



Ministry of Science
and Higher Education

Republic of Poland

BIOECONOMY in POLAND

– national and regional level

The second Bioeconomy Course
University of South Bohemia
23/05/2017

address: ul. Hoża 20 \ ul. Wspólna 1/3 \ 00-529 Warszawa \ phone: +48 (22) 529 27 18 \ fax: +48 (22) 628 09 22

www.nauka.gov.pl



PLAN OF PRESENTATION

- I BIOECONOMY – the EU landscape
- II BIOECONOMY – NATIONAL LEVEL
- III BIOECONOMY – REGIONAL LEVEL

I BIOECONOMY – the EU landscape

Bioeconomy BASIS
the EC communication from 2012:
*Innovating for Sustainable Growth:
A Bioeconomy for Europe*

+ *Action Plan*
(*Research & Innovation;
Education and Skills; Market*)

Bioeconomy definition
*encompasses the production of renewable biological
resources and the conversion of these resources
and waste streams into value added products,
such as food, feed bio-based products and bio-energy.*

Landscape

- 4th Foresight SCAR
- *Stakeholders events and Conferences:
Utrecht IV 2016 (NL PREZ)
Bratislava X 2016 (SK PREZ)*
- European Stakeholders Panel
↔ *Manifesto*

Revision of the EC communication from 2012

*Circular Economy Package from December 2015
(January 2016 report on implementation)*

I BIOECONOMY – the EU developments

Revision of the EC communication from 2012

MANIFESTO

-trigger discussion in MS, regions, rural, coastal and urban communities on the development of bioeconomy strategies / action plans / road maps



-provide food for thought and recommendations which can contribute towards revised UE Bioeconomy Strategy, EU' Circular Economy Package, CAP and 9 FP + Paris Agreement COP 21 and UN Sustainable Goals

KEY GUIDING PRINCIPLES

- Sustainable management of resources (resource within the limits of the planet = circularity of bioeconomy);*
- Mitigating climate change*
- Producing for people*
- Stable and predictable framework*
- Cooperation between sectors and value chains creates synergies and critical mass*
- Long - term Research & Innovation Agenda*
- Importance of regional strategies and rural renaissance*

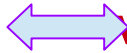
SCAR

BIOECONOMY STRATEGIC WORKING GROUP

- **need for revision** of the strategy
- emphasizes on **sustainable production and use of biomass**; the role of regional dimension; climate change contribution (adaptation and mitigation = biodiversity goals)
- need to enforce **policy coherence** and **break down silos**
- **suggestion of enlarging of the scope of definition:**
 - „**products and services**” (= not only bio-based products but **also ecosystem services**)
 - Connection with other industrial sectors: **construction, engineering, manufacturing, ICT, urban planning**
- **Research & Innovation = backbone** of bioeconomy fundamental and applied research, near to market activities (small scale demo, pilot plants, upscaling projects)

II BIOECONOMY – NATIONAL LEVEL

Bioeconomy in Poland – state of play

Bioeconomy  very broad concept

- **lack of national strategy** dedicated solely to bioeconomy
- **lack of unified definition of bioeconomy**
- different **aspects** of bioeconomy present in few strategic documents
- **many ministries involved** (research, agriculture, aquaculture, energy, development, environment)
- significant share of agricultural and agro-food sector in economy
- **weak stakeholders engagement**
- **lack of identified potential of biomass** and bio-based industry
- **the situation is changing....**

II BIOECONOMY – NATIONAL LEVEL

Bioeconomy in Poland ↔ characteristics

- good biomass potential / not identified
- missing strategic approach for bioeconomy development
- rather missing research based policy-making
- no governance just - market (and sometimes technology) driven approaches
- missing macro-regional approach for the sustainability (economic, environmental, societal)
- lack of societal participation in addressing challenges
- missing the approach concentrating on the cross – sectoral and the whole value chains, engaging different stakeholders
- lack of societal awareness

II Bioeconomy – national level

Strategic documents **with elements** of bioeconomy

STRATEGIES:

- *Sustainable development of agriculture, aquaculture and countryside*
- *Energy safety and environment*
- *Strategic document: Development of agricultural biogas installations in perspective 2010-2020*

