



BIOTRANSFORM

TRANSITION PATHWAYS TO CIRCULAR BIO-ECONOMY

Working group session: "Governance & financing challenges for circular bioeconomy"

Overview of BIOTRANSFORM

Johannes Kissler

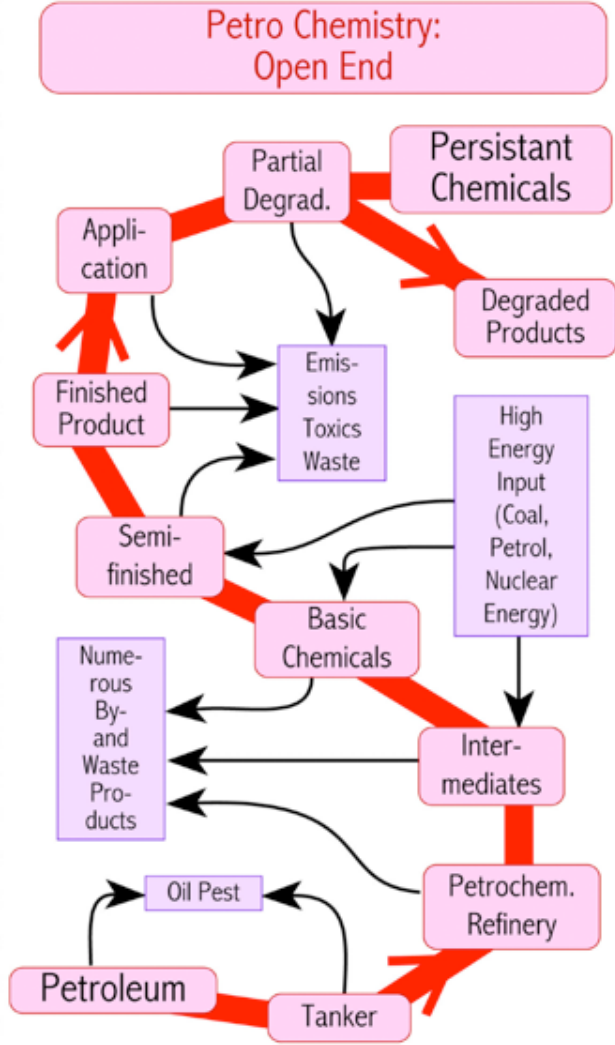
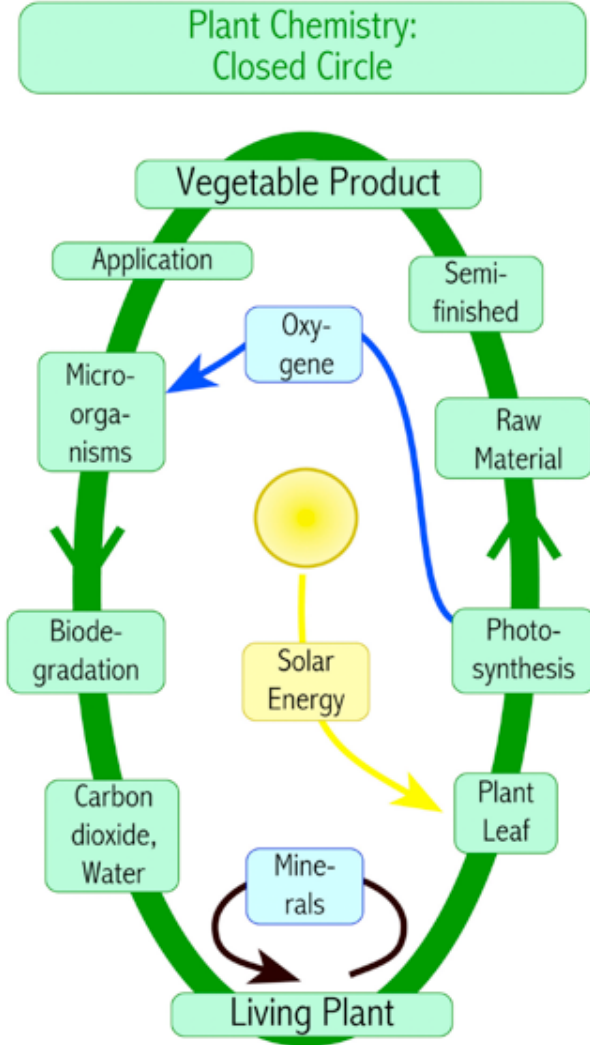


