

Adult education in Portugal

The way forward

Technical specifications document

This document presents findings on opportunities for advancement in the bioeconomy sector in Portugal, highlighting the needs for skills, existing education, gaps and needs in promoting education. It also includes 3 relevant case studies collected from the country.



Opportunities for Advancement

Portugal is in a prime position to be successful in the bioeconomy transformation but has not yet exploited the full potential of biomass to create expected added value.

Smart Agriculture & Food Industry

Focus on the development of new bioenergy, forest products and bio-based materials; focus on using sustainable agricultural practices.

Green Technologies & Renewable Energy

Continuing in creating opportunities for new digital technologies and business models; further reduction of greenhouse gas emissions; enhanced use of green innovations and new technologies in clean energy production.

Circular Economy

Further expansion of new sectors and new value chains through new technologies and innovations; advancement of already existing wide range of value chains (mainly in the northern region) that are contributing to economic growth, environmental sustainability, and social development; further exploitation of the developed digital background.

Blue Bioeconomy

Further capitalization of the country's extensive coastal regions through the use of new innovations and renewable technologies.

Eco Tourism

Utilization of the environmental benefits of the country's unique landscape and cultural and environmental heritage; prioritising the preservation and protection of natural ecosystems while promoting possibilities for visitors to engage in educational and recreational activities.

Needs for Skills

On educational/academic level

The country showcases a commitment to knowledge and skills development, however, a bigger focus on knowledge of genetic engineering, microbial fermentation, and bioinformatics (which are all part of the biotechnology skill set) is needed; knowledge of crop management, soil health, and precision agricultural techniques are desired skills connected to sustainable agriculture; the need for skills in the areas of biomass energy, bioplastics, chemistry, aquaculture, etc.

On private sector level

Maintaining existing jobs and creating new, attractive jobs in the rural areas.

On governmental level

More systematic and organized overall governmental efforts in the field of bioeconomy; utilization of already existing initiatives and projects.

Existing Education

Higher education:

Universities collaborate with industry associations and government agencies in order to develop curricula that are able to reflect the needs of the industry and the job market; while there may not yet be a centrally coordinated platform for bioeconomy-related education, some dedicated courses and training initiatives are already being put in place, including:

- Centre of Biotechnology and Fine Chemistry is an associated laboratory of the Catholic University of Portugal in Porto;
- Centre of Biological Engineering is a research centre at the University of Minho;
- University of Trás-os-Montes and Alto Douro offer higher education curriculums in sustainable agriculture, biotechnology, renewable energy, waste management;
- GreenUPorto is a research centre on Sustainable Agri-food Production;
- Governance structure for adult education on the circular bioeconomy in Portugal, involves several actors, including the government, universities, research institutions, industry associations etc.

Vocational training:

Industry associations work closely with government and academic institutions to promote adult education and training or workshops in relevant areas; there are adult education centres that offer a wide range of programs and courses, incl. lateral opportunities, life-long learning, and vocational training.

- Adult training, retraining, and lifelong learning are organised through universities, vocational schools, training centres, and adult education centres;
- Universities and vocational schools offer continuing education programs designed for adults that desire to update their skills or acquire new qualifications related to a particular sector or industry.

Gaps & Needs in Promoting Education

On educational/academic level

Lack of research on bioeconomy education; lack of specific research on bioeconomy-related skills; lack of educational activities and programs for marginalized groups.

On training level

The need to set up a unified certification scheme valid through EU for VET and LLL; lack of practical training modules to accelerate business ideas that can lead to start-ups.

On governmental level

Portugal has been working on its Action Plan for Sustainable Bioeconomy (PABS) called Bioeconomia 2030, however, there is still insufficient national strategy in bioeconomy; lack of an organizational umbrella for bioeconomy education; bioeconomy is not fully aligned with the socioeconomic priorities of the country; fragmentation of activities and priorities.

On private sector level

The need to raise awareness in bioeconomy and create new and attractive jobs in this field.

On societal level

Limited public awareness about the potential and benefits of career development, growth and social impact through bioeconomy; high unemployment of disadvantaged groups, esp. young adults, people in rural areas, and people in situations of poverty; a potential brain-drain due to the lack of motivation.

3 Case Studies

Case Study 1

[Bioeconomy education, training and retraining in Higher Education | Blue Bioeconomy Collaborative Laboratory \(B2E CoLAB\) /The North Region of Portugal](#)

Purpose: Establishment of the most valuable synergies between academia and industry. The goal is also the promotion of economic and social value of the relevant sectors by developing added-value of bio-based products and services inspired by the ocean and internationalisation processes of national scientific and technological capacity and knowledge.

Case Study 2

[Using art to elicit new ways of thinking and develop skills needed in bioeconomy education | Circular Centre Quiz – Jogo Centro Circular /The Centre Region of Portugal](#)

Purpose: Promotion of knowledge about the circular economy, aimed at the school community of the Centre Region of Portugal. The Circular Centre Quiz is an online game – the initiative uses gamification as a ludic way to develop environmental, circular and sustainable education content, addressed to students and their teachers.

Case Study 3

[Using art to communicate messages, inspire people and raise their interest and awareness | Zet Gallery /The North Region of Portugal](#)

Purpose: Promotion of sustainability through art. Zet Gallery does so by offering a prize "art in public places and sustainability". This project also has the support of the University of Minho.



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