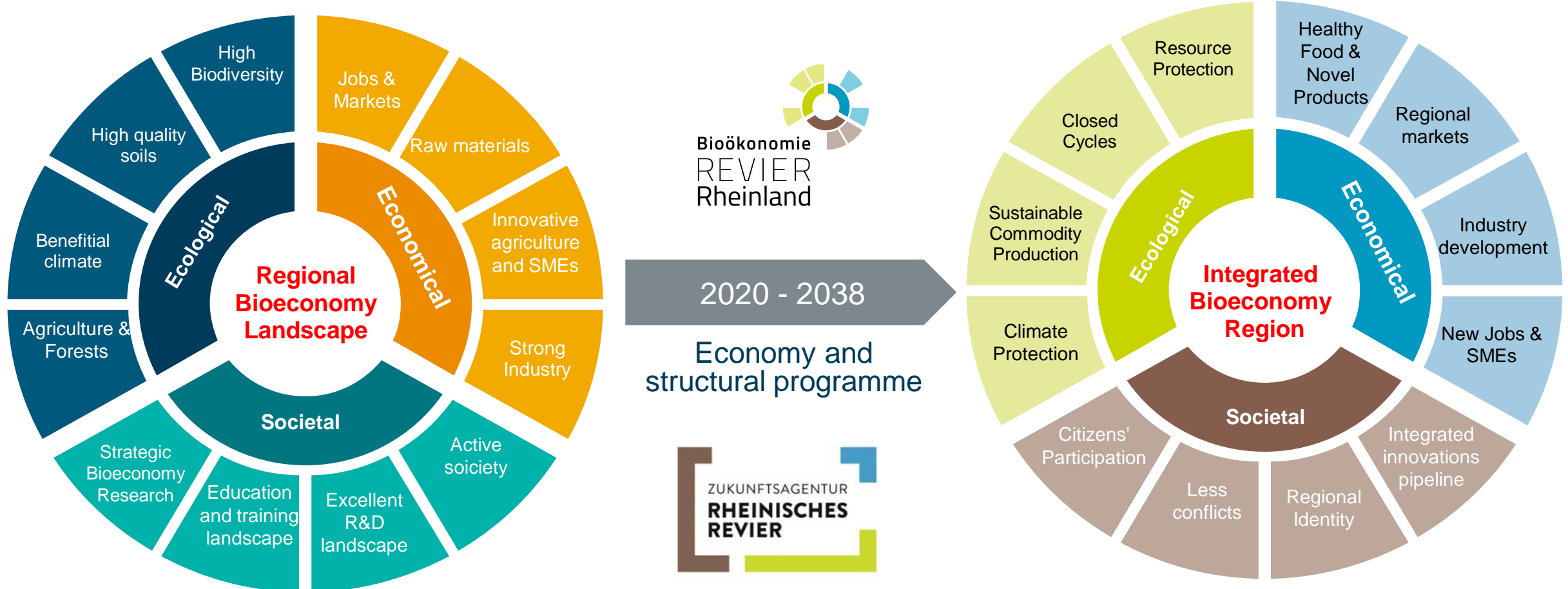
New products, processes and services

Using existing strengths

Developing key technologies



What can bioeconomy offer in structural change?