**alchemia
nova**
circular by nature

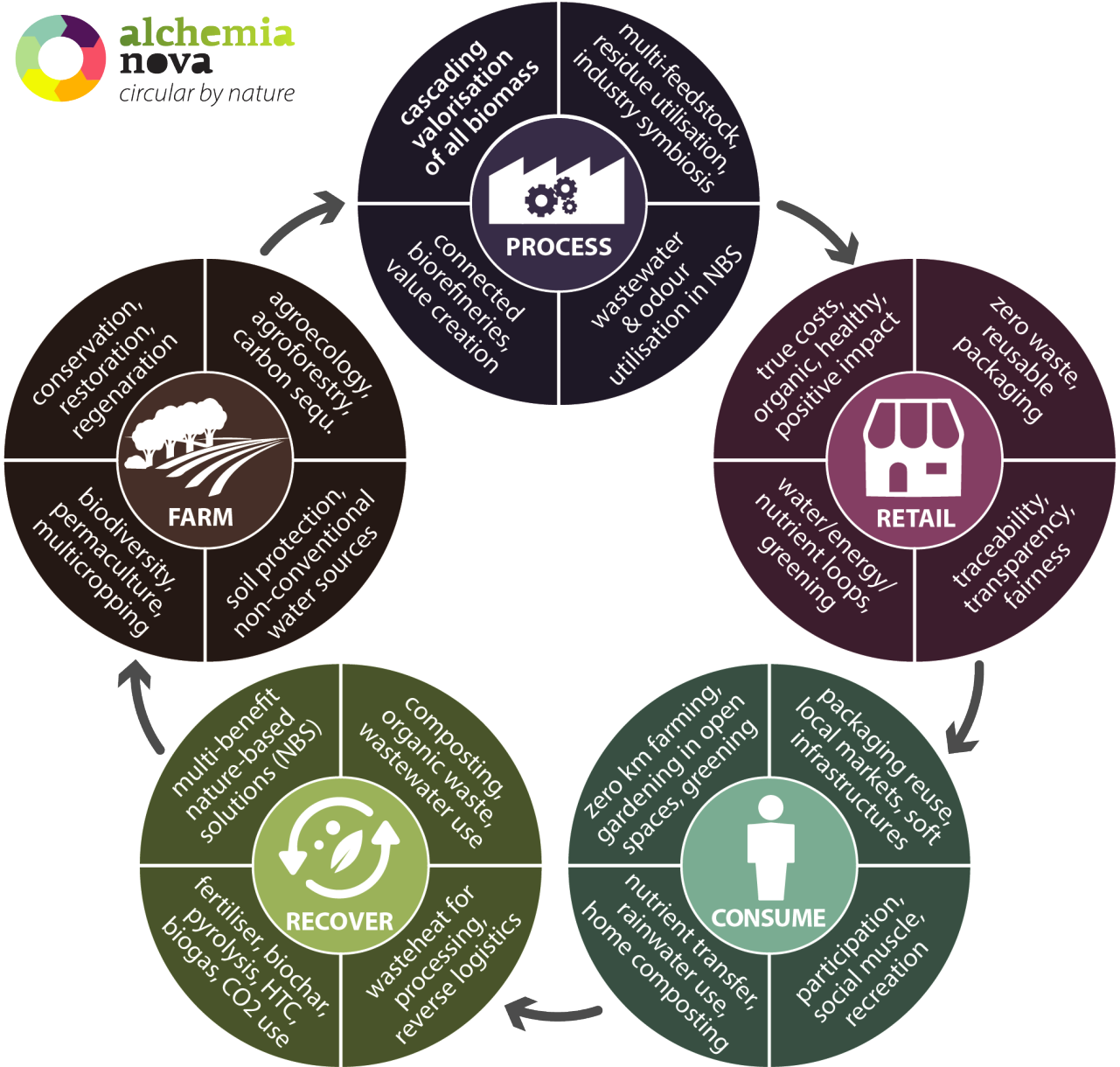


BIOTRANSFORM: Circular BIOeconomy TRANSFORMartion for whole regions through connected biorefineries

