



POWER4BIO
REGIONS FOR
BIOECONOMY

Developing regional bioeconomy strategies in CEE regions: results and lessons learned.

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FOR BOOSTING THE REGIONAL BIOECONOMY IN CEEC

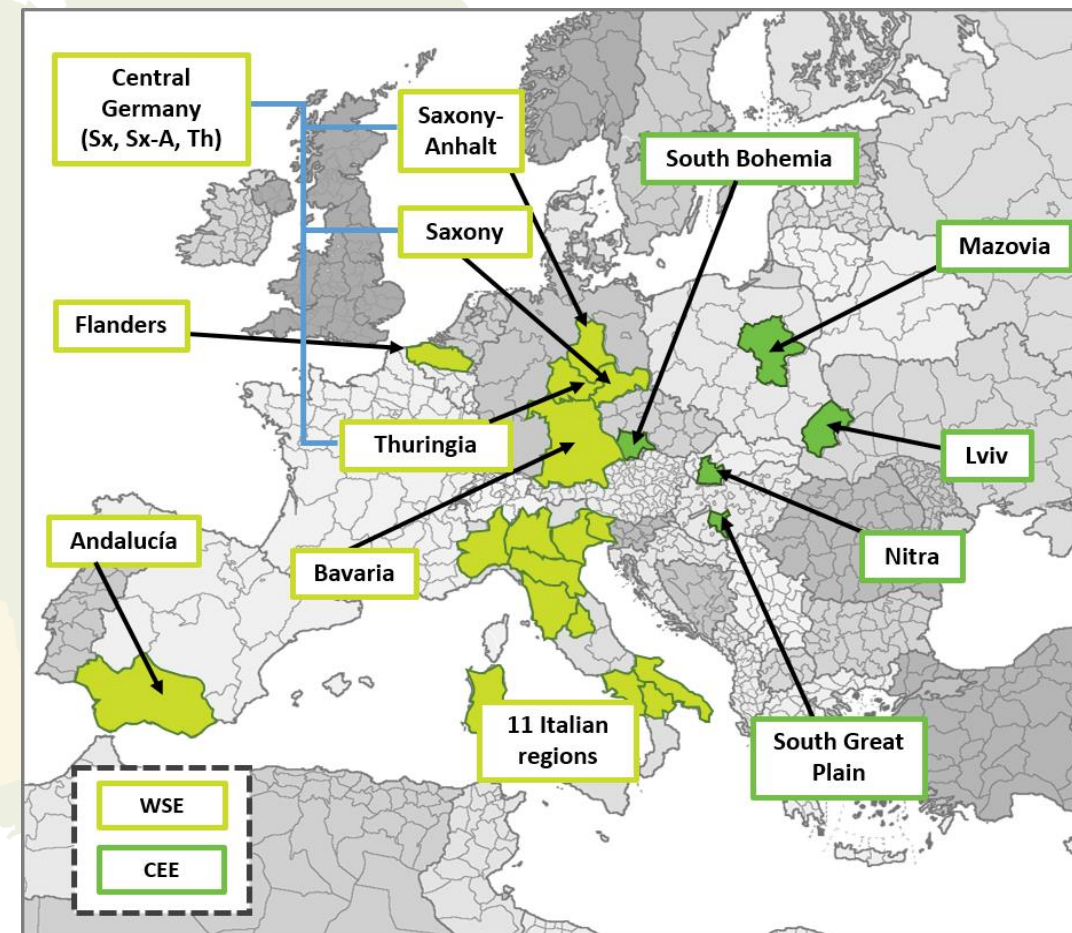
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Participant CEE Regions