Research & Innovation

- *R&D Strategic Program: Natural Environment, Agriculture and Forestry*
- *WoodINN – Sectoral Programme for the forest-wood and furniture industry*
- *GEKON Programme – Generator of Ecological Concepts aims at financing projects covering execution of R&D activities, experimental development and implementation of innovative pro-ecological technologies*

II Bioeconomy – national level

R&D Strategic Program: *Natural Environment, Agriculture and Forestry* **BIOSTRATEG**

Covers 5 areas:

1. **food** safety and healthy food
2. rational management of natural **resources**
3. climate mitigation and agriculture adaptation to **climate changes**
4. protection of **biodiversity** and sustainable development of agricultural productivity
5. **forestry and wood industry**

Topics in the bioeconomy area:

- Optimisation of **food chain**
- Production of **bio- fuels** and use of plants as a **renewable raw materials**
- **Sustainable supply of biomass**
- Development of **industrial biotechnology**
- Rational use of agricultural **by-products and wastes**
- Production of **new bio-products** in agro-food sector, industrial biotechnology

II Bioeconomy – national level

Strategic Program in the R&D area

WoodINN – Sectoral Programme for the forest-wood and furniture industry

The main objective of the Programme is to strengthening the, competitiveness and innovativeness of Polish forestry-wood and furniture sectors.

Research areas:

- ***modern raw materials and products for forestry-wood and furniture sectors***
- ***innovative products of forestry-wood and furniture sectors of unique and design and functions and functional properties***
- ***innovative manufacturing processes and production technologies in forestry-wood and furniture sectors***



II Bioeconomy – national level

European Structural & Investment Funds

Smart Growth National Operational Program based on National Smart Specialisation

- 1. Innovative technologies, processes and products of agro-food sectors and forestry - wooden sectors***
- 2. High quality food***
- 3. Biotechnological processes and products of specialist chemicals and environment engineering***



II Bioeconomy – national level

European Structural & Investment Funds

National Operational Program Smart Growth

Regional Scientific – Research Agendas (1)

- ***Coordination and synergy of projects in the area of Research and Development based on the Regional Smart Specialisations***
- ***Selection of the highest quality of projects having impact on national economy and regional development***
- ***II stages: I -designation of areas ; II – call for projects***

Realised by the National Center for Research and Development

II Bioeconomy – national level

Smart Growth National Operational Program Regional Scientific – Research Agendas (2)

Thematic group includes issues of research and development of a regional character in:

- *thematic areas of bioeconomy (biomaterials),*
 - *Quality of Life and Food and partly in Health (medicine, pharmacy, cosmetics),*
 - *and tourism*
1. new **biomaterials, biotechnology and bio-components** for the production **of functional, safe and high quality food**, including **organic production**, the method of extending the durability and new packaging for the food;
 2. new or improved technologies and sustainable processing of raw materials of natural origin (fossil, plant or animal origin)
to the new non-food applications, i.a:
 - a) production of **new medicinal substances and medical products**,
 - b) production of cosmetics, care substances, **hygiene products and household chemicals**,
 - d) use in agriculture,
 - e) energy production
 3. new or improved **protection systems, monitoring and sustainable management and use of water resources, agriculture and forestry, taking into account the quality of environment, biodiversity and mitigation of climate change.**

II Bioeconomy – national level

ROAD MAP TOWARDS CIRCULAR ECONOMY (1)

- *Decree of the Minister of Development on the Task force on circular economy (December 2016)*
- *Response to Circular Economy Package*
- *Map towards Circular Economy ↔ set of activities for administration to foster implementation of circular economy (plan to be accepted - December 2017)*
- *Key elements for MCE:*
 - *Innovativeness ↔ enhancing cooperation between science and industry*
 - *Creating market for reused waste / “secondary raw materials”*
 - *Providing high quality reused waste (sustainable production and consumption)*
 - *Development of services*

II Bioeconomy – national level

ROAD MAP TOWARDS CIRCULAR ECONOMY (2)

4 parts:

Sustainable industrial production (*industrial waste, extended producers' responsibility, LCA – life cycle assessment*)

Sustainable consumption (*municipal wastes, food waste, education*)

Bioeconomy (*sustainable agriculture, energy sector, bio-industry*)