BioökonomieREVIER – Building on strengths

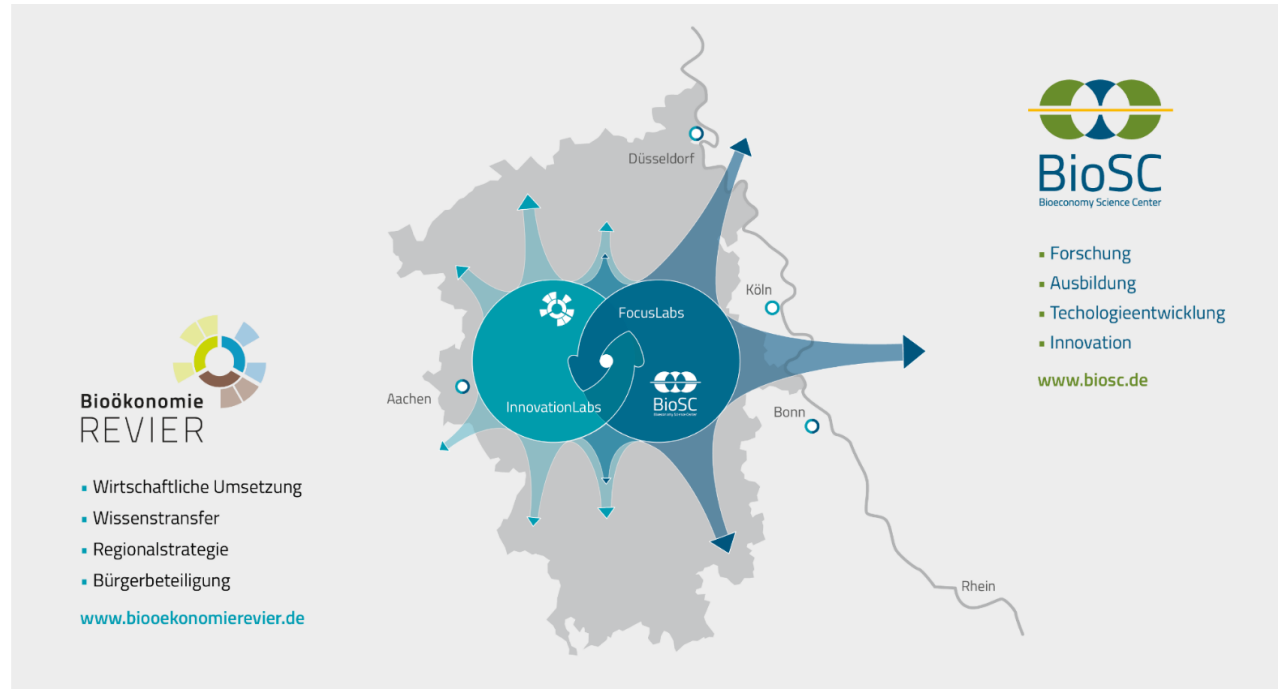


- Favorable natural conditions and resources (soils, climate, etc) for agriculture - productive and innovative
- Industry: Strong (energy-intensive) food industry and regional and supra-regional markets (paper, chemicals, energy, ...)
- Jobs: high and low qualifications
- Activation in society/population
- Science and Training Region Bioeconomy



BioökonomieREVIER (From Invention to Innovation)

Real-Lab for a sustainable bioeconomy



Competence Center for Integrated Bioeconomy Science - regional and global

- Focus on science
- Uses Rheinisches Revier as a "real lab" with the aim of pursuing new bioeconomy science