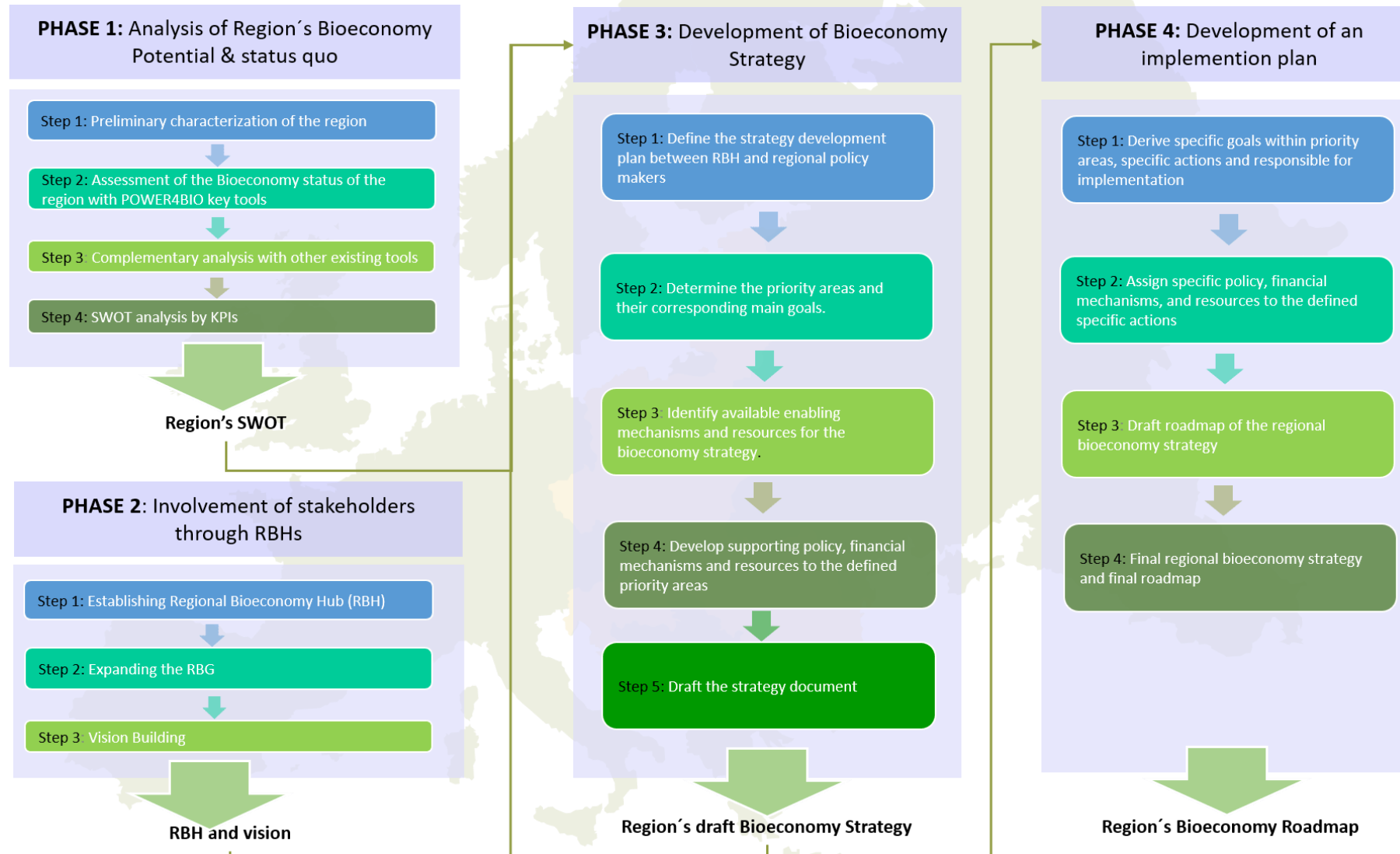
5 Central and East European regions

- Hungary: Southern Great Plain
- Ukraine: Lviv
- Poland: Mazovia
- Czech Rep.: South Bohemia
- Slovakia: Nitra

