The UrBioFuture Project

PPP- Public-Private-Partnership

Support for Research and Innovation activities promoting the Bioeconomy and Circular Bioeconomy

This project has received funding from the Bio Based Industries Joint Undertaking (JU) under the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837811.
To promote the Circular Bioecoomy

Create New Value Chains

Create new cross-sector interconnections

Corn for fuel

Corn for biodegradable plastic

Chemicals

Fuel

Forestry

Paper

Agriculture

Farmers

Pharmaceuticals

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UrBioFuture: Partnership & Aim

UrBIOfuture main goal is to bring Europe to the forefront of the bio-based sector by boosting careers, new educational programmes and research activities.
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**Project development**

1. **Design:**
   1. Stakeholders List
   2. Survey for the industrial stakeholders
   3. Template for the educational programmes mapping

2. **Educational Programmes mapping**

3. **Analysis of the Industrial needs**

4. **Identification of the gaps among the industrial needs and educational programmes**

5. **Conclusions and guidelines**

6. **The “UrBioFuture Experience”**
Educational Programmes Mapping

- Educational Programmes: 1228
- Educational Programmes analyzed: 912
- European Countries: 26

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Educational Programmes mapping

- PhD: 12%
- Master: 46%
- Undergraduate: 35%
- VET: 7%

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Survey to the Industrial Stakeholders

- **Industrial Stakeholders**
  - 2000
  - Data analyzed
  - 152

- **Industrial sectors**
  - Biotechnology
  - Agriculture
  - Pharmaceuticals
  - Chemical
  - Food products
  - Biorefinery
  - Bioenergy
  - Heat (biogas and solid biomass)
  - Paper and paper products
  - Cosmetics
  - Biofuels
  - Plastics
  - Forest based industry
  - Fertilisers
  - Construction materials
  - Textile and textile products
  - Maritime
  - Forestry
  - Feed

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Gaps among Industrial needs and educational programmes

Categories in which gaps and needs were identified by the bioindustry sector

| Research & Innovation                  |
| Personal initiative and entrepreneurship |
| Management                              |
| Sustainability and Industry            |
| Specialists in bio-based sector business-market development |
| Technology / STEM (Science, Technology, Engineering and Maths) |
| Sales and Marketing                     |
| Basic Scientific Knowledge              |
| Rules and Regulations                   |
| Soft Skills                             |
| Technical expertise in primary conversion processes |
| Technical expertise in materials, products and functionalization |
| Technical expertise in secondary conversion processes |
| Technical expertise in sustainable biomass production |
| Data Management                         |
| Social Responsibility - CSR             |
Main gaps

RESEARCH AND INNOVATION
Knowledge transfer: from the LAB to the Industry Innovation and Change

PERSONAL INITIATIVE AND ENTREPRENEURSHIP
Critical thinking
Problem solving

MANAGEMENT
Development of business models
Project management

SUSTAINABILITY AND INDUSTRY
Circular economy / Zero waste industry
Sustainable competitiveness / Economy

SPECIALISTS IN BIO-BASED SECTOR BUSINESS
Bio-based market knowledge & techno-economic expertise
Identify and create market application for new bio-based products
Conclusions: the European panorama

European Complexity

- Each country and region has its own legal framework and educational system.

- Each region has its own bio-based industry focus.

Educational system and Industrial sector

- The education system should analyze the industrial needs and prepare future professionals for the complexity of the bio-industry;

- The industry should collaborate with educational institutions, especially with in-company activities, proposing challenges and objectives that students must address and achieve.
## Guidelines

1. Educating people with interdisciplinary skills i.e. skills related to industry 4.0, digital skills, standard requirements for new bio-products, critical thinking and problem solving

2. Reshaping classroom learning and developing flexible teaching by including experiences that stimulate creativity and problem solving skills.

3. Proposing Case-Study or Project-Based courses on bioeconomy and bioindustry

4. Creating strong links between European and national policy makers in order to lobby for the reduction of the administrative and financial restriction that compromise creation of traineeships in research centres and industries.

5. Promoting the training activities for educators in the bioeconomy sector.