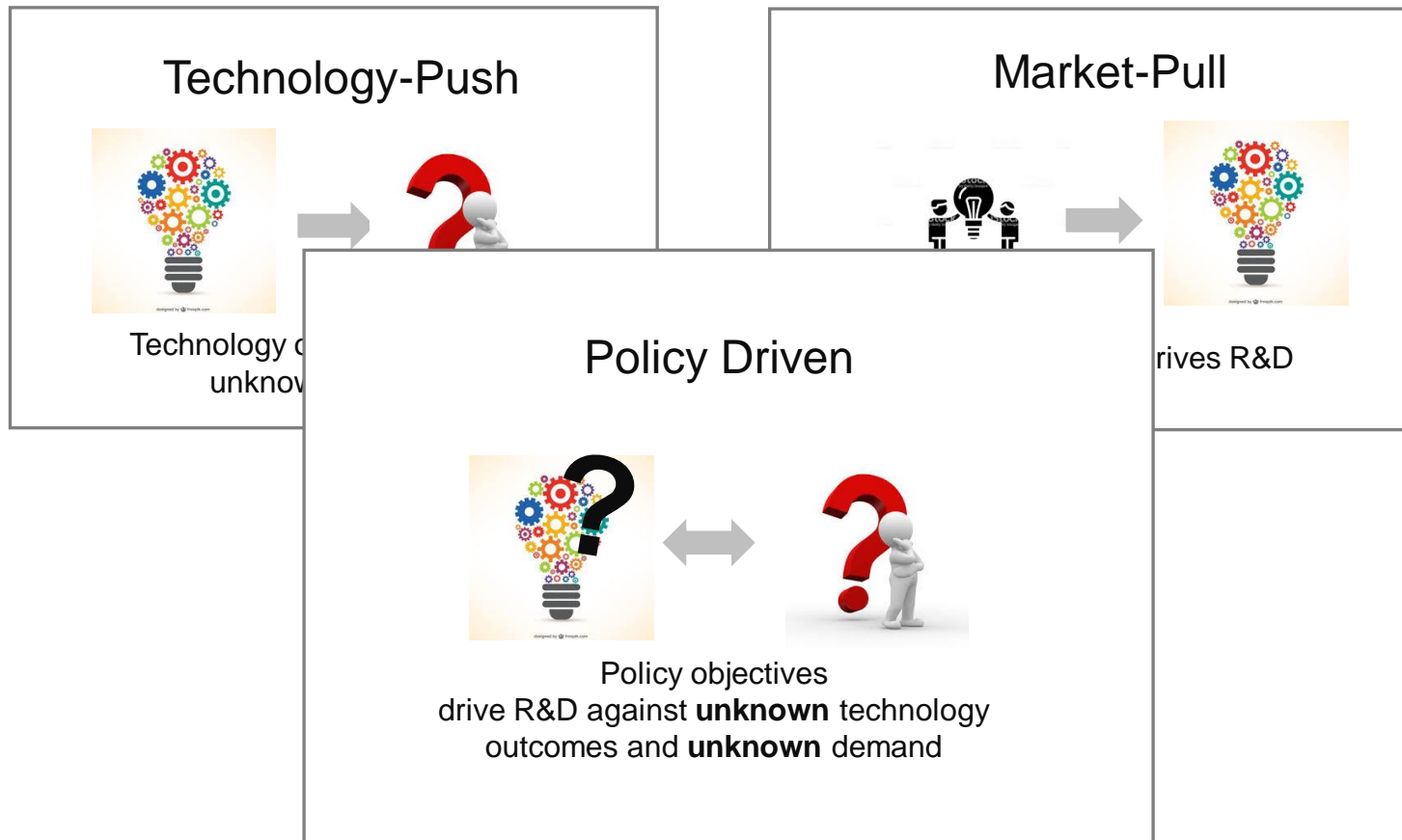


- Structural change oriented
- Dominant regional
- Science and beyond (much with civil society and business)



LIVING LAB TRANSFORM2BIO

Transformation is often driven by innovation...



Objectives:

- Description of the political and regulatory frameworks
- Characterisation and clustering of Bioeconomy regions
- Deduction of potentials and limitations for the *Region*
- Establishment of the ***Stakes2Bio Lab***

BioeconomyREVIER structure (initial phase)

Coordination office

Coordination & Design



Development of the Regional Strategy

- Coordination of regional transformation
- Involvement of all relevant actors
- Cross-sectoral networking and integration
- Start-up ecosystem and S2B
- Regional/Local Bioeconomy Profiles
- Knowledge transfer and society´ participation
- Future perspective and regional identity

BIOBoosteRR

Powered by BioökonomieREVIER



Bioeconomy start-up programme

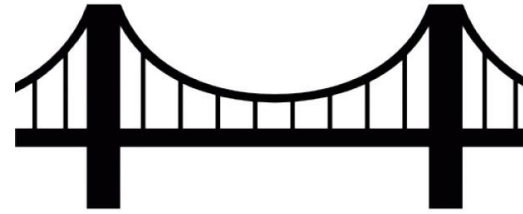


Modellregion für nachhaltige Bioökonomie
regional. innovativ. zirkulär.