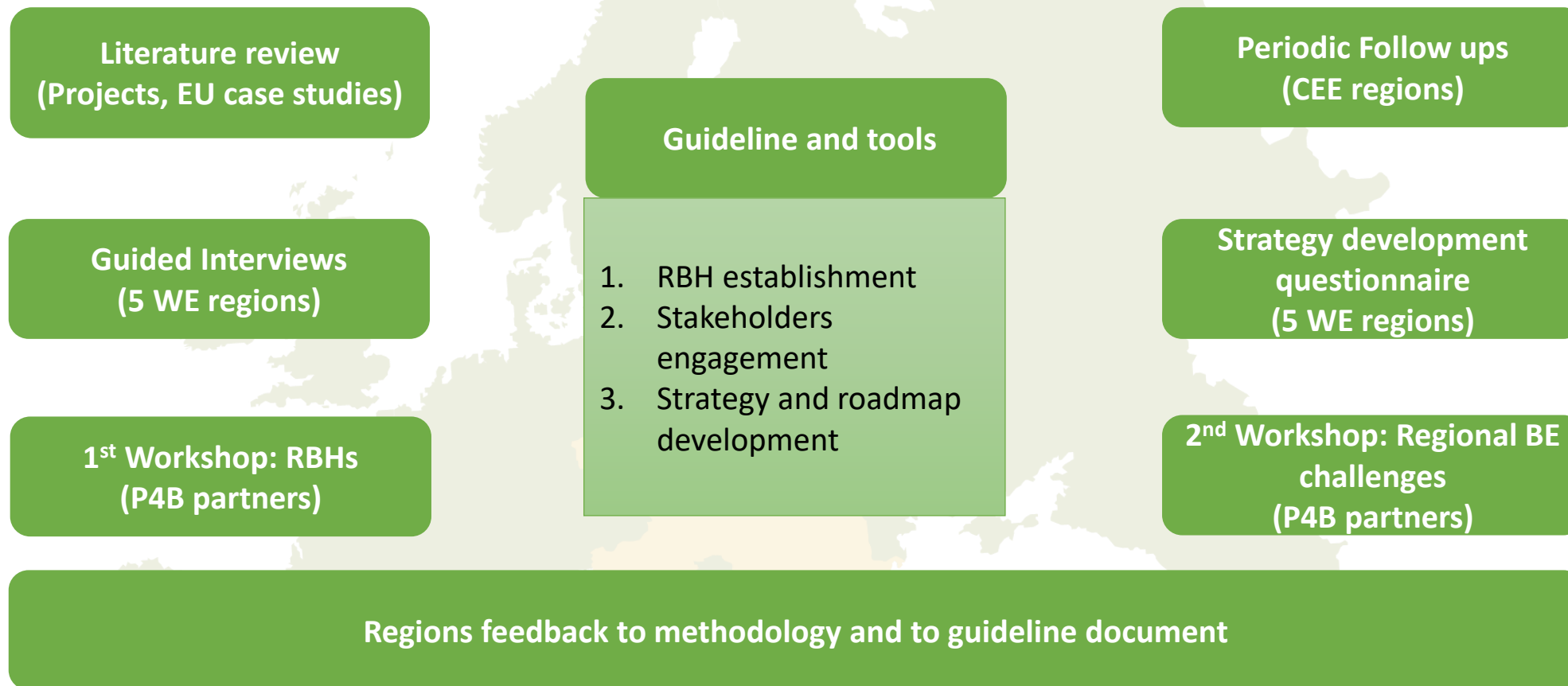


POWER4BIO Participant regions

Methodology for new Bioeconomy