New business models (*reorganisation of functioning of market participants*)

4 Working groups:

**WASTE, BIOECONOMY, BUSINESS MODELS,
EDUCATION AND PROMOTION**

II Bioeconomy – national level

ROAD MAP TOWARDS CIRCULAR ECONOMY (3)

BIOECONOMY part (*proposal of activities*)

Sustainable agriculture

- biomass potential identification
- fostering local value chains
- local biorafineries
- business models in bioeconomy

Energy sector

- increase of utilisation of biomass and waste for renewable energy
- biogas installation in rural community

Bio-industry

- demand for bio-products (promotional campaign)
- regulatory provision for development of specified amount of biomass
- standardisation of bio – products
- start – ups support
- strengthening of R&D activities

DEFINITION

OF BIOECONOMY ???



III Bioeconomy – regional level
European Regional Development Fund
Regional Operational Program

Regional Smart Specialisations (16 regions / voivodships)

elements of bioeconomy in 14 regions:

eko – innovation, eko -development, innovative agriculture and agro-food sector, technologies of agro – food business, low-emission economy, sustainable energy, technologies of the energy industry, bio-resources, food safety and high quality of food,

wood and furniture business, chemical nad pharmaceutical business

explicitly bioeconomy mentioned in 2 regions

III BIOECONOMY – REGIONAL LEVEL

International Bioeconomy Congress – 6-7 October ŁÓDŹ

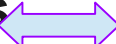
The Lodz Declaration on Bioregions

*contributes to the revision of the UE Bioeconomy Strategy
and brings into consideration new ideas:*

- the global sustainable bioeconomy first developed at **local sustainable circular Biocommunities** (*local value chains, local green energy, biodiversity, water management and cultural heritage*)
- new **Cohesion Policy** should consider development of Biocommunities (*local circular bioeconomies*) and Bioregions
- **Regions of Central and Eastern Europe** should actively look for **synergies**, create opportunities for **cooperation, joint initiatives and projects** (*RIS3 specialisations on bioeconomy*)
- **Involvement of civil society, education, awareness campaigns**

III BIOECONOMY – REGIONAL LEVEL

The Lodz Declaration on Bioregions

Bioregions  local sustainable Biocommunities
(*biovillages, biocities*)

*implementation series of measures for achieving **sustainable bio-based growth**, reduced impact on environment, **local renewable energy supply** and integration of agriculture, ecology and life in rural areas and also with a view to growing urban agglomerations*

The Declaration mentioned in:

- H2020 SC2 WP 2018-2020

- draft opinion of the European Committee of Regions

„*The local and regional dimension of the bioeconomy and the role of cities and regions*”

Intention letter with BBI JU

BIOECONOMY in Poland- conclusions (1)

- scattered landscape still
- **bioeconomy is forging ahead.....**
- development = bottom – up process
- research community and academia the leaders

PROJECTS

Era Chair project **BioEcon**: *New Strategies on Bio-Economy in Poland*

Teaming for excellent project **ICRI-BioM**: *International Centre for Innovation Research on BioBased Material*

Bio -Based Industry Joint Undertaking participation:

Calls 2014-2016: **7 projects, 11 PL participants (1 coordination)**

Calls for 2016: 5 projects, 9 PL participants (1 coordinator):

6 DEMO projects, 2 RIA and 1 CSA



BIOECONOMY in Poland- conclusions (2)

- the need for new skills and education

Lodz Technical University – interdisciplinary curriculum on bioeconomy

- “awakening” stakeholders engagement

International Bioeconomy Congress – 6-7 October ŁÓDŹ

European Congress on Biotechnology – 3-6 July KRAKOW

Polish Technology Platform on Bioeconomy

Cluster LifeScience

The strategic approach / strategic document (action plan, road map...) makes a difference and foster development of bioeconomy



Ministry of Science
and Higher Education

Republic of Poland

Monika Rzepecka
PC SC2 and SCAR delegate

Innovation and Development Department
Ministry of Science and Higher Education

monika.rzepecka@nauka.gov.pl

address: ul. Hoża 20 \ ul. Wspólna 1/3 \ 00-529 Warszawa \ phone: +48 (22) 529 27 18 \ fax: +48 (22) 628 09 22

www.nauka.gov.pl