BRIDGING RESEARCH AND PRACTICE

Combine expertise and capabilities across research organisations



Integrate practical topics from industry and society

- Type 1: Qualification projects: from the idea to the product
(Improving technology and solution readiness levels)
- Type 2: Innovation platforms and interface labs
- Type 3: Novel concepts
- Type 4: Innovation management



Bioeconomy innovation cluster REVIER

Thematic bundling of the innovation labs

1. Sustainable, **innovative agriculture** with digitalisation and automation
2. **Renewable raw materials**, bio-based raw materials and resource efficiency
3. Coupling bioeconomy with renewable energy systems (**biorefinery**)
4. Sustainable land use and **ecological aspects**

Innovative agriculture

Integrated biorefinery

Biotechnology &
Plastics Technology

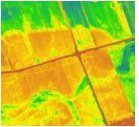


Bioeconomy Innovation Cluster REVIER

Innovative agriculture



BrainergyLab: Agricultural robotics and digital agriculture



DG-RR: Digital Geo Information system



CircularPhytoRevier: Integrated value chains of herbal, medicinal and medical plants



AgroInnovationLabs: Field laboratories for resource-efficient crop production



AgriFEe: Agro-Food-Energy Park

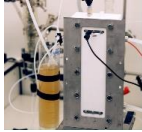


AlgaeFertilizerBox: Algae for food, feed, materials and chemicals



Bioeconomy Innovation ClusterREVIER

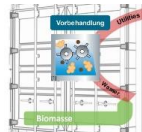
Integrated biorefinery



UpRePP: Upcycling regional organic residues



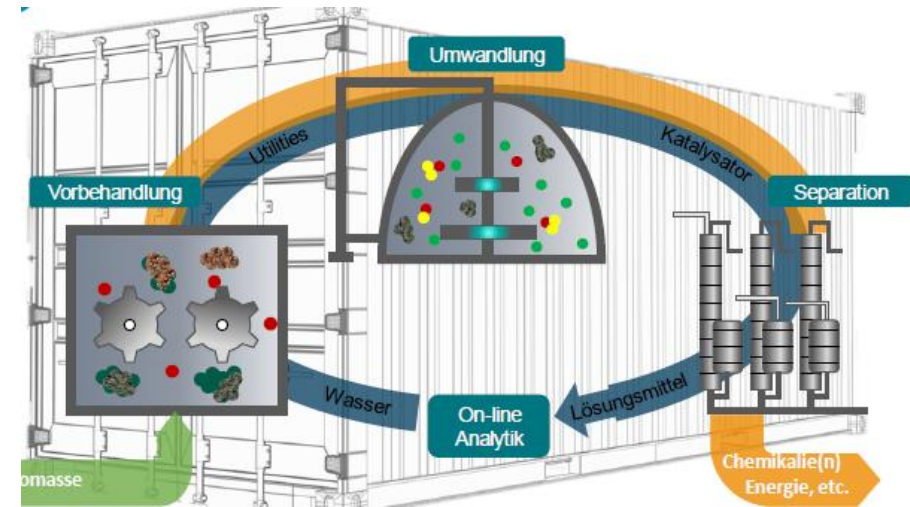
ZeTA: Electrochemical Separation Technology



DeMoBio: modular biorefinery concepts



GasValor: gas fermentation



Bioeconomy Innovation ClusterREVIER

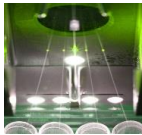
Biotechnology & Plastics Technology



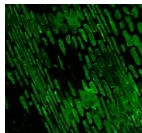
AutoBioTech: digitalisation of microbial strain and bioprocess development