Strategies and Roadmaps.

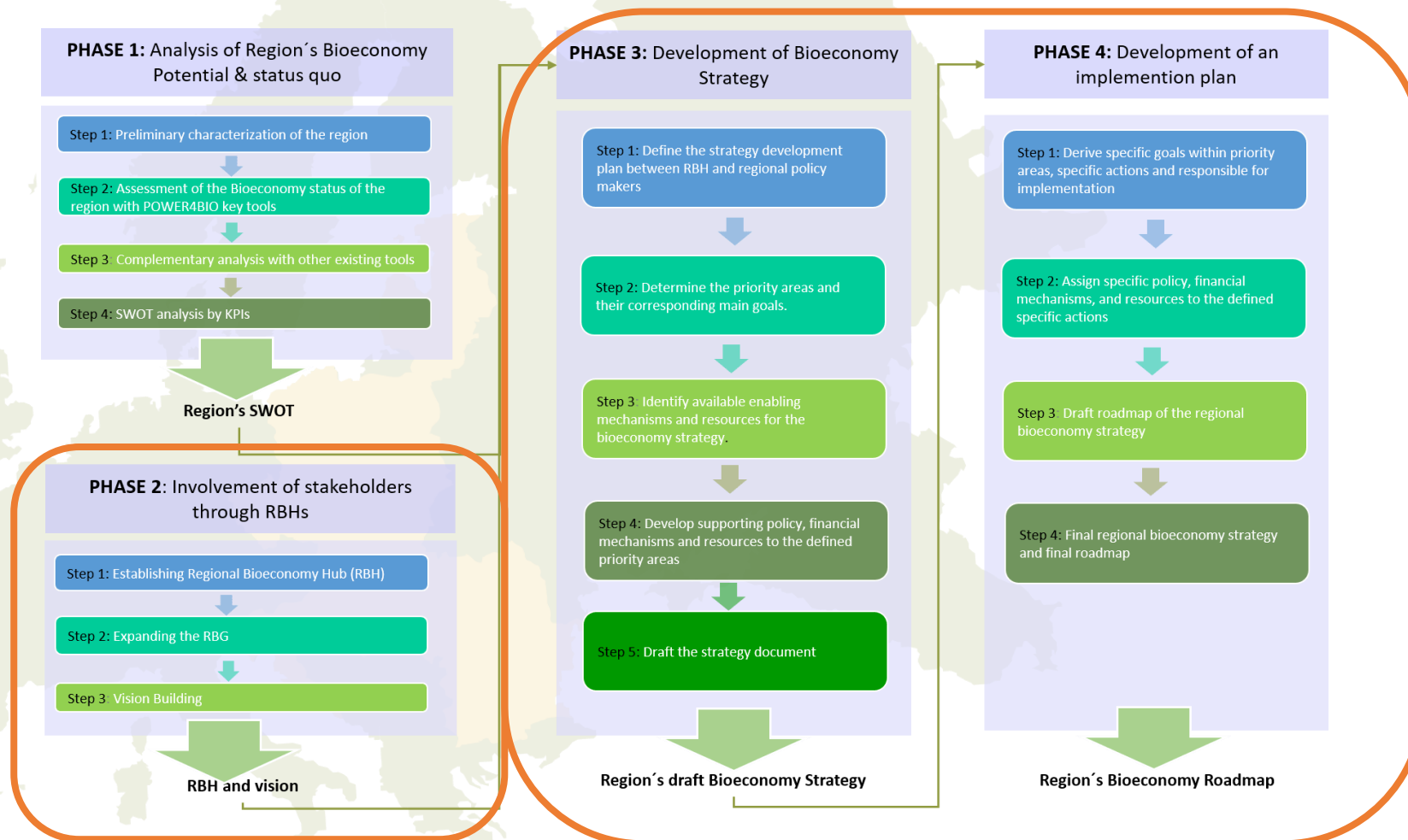
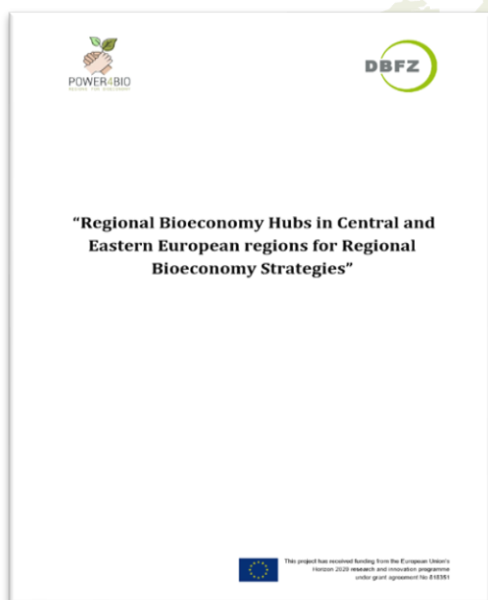