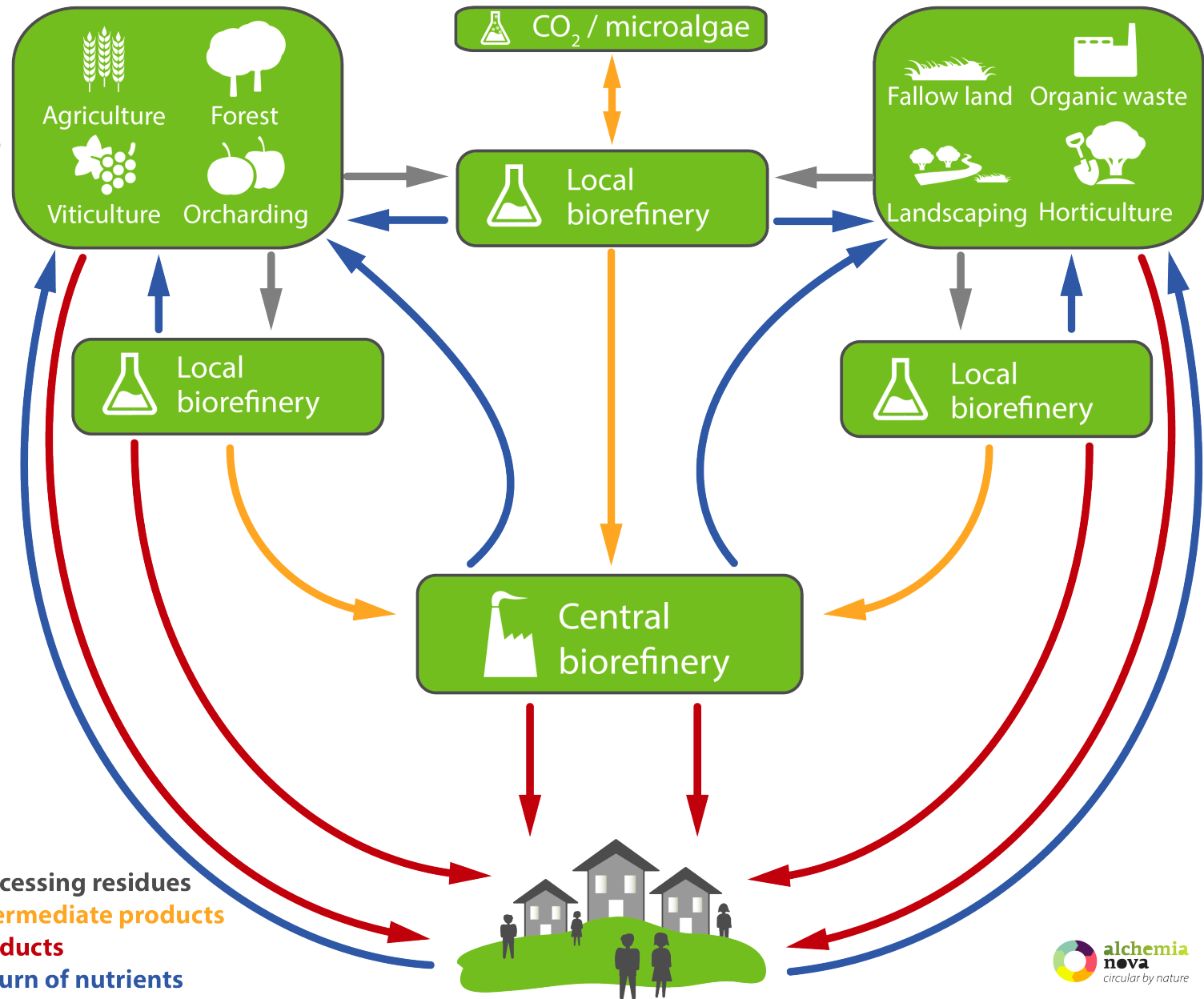
Challenge



Bioeconomy value cycle

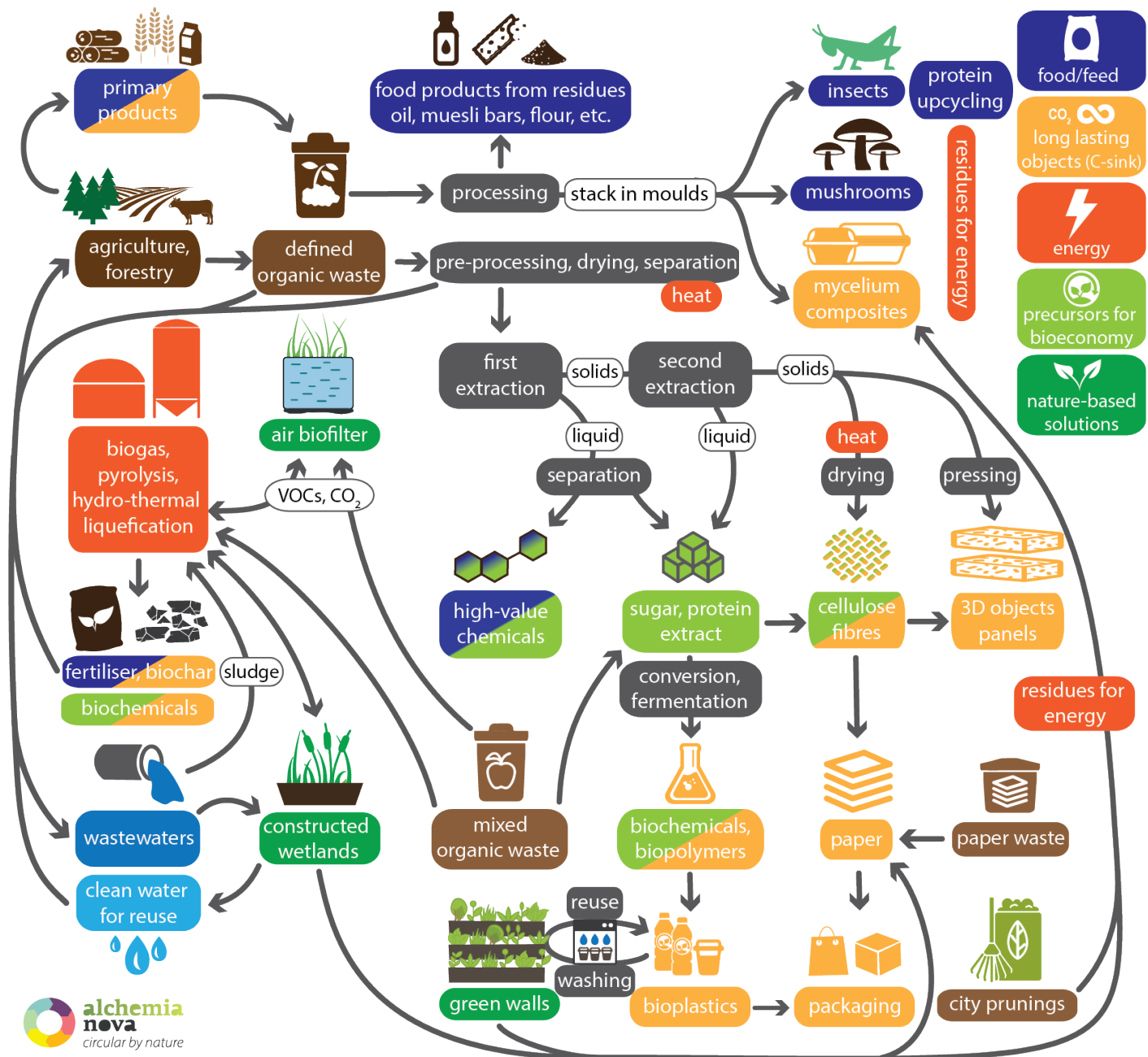


Connected biorefineries



Bio-cascading

- Substitution of fossil-based products
- Increase of resource and land-use efficiency
- Increase of value generation
- Decrease of dependencies
- Returning nutrients to agriculture



Background information

N°	ORGANISATION NAME	COUNTRY	TYPE
1	Teknologian tutkimuskeskus VTT Oy	Finland	RTO
2	alchemia-nova	Austria	SME
3	Luxembourg institute of science and technology	Luxembourg	RTO
4	Vlaamse Instelling Voor Technologisch Onderzoek N.V.	Belgium	RTO
5	Fundación Corporación Tecnológica de Andalucía	Spain	NPPO
6	Cluster of Bioeconomy and Environment of Western Macedonia	Greece	NPPO
7	Cluster Industrielle Biotechnologie – CLIB eV.	Germany	NPPO
8	BioEast HUB	Czech Republic	NGO
9	Association of Cities and Regions for sustainable Resource management	Belgium	NGO
10	Q-PLAN international Advisors PC	Greece	SME

Project duration: **October 2022 - March 2025 (30M)**

Topic: [HORIZON-CL6-2022-CIRCBIO-01-03](#) - CSA

Budget: **€ 2M**

Sister project: [SUSTRACK](#)



Objectives



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Understand the state of play of in our 6 case study regions

- *Forestry, agri-food, lake ecosystems, lignite and minerals, chemicals, tourism*
- *Analyze framework conditions, drivers & barriers*
- *Establish suitable KPIs for the proposed transition pathways*