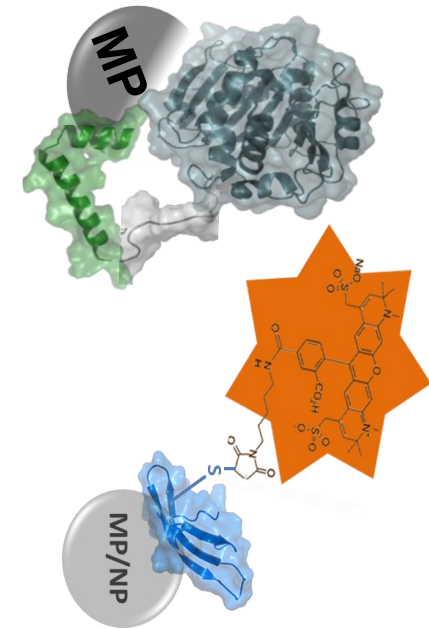
PlastiQuant: Microplastic-free food and feed systems



SenseUp_Prot: Production platform for biopharmaceutica



ProtLab: Tailor-made protein products



Integrated value chains and networks



Agro-Food-Energy Systems



Agro-Forestry Systems



Medical and herbal value chains



Sustainable packaging



Construction beyond wood



Novel paper



Upcycling of food waste



Bioplastics



Bioeconomy @ home





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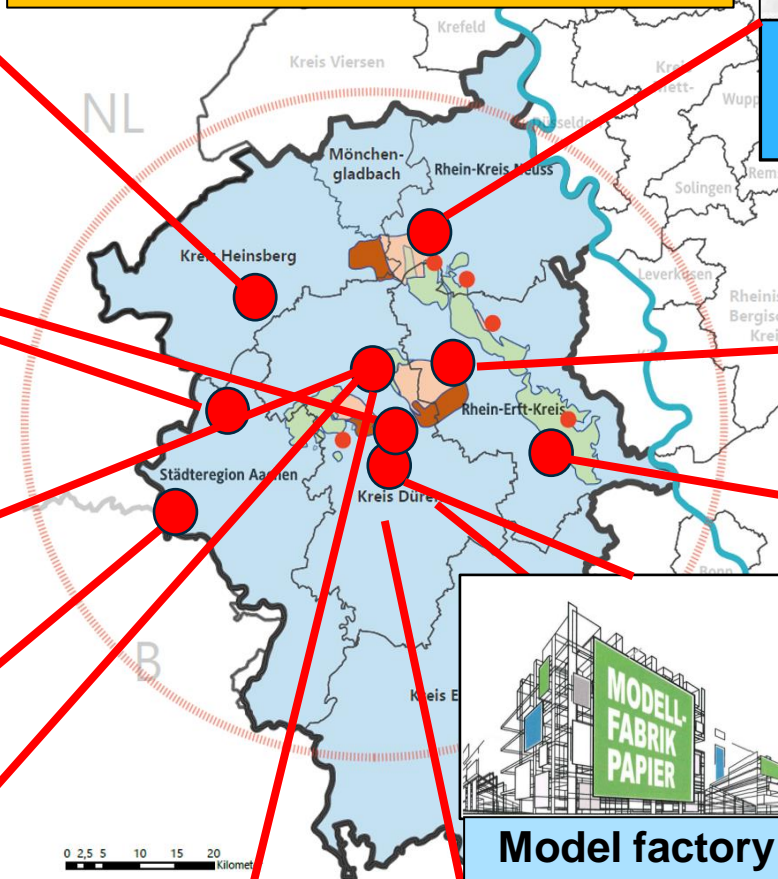
Profile locations in the region



A44n: Innovative
agriculture



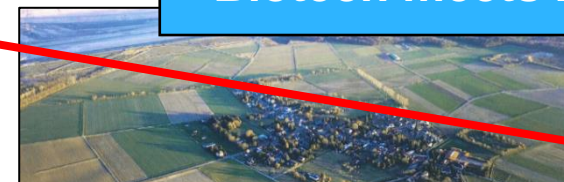
Agriculture and healthy diets



Biotech meets Food



Innovation room
BioTexFuture



Chemiepark
Hürth

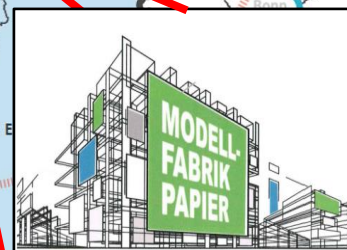
Sustainability Forum



Re
BAU

Bioeconomy and
Construction

Modellregion für nachhaltig
regional, innovativ, zirkulär.