Guideline: a collaborative process with POWER4BIO regions.



Guideline Results

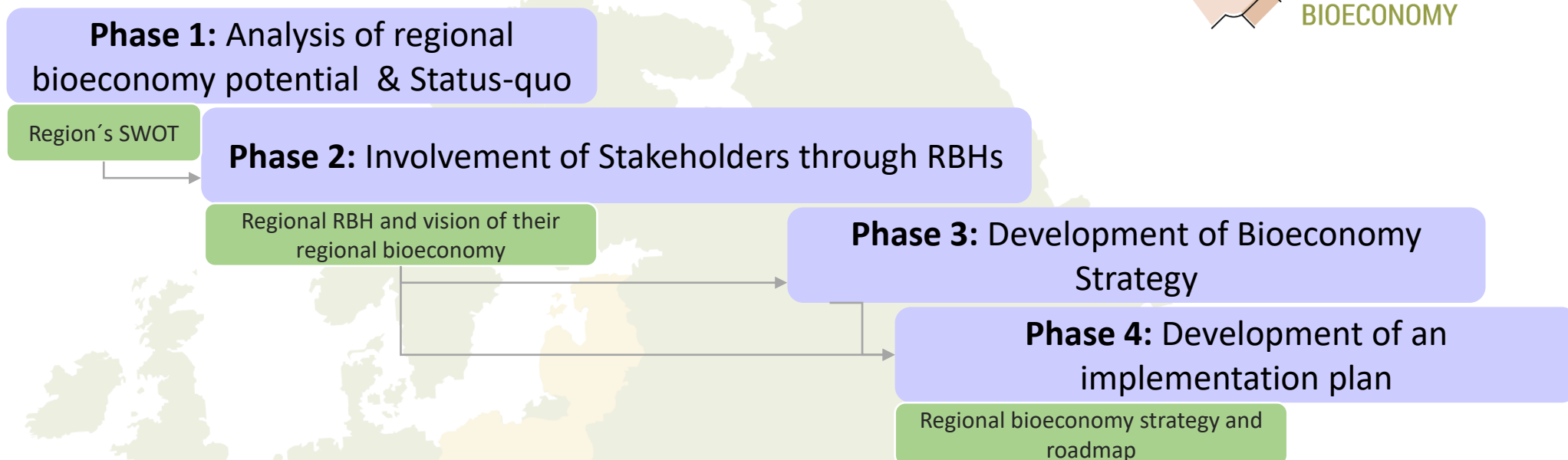
Guideline



Summary of CEE new Bioeconomy Strategies



Overview of Bioeconomy Strategies in CEE regions



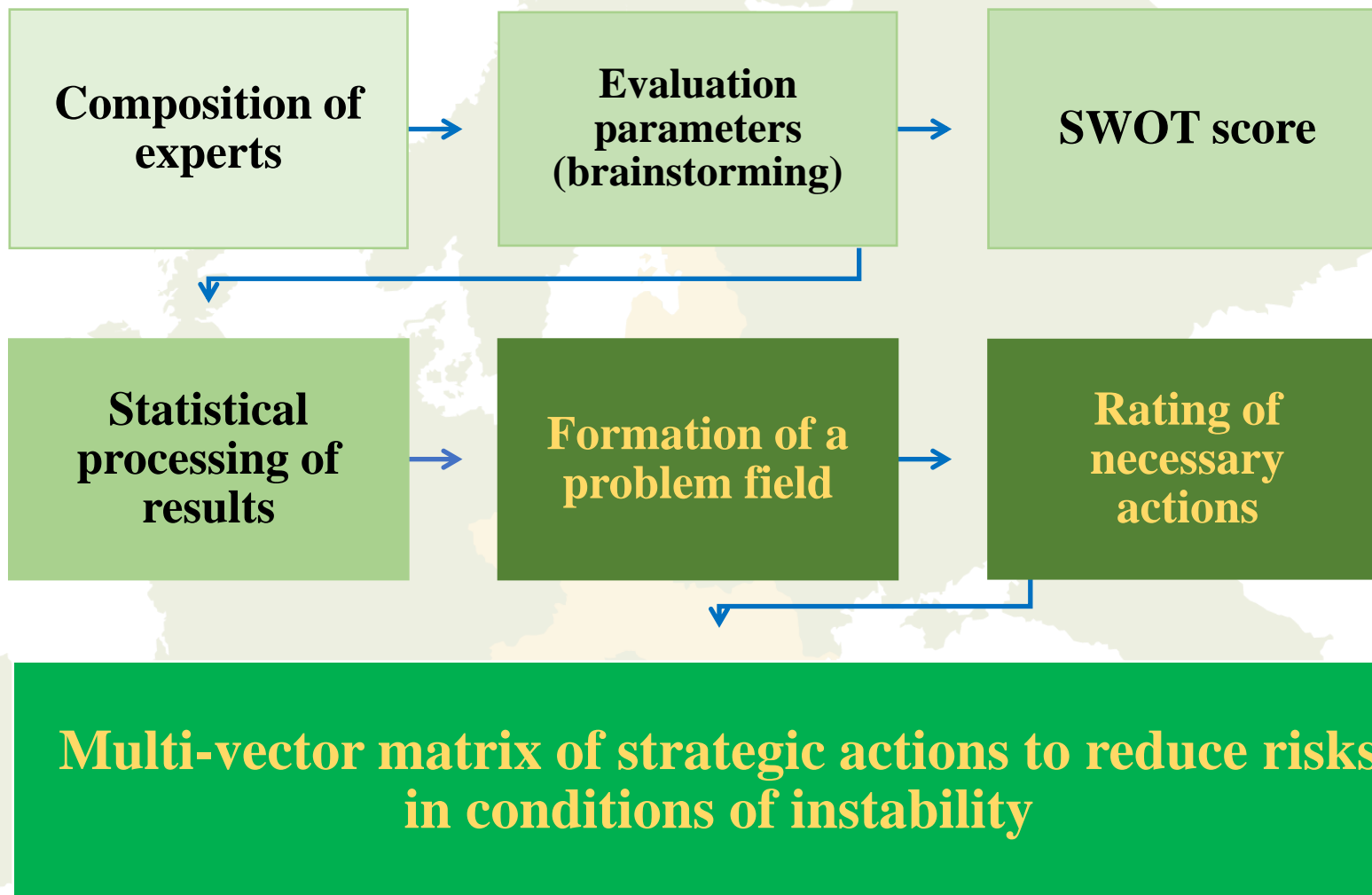
Region	Phase 1	Phase 2	Phase 3	Phase 4
Southern Great Plain (HU)	●	●	●	●
Mazovia (PL)	●	●	●	●
Nitra (SK)	●	●	●	●
South Bohemia (CZ)	●	●	●	●
Lviv (UA)	●	●	●	●

