

# Portugal

## Factsheet

This document provides an overview of the Portugal's initiatives and current state in the bioeconomy sector, highlighting regional policies, educational programmes, key trends, existing and expected sub-sectors, and opportunities for personal advancement in bioeconomy related fields.

## About the region

Bioeconomy-related activities in **Portugal** are growing as the country seeks to blend economic growth with environmental sustainability, leveraging its unique landscape and commitment to environmental protection. The most prominent sector is the blue bioeconomy, utilising Portugal's extensive coastal regions. Other key sectors include agriculture, tourism, textiles, and construction materials. In education, Portugal is advancing with bioeconomy-related courses and training initiatives, though a centralised platform is not yet established. The country is well-positioned to harness the bioeconomy's potential by promoting eco-friendly practices, leveraging natural resources, and investing in education and social inclusion.

## Thematic Orientation

### Existing Sub-Sectors

- Forest-based products
- Agriculture and food
- Marine sector

A growing interest and concern are also focusing on Eco-construction and Eco-tourism.

### Key Trends Influencing Innovation

- Digitalisation drives innovation across various sectors in Portugal.
- Broadband expansion creates new digital opportunities.
- Sustainability motivates technologies in renewable and circular economies.
- Focus on green transformation and sustainable energy systems.
- Cooperation between companies and universities fosters innovation.

### Expected Sub-Sectors / Value Chains

- Green chemistry
- Bioplastic
- Bioenergy

### Opportunities for advancement (Growth, Career, Social etc.)

The Bioeconomy is driving revolutionary trends that demand a new workforce in areas like biomass energy, bioplastics, and aquaculture, creating diverse job opportunities and appealing to young people. As the Bioeconomy grows, it relies on both natural and human resources, with educational tools in this field slowly expanding in Portugal, offering significant personal and professional advancement.

## Governance, Education Levels & Skills

### Governance structure in adult education on Bioeconomy, or on the wider topic of sustainability (Higher Education, Vocational Training etc.)

- The Portuguese Government is responsible for setting policies and strategies related to adult education in the Bioeconomy.
- Universities and research institutions in Portugal play a key role in adult education, by offering courses, training programmes, research opportunities etc.
- Industry associations in Portugal represent the interests of businesses involved in the circular Bioeconomy

### Organisation of Adult and Lifelong Learning

- National Qualifications System that provides a framework for the recognition and validation of competences
- Universities and vocational schools offer continuous education programmes designed for adults that desire to update their skills and knowledge or acquire new qualifications
- Vocational education and training system providing practical training and education for those who wish to acquire a specific set of skills and competences related to a particular sector or industry
- Adult education centres that offer a wide range of programmes and courses



### Available Research on Bioeconomy Education

- No organised structures for Bioeconomy

### Main Training, Retraining or Lifelong Learning on Sustainability

- CBQF (Centre of Biotechnology and Fine Chemistry) is an Associated Laboratory of the Catholic University of Portugal in Porto
- UPTEC is a meeting point of the University of Porto and businesses
- Centre of Biological Engineering is a research centre located at the University of Minho (Braga)
- University of Trás-os-Montes and Alto Douro (UTAD) offers higher education curriculums in sustainable agriculture, biotechnology, renewable energy, waste management
- GreenUPorto- Research Centre on Sustainable Agri-food Production
- Other providers are vocational training schools and centres of vocational qualification/training
- Associação Portuguesa de Educação Ambiental (ASPEA), coordinates environmental education programmes

### Available Research on Bioeconomy skills needed

- No organised structures for Bioeconomy

## Linking Art & Bioeconomy Education

### Bioeconomy education in which Art concepts are applied

- Art as a stimulus of the needed skills
  - There are some companies which offer design thinking workshops for different companies and individuals
  - Some companies offer workshops on collaboration skills and entrepreneurial
  - There are some art exhibitions by Portuguese artists that are in the field of sustainability, reused materials and awareness of the environment
- Art addressing learning styles
  - IPDJ- Instituto Português do Desporto e Juventude, is a governmental organisation that promoted a creative competition called "Bioeconomia na minha vida" (Bioeconomy in my life) for young adults.
- Inspirational case studies from Art to Bioeconomy Education
  - Zet Gallery promotes sustainability through art by offering a prize "arte em espaço público e sustentabilidade" (art in public places and sustainability)



- Injecting the Bioeconomy in design, art, architecture, etc. professions
  - Companies from the medical field, construction, and even fashion using biomaterials or recycled materials in production
  - Artur Bordalo or Bordalo II is a Portuguese artist known for his unique approach to creating art with trash and recycled materials

## Marginalised Groups

In Portugal, several marginalised, disadvantaged, and minority groups face challenges and barriers in accessing opportunities and services. Among these groups are young adults, people living in rural areas, and individuals in situations of poverty. These groups are particularly prioritised when it comes to creating opportunities for social and economic inclusion.

The bioeconomy sector presents relevant job opportunities for disadvantaged and marginalised individuals, particularly in agriculture and forestry. There are also opportunities in bioenergy production, including the installation, maintenance, and production of bioenergy systems. Additionally, the ecotourism sector, which is growing, may offer future job prospects for these groups.

The main needs of individuals from marginalised groups as they integrate into the bioeconomy revolve around acquiring specialised knowledge and skills. To meet these needs, education and training programmes tailored specifically for the bioeconomy sector must be provided. It is important to personalise training to accommodate different learning styles and education levels, ensuring that individuals from various backgrounds can successfully enter this sector. Efforts should also focus on sustaining existing jobs while creating new,



attractive opportunities in rural areas. Promoting activities and sectors that create added value within marginalised communities is equally important.

Currently, there are no established educational or development activities in Portugal specifically addressing the integration of marginalised groups into bioeconomy activities, leaving a gap in efforts to meet their main needs and promote inclusion in this growing sector.

### STRENGTHS

- Wide spectrum of sectors involved
- Competitiveness based on Innovation
- Increasing transition to horizontal value chains
- Blue Economy
- Increase of employment / available job positions
- Existing Educational Activities oriented to Bioeconomy
- Existing of lateral opportunities, Life-Long learning, Vocational training, mass information, education for non-specialists, etc
- Overlapping between the Bioeconomy Education Institutions and Art related institutions

### WEAKNESSES

- The resources and products are not fully valorised Due to the lack of a National Strategy, Bioeconomy is not fully aligned with the socioeconomic priorities of the country
- Fragmentation of activities and priorities
- Lack of an organisational umbrella for Bioeconomy Education
- Lack of Research on Bioeconomy Education
- Lack of specific research on Bioeconomy needed Skills
- Lack of Educational activities and programmes for marginalised groups

## SWOT Analysis

### OPPORTUNITIES

- Expansion in new sectors and new value chains
- Further exploitation of the developed digital background
- Making Portugal a recognised centre of Bioeconomy development in Europe
- The existing General Education background can be the seed for a dedicated Bioeconomy Education in all levels
- The growing interest on organising a concrete educational mechanism in the country can be the driving force for a wider development

### THREATS

- Potential decrease of resources by 2050 due to dynamic harvesting
- A potential brain-drain due to the lack of motivation
- The lack of identification and organisation of an educational programme for the marginalised groups will be an inhibitor to the integration of these groups and this might have social and economic consequences

### Consortium



For more detailed information, visit Portugal regions page in our website.

[BioGov.net](https://biogov.net)  
info@biogov.net  
@biogovnet



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