Model factory
Paper



Fibre center



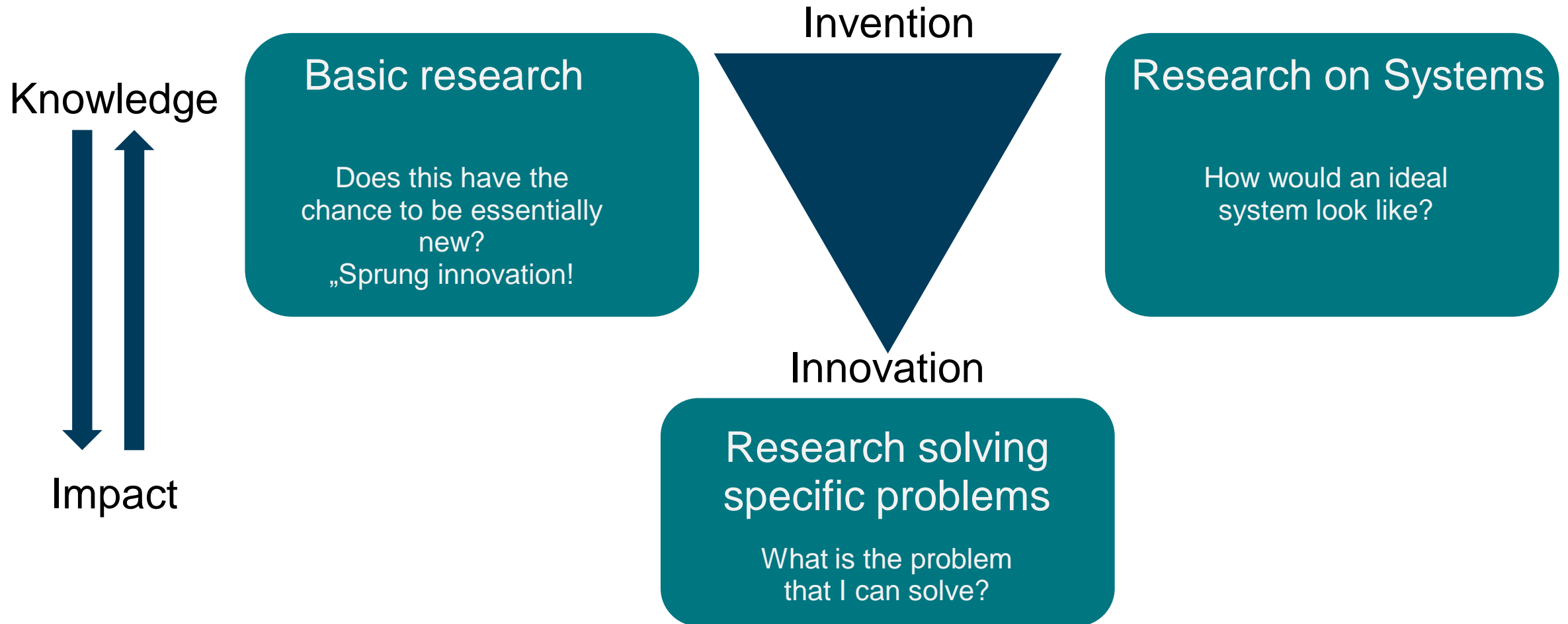
HighTechHub
BrainergyPark



RWTH AACHEN
UNIVERSITY



From science Promiss to practical impact from Invention to Innovation





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