Lviv Region, Ukraine

POWER4BIO partner: *Ukrainian National Forestry University*

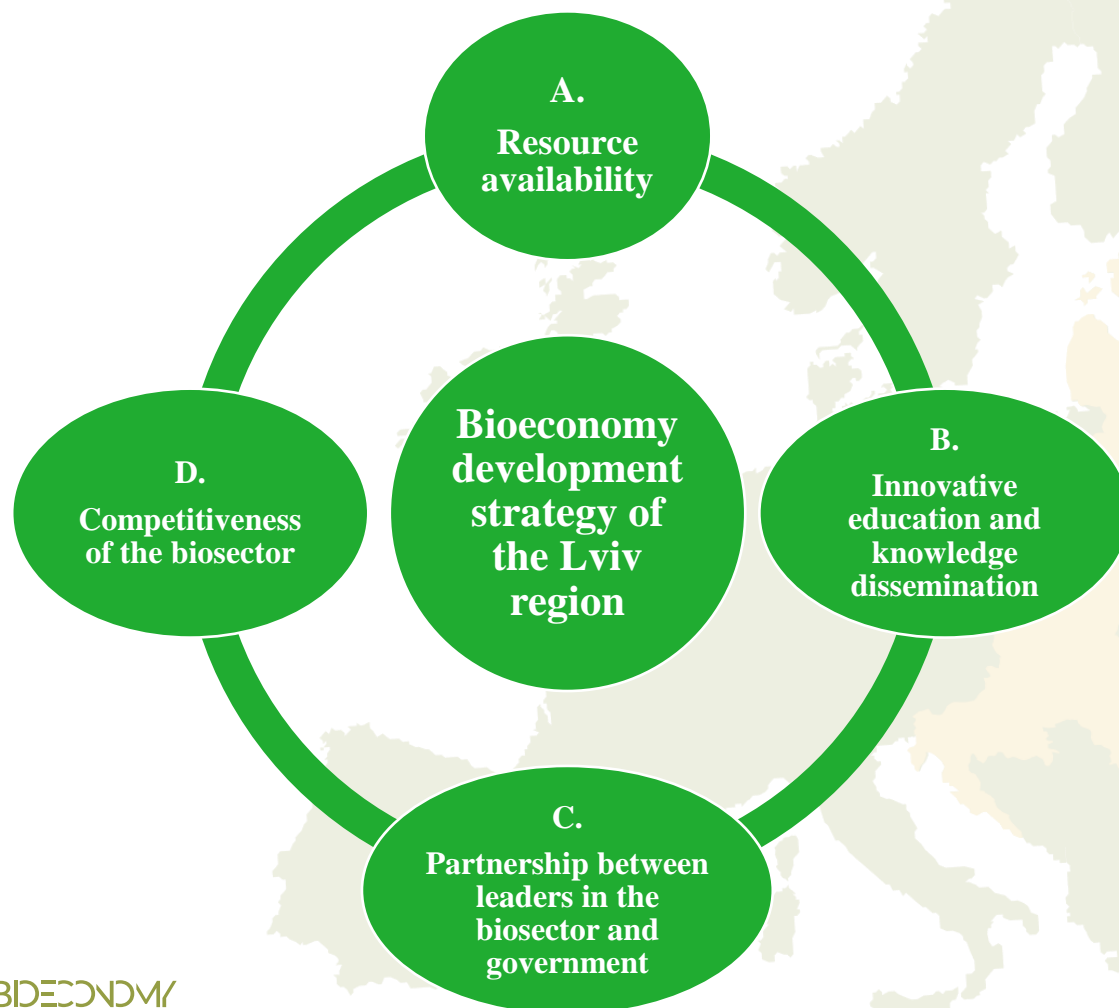


Regional analysis – Situational analysis



Source: UNFU

Main components of the bioeconomy development strategy of the Lviv region



‘Strengthening of the competitiveness of the bioeconomy of the Lviv region’.

Focus sectors: Forest, agriculture and food-industry

Three main principles:

- Awareness raising: bioeconomy is a locomotive for building the future of a prosperous sustainable society. Forest sector is the leader of the bioeconomy of the Lviv region.
- Transition from the linear model of the economy to circular (closed loops) bioeconomy (rational and sustainable use of the bioresources);
- Development of the human capital for the bioeconomy sector (competence, skills, jobs).

Source: UNFU

Lviv's key strategic priority areas



- Resource support for bioeconomy
 - Assessment of bio-raw material in the Lviv region (wood and agro-industry materials)
 - Establishment of a regional biomass exchange to facilitate access to the resource and balance exports of bio-sector product
- Waste management
 - Assessment of amount of waste in the region
- Competitiveness
 - Development of measures to increase the investment attractiveness of the bioeconomy sector of the region
- Public Private Partnerships
 - Reinforcement of existing programs supporting agro and wood industries, as well as definition of new regional ones.

Lviv's key strategic priority areas



- Cooperation
 - Formation of investment program of the bioeconomy sector development.
Creating new jobs in the bioeconomy sector with the corresponding wage level
- Knowledge and education
 - Educational programs, research in the sphere of the innovative biotechnologies
- Dissemination
 - Development of measures to increase the investment attractiveness of the bioeconomy sector of the region

Lviv's Bioeconomy Roadmap



1. Creation of Bioeconomy Center

2. Increasing investment attractiveness of regional biosector.

3. Assessment of availability of regional biomass feedstock

4. Supporting new market niches emergence – innovative bioproducts

8. Supporting SMEs in bioeconomy scene ...

The regional Smart Specialization Strategy is the regional bioeconomy strategy (2021 – 2027).

- Competitive economy. Includes in its action plan a total of 56 project to be carried out. 36 of those projects corresponding to the regional bioeconomy and supported with an overall sum of 13,1 billion UAH (Equivalent to approximately 389 million Euros (subject to exchange rate changes)).
- Clean environment, including also a total of 56 projects, from which 33 are directed towards bioeconomy with an overall sum of 1,4 billion UAH (Equivalent to approximately 389 million Euros - subject to exchange rate changes).

Mazovia Region, Poland

POWER4BIO partner: *Mazovia Energy Agency*



Governance structure for strategy development



- Initiators of strategy initiative: the Mazovia Energy Agency and the Regional Administration with cooperation of the Mazovia Energy Efficiency cluster.
- Formed an steering committee for strategy drafting
 - Policy: Department of Agriculture and Rural Development and Department of Waste Management, Emissions and Integrated Permits of the Marshal's Office
 - Research and Academia: Institute of Technology and Life Sciences, Warsaw Branch, Faculty of Engineering of the University of Technology and Commerce and the Institute of Rural and Agricultural Development of the Polish Academy of Sciences
 - Industry: food industry representatives, waste treatment companies and members of the Bioeconomy Association

Regional analysis – regional drivers and influencing factors and SWOT analysis

- Workshop with RBHs stakeholders:
 - Analysis of key factors influencing the bioeconomy development (technological, economic, administrative, political, social)
 - Initial identification of regional challenges to the bioeconomy
- SWOT analysis within Task 5.2 of POWER4BIO
 - Eight key factors used as based for the analysis.