Develop and deliver an “assessment package”,

- a) Resource flow analysis tool including circular innovations*
- b) Quick environmental, social, and economic assessment tool*
- c) Logistics management tool*



Provide comprehensive governance guidelines and recommendations for policymakers

- *Help set priorities for the transition towards circular bio-based systems & provide financing guidance*



Ensure efficient exchange of best practices

- *Peer-learning programs*
- *Awareness-raising campaigns*

Case study regions relevant for Europe



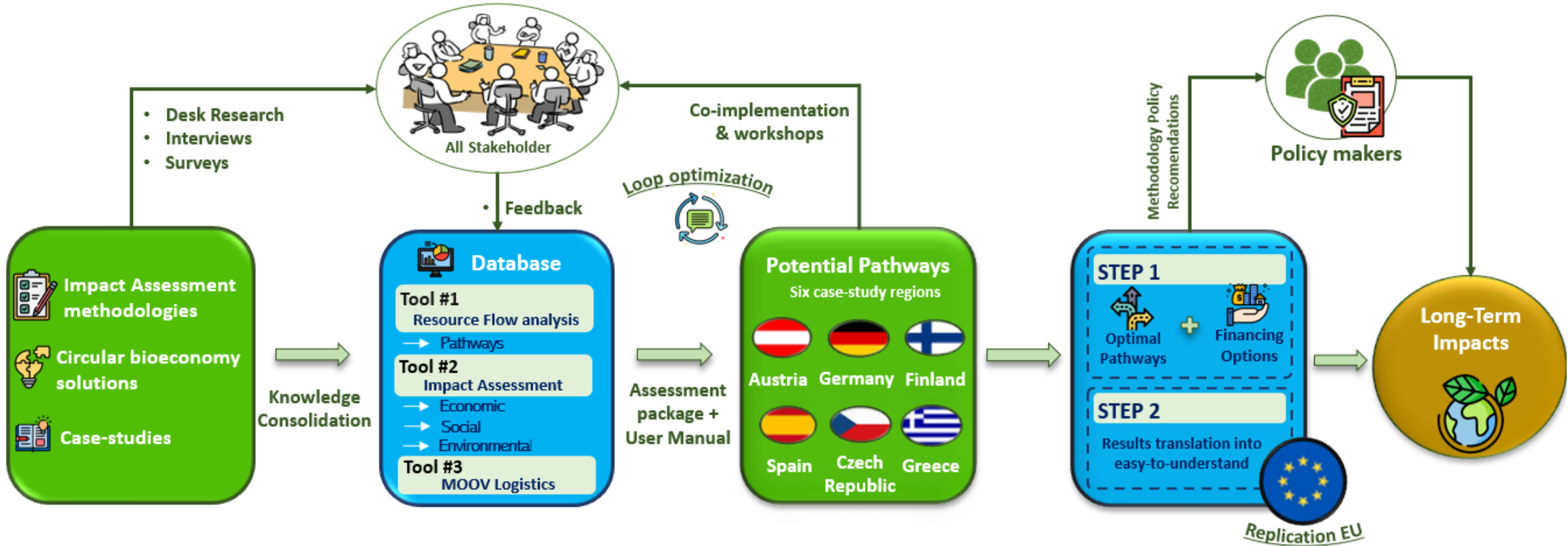
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Case-study region	Main bioeconomy topics	Potential circular bioeconomy innovations	Relevance for Europe
	Residues Agriculture (esp. Soy beans, Vineyards, Poaceae (cereals and grassland for pasture)), mud from the lake Tourism & traffic	extractions of vine biomass, wine processing upgrades, sustainable intensification of land use, mud & lake vegetation utilisation	~3M ha vineyards in EU, ~500,000 lakes in Europe larger than 1ha
	hot springs & associated spa tourism , beverages & food production	sustainable & zero waste tourism with recovery and reuse of nutrients for food, natural extracts for beverages	>37,000 spa facilities in EU >€33B market size, sustainable tourism strategies well replicable
	decarbonisation of energy production , agriculture, mining, fur & leather	symbiosis between resource flows, agricultural efficiency innovations, naturally treated wastewater for irrigation, natural leather tanning, holistic use of animal residues	transition strategies for coal fire plants in Europe (~18% of energy production), leather & fur production in EU worth more than €21B
	tourism , retail, transportation, underdeveloped industry, agriculture, olive , citrus, tomato	Biomass valorisation, sustainable intensification of land use, agroforestry, bioengineering for water guidance & storage, wastewater reuse & greening	~4,6 million ha olive orchards in EU, tourism is the third-largest socio-economic activity
	forestry , chemical production	higher valorisation of forestry residues & by-products, conversion to bio-commodities, agroecology, nutrient loops	43% of EU is covered in forests, very high dependency
	chemical industry, transformation of lignite mining area to bioeconomy region , maize & beets, manure, biogas	biobased intermediates (esp. secondary resources) & specialties for the chemical industry, biological transformation of industry, agroecology, waste valorisation	chemical industry worth more than € 125B in EU, all high-industry regions, securing sustainable bio-based resources