Main components of the bioeconomy development strategy of Mazovia region



- Economic development, job creation and new business opportunities
- Sustainable development in the region: sustainable use and allocation of resources
- Awareness raising among industry actors, experts in research and academia, as well as on the civil society.
- Utilization of waste resources (residues from agro and wood resources, municipal waste, sewage sludge).

Mazovia will become a region:

- ***with a significant share of the use of biomass in the development of a circular economy,***
- ***developing in accordance with the principles of sustainable development,***
- ***in which innovative bioeconomy technologies and associated industries will be developed, enabling the bioeconomy's efficiency to be increased,***
- ***economically competitive, with an environmentally conscious society.***

Mazovia's key strategic priority areas



- Effective management of re-sources in accordance with the principles of sustainable development
 - Sustainable management of soils and waters;
 - Improving the quality and availability of consultancy services and activities for integration and transformation of the agri-processing sectorWaste management
- Increasing the use of renewable biological resources in sectors creating high added value
 - Wood and medical, biotechnology, chemical and environmental protection sectors
- Use of innovative biotechnological processes for the production of bioproducts
 - Advanced biomass processing for specialized chemical products
 - Bio-based products and specialty chemicals

Mazovia's key strategic priority areas



- Energy sector
- Contribution to the implementation of climate policy
 - Reduction of greenhouse gas emissions and CO2 bio-sequestration
 - Production of energy from renewable sources
- Strengthening the research potential of scientific units and developing cooperation in business-science-environment relations
- Shaping and promoting pro-environmental and pro-health behaviour of consumers

Nitra Region, Slovakia

POWER4BIO partner: *Mazovia Energy Agency*



Governance structure for strategy development



- Cooperation between the Slovak University of Agriculture in Nitra, National Agricultural and Food Centre and Bioeconomy Cluster
 - Pave the way for the *National Platform AgroBioFood Nitra (2016)*
- Bioeconomy Cluster in Nitra established *the Platform for Bioeconomy in Slovakia (2018)* – Approved by national government.
- National level: Ministry of Agriculture and Rural Development of the Slovak Republic (leading update of the RIS3 strategy) and Bioeconomy Cluster (Proposal national bioeconomy strategy).
- Regional level: self-government of the Nitra region is involved in the update of the regional RIS3 strategy (including scientific community, as well as professional associations and clusters such as Plastic cluster, Bioeconomy cluster, and key private companies in region)

Regional SWOT analysis

- Cross sectoral approach to bioeconomy governance: growing cooperation approach between ministries and public institution is common and intersecting bioeconomy topics.
- Involvement of stakeholders from agri-food sector, to reach increasing skilled people in the area of bioeconomy and a higher levels of openness towards innovations.
 - measurable methods to explain added value of bioeconomy solutions (not only economic) to the citizen and the relevant stakeholders

Main components of the bioeconomy development strategy of Nitra region



The inclusion of bioeconomy in RIS3 strategy and Program of Economic Development and Social Development of Nitra Self-Governing Region should respond to:

- Specific potential of sub-regions for high added agricultural production value
- Bio-based agriculture and food industry
- Effective adaptation and absorption of leap changes in the region's economy, cooperation in development, transforming the economy into an innovative circular green and smart economy based on sustainable and effective evaluation of human, natural, technical, technological and institutional resources of the region (greening of services)
- Restoring regional food self-sufficiency
- Transforming agriculture into sustainable modern precision farming, bio-agriculture and its integration into a sustainable agri-industrial system, a complex maximizing the added value of a regional product.

The RBH Nitra in cooperation with BIOEAST and Bioeconomy Cluster will:

- * stimulate the creation of appropriate conditions (of the whole regional ecosystem) for the development of bioeconomy in Nitra region,***
- * offer the access to actual knowledge, information and best practices from different parts of the EU,***
- * Circulate the best practices, which are utilizable in the Nitra region.***

"Nitra - the Region with a Flavour of Bioeconomy".

Nitra's key strategic priority areas



- An innovative, sustainable and competitive economy
 - Transforming the economy into a circular economy, including waste management
 - Building smart infrastructure in an innovative regional economy,
 - Building production domain and territorial clusters of strategic planning regions based on the concept of public-business cooperation, academia and civil society, especially in industry and agri-food complex
- Sustainable regional agri-food complex and in particular the processing and distribution chain
 - Establishment of economic units closing production and consumption cycles within the region and its strategic planning regions
 - Transforming agriculture into sustainable agriculture

Nitra's key strategic priority areas

- Environment, ecosystem services and green infrastructure:
 - Integrated water infrastructure and streamlining of waste management
 - Prevention of disasters and mitigation of the effects of climate change
 - Recultivation of brownfields and environmental loads.
- Smart energy, transport and technical infrastructure and debt recovery in these areas
 - Completion of the service system of the population with smart technical infrastructure
 - Building and developing smart mobility of the population, including transport infrastructure
 - Completing the smart infrastructure support infrastructure for the regional economy
 - Promoting energy efficiency and sustainable energy mix in the region.

South Bohemia, Czech Republic

POWER4BIO partner: *University of South Bohemia*



Governance structure for strategy development



- Regional bioeconomy Hub → ***South Bohemian Association for Bioeconomy.***
 - Regional experts from agriculture and forest sector, waste management companies, research institutes and academia
 - Representatives from RIS3 strategy
- Regional RIS3 strategy of South Bohemia Region for 2021-2027.
 - Regional Innovation Platform for Bioeconomy and Circular Economy
- Support from regional and national government to the initiative for regional bioeconomy is under development.

Regional SWOT analysis

- Use of waste resources and utilisation of non-traditional biomass such as algae and hemp for the increase of bio-based product
- Coordinate existing actions that can be grouped under bioeconomy, such as circularity programs and bio-based start-up initiatives, but to connect with the national framework and networks on bioeconomy. Thus, generating promising opportunity for the region.
- Seek opportunities that support bioeconomic start-ups focused on products with high added value and new bioeconomic fields
- Universities and scientific research institutions will be supported, as well as research and pilot projects also in the field of bioeconomy

Main components of the bioeconomy development strategy of South Bohemia



- Focus sectors: existing strong agriculture sector, agri-food and wood waste resources, as well as municipal waste and non-traditional biomass.
- Development program of the South Bohemian Region 2021–2027
- Regional Appendix to National Research and Innovation Strategy (RIS3) for the period 2021–2027

Key priority areas for a recommendations document to regional government are under development

Closing of the ecological cycle containing water, soil and climate in landscape scale. An effort to build value chains on traditional resources and branches and link them with a new high - value added – technology able to ensure sustainability of development in the region. Emphasis on the linkages of all branches of regional bioeconomy - agriculture, forestry, waste management with non-traditional sources.

Southern Great Plain, Hungary

POWER4BIO partner: *Bay Zoltan Nonprofit Ltd*



Governance structure for strategy development



- Initiators (2016): cooperation between the Ministry of Agriculture of Hungary and the Hungarian Chamber of Agriculture in the BIOEAST initiative
- Hungarian Bioeconomy Cluster - RBH of Southern Great Plain is embedded within the cluster.
 - Official members, including the academic sector, civil society, governmental representatives and business sector.
 - External experts consulted on request
- At national level: Ministry of Agriculture and the Ministry of Innovation and Technology

Regional analysis

- Only national bioeconomy strategy is undergoing. Recommendations from the regional analysis of Southern Great Plain have been delivered to coordinators of national strategy.
- Areas of priority are linked to the following main aspects of the SWOT:
 - existence of raw materials, infrastructure, RDI activities and good practices (Strengths);
 - logistical difficulties, low number of high-added value products, missing links and lack awareness (Weaknesses);
 - existing clusters, events organised, active actors, availability of unexploited resources (Opportunities);
 - lack of strategy and funding, long administrative periods to approve procedures related to new technologies (Threats).

Main components of regional recommendations to national strategy



- Developing new value chains relying on feedstock: easily produce in the region without endangering the current value chains
 - Such as elderberry, herbaceous plants, hemp, fish, algae, lignocellulose and sewage sludge
- Key priorities for Southern Great Plain region in the framework of the national bioeconomy strategy are:
 - *knowledge sharing and transfer,*
 - *development and innovation,*
 - *rural development.*

Regional bioeconomy vision

“to become a national leader in the regional bioeconomy development in Hungary by elaborating the regional bioeconomy strategy and through a collaborative approach between the most important relevant parties.”

- Mid-term vision: RBH in Southern Great Plain aim is to increase the engagement of relevant stakeholders and to become a communication bridge between them, focusing specifically on business sector
- Long-term vision: the RBH becomes the good example - in terms of bioeconomy strategy development and its implementation - to other Hungarian regions and to the whole country.

Southern Great Plain – recommended strategic actions



- Assessment of potential biomass available
- Analysis of existing practices among sectors with knowledge on biomass uses
- Creation of supporting institutions and support of cluster activities
- Awareness raising regarding bioeconomy concept in the society,
- Training activities and higher education programs to train specialized experts
- Networking, matchmaking events, cooperation related to biomass utilisation, agriculture and food industry organised in the region

Southern Great Plain – recommended strategic actions



- Search for public funding sources on multiple levels (regional, national, cross-regional, European)
- Indicator and monitoring systems (basis from CAP indicators)
- Creation of standards and certificates in the industry
- Assessment of the demand of the market
- Integrate bioeconomy related topics in the regional and/or national RDI framework
- Creation of local product and value chains, cooperation between local stakeholders
- Quality of soil and environment

POWER4BIO website and social media



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Thank you for your attention!



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