Methodologies and tools



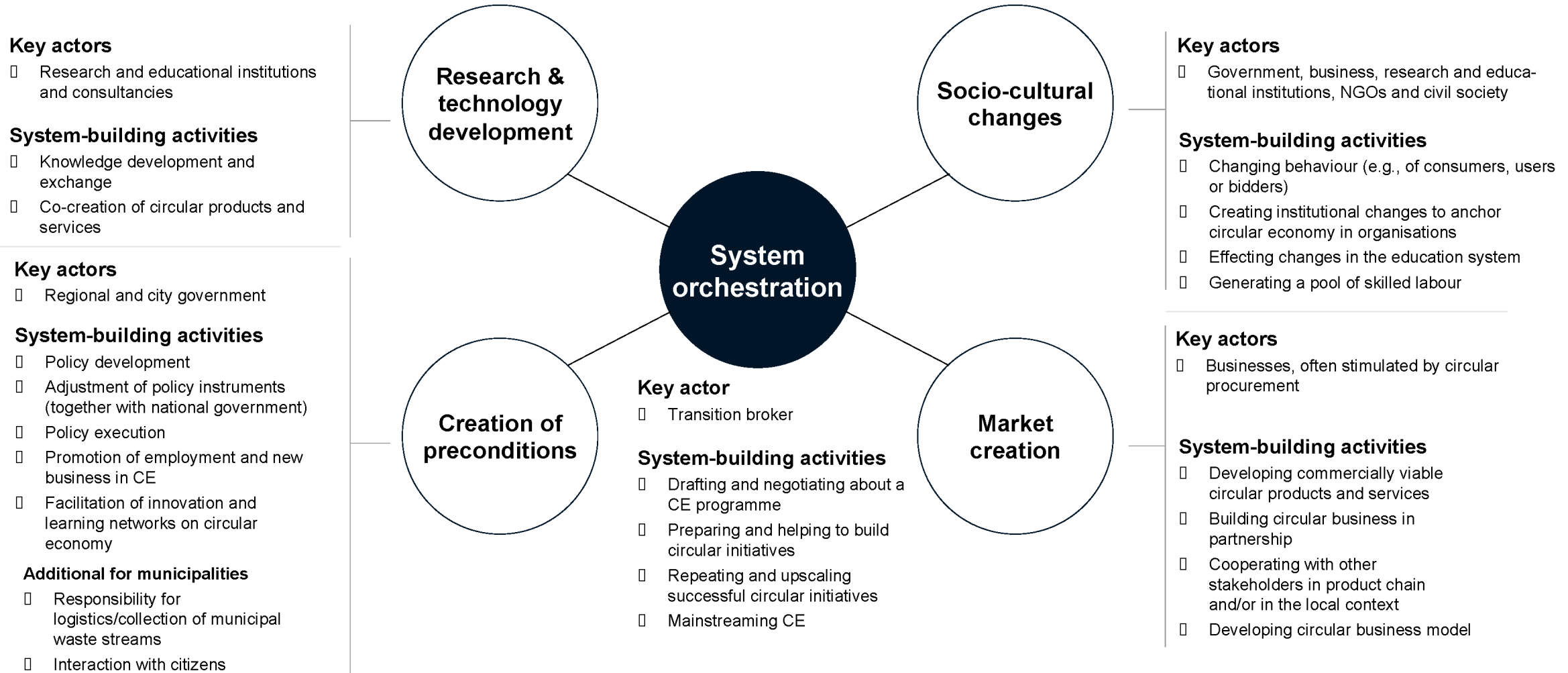
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Transition brokers - regional governance



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Source: Jacqueline Cramer in Sustainability 2020 <https://doi.org/10.3390/su12125015>

Questions and Answers



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Thank you!

