

Adult education in Greece

The way forward

Technical specifications document

This document presents findings on opportunities for advancement in the bioeconomy sector in Greece, 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

Smart Agriculture & Food Industry

Utilization of biogas and use of by-products for fertilization of agricultural crops and implementation of technology-driven solutions in Greek agriculture – such as precision farming techniques, IoT devices and data analytics; utilization of uncultivated agricultural land for the production of biomass for biofuel.

Waste Management & Circular Economy

Utilization of animal waste in generation of electricity and heat; conversion of agricultural by-products into value-added products like bioplastics, biofuels, or fertilizers; reuse of food waste in food production; promoting the prevention of creating waste and encouraging re-usage and recycling.

Green Technologies & Renewable Energy

Use of raw residual biomass for small-scale and on-site energy production and green transformation (only 3% of the total biomass is used for bio-economy applications); enhanced use of green innovations and new technologies in energy storage, grid management, and clean energy production, utilizing resources like solar, wind and biomass.

Marine & Aquatic Bioeconomy

Incorporation of the Greek unique marine resources in the bioeconomy value chain – Greece has the largest fishing fleet in the EU (15,188 vessels out of a total of 83,792 within the EU); making advantage of the special role Greece can play in the Middle East and North Africa countries providing technology transfer.

Sustainable Tourism & Gastronomy

Use of the unique Greek tourism industry, agricultural sector, cultural heritage, agro-tourism and culinary tourism for bioeconomic activities.

Sustainable Fashion and Art

Utilization of natural fibers and sustainable materials from Greek agriculture, such as cotton, wool and silk, to create eco-friendly local clothing and creative designs.

Needs for Skills

On educational/academic level

Better promotion of bioeconomy education and training; introduction of a sufficient accreditation system for bioeconomy education and training; building of cutting-edge technical and economic knowledge necessary to manage and promote biotechnological products and services; vocational education and training is left behind when it comes to bioeconomy – to enhance VET, it is essential to align training programs with industry demands and promote practical skills development.

On private sector level

Enhancement of environmental management and sustainability assessment; better promotion of bioeconomy career opportunities through enhanced collaboration among academia, industry, businesses, NGOs, investors, civil society organisations etc.

On governmental level

More systematic and organized overall governmental efforts and adoption of the principles of the circular economy across sectors; harmonize governance mechanisms across different regions; promotion of public dialogues to increase the understanding of bioeconomy.

Existing Education

Higher education:

3 Universities in Greece (2 in Thessaloniki – Northern Greece) offer advanced training programs in the circular bioeconomy and sustainability, covering topics such as agriculture, forestry and biotechnology;

- Many more universities and research institutions offer programs in environmental studies, renewable energy, agronomy, and other disciplines relevant to bioeconomy;
- Growing research activities and collaborations in areas like biotechnology, renewable energy, and sustainable agriculture.

Vocational training:

Trainings offered by different associations with focus on bioeconomy, such as *Hellenic Organisation of Agricultural Sciences (DEMETER)*; vocational training centres and adult education facilities offer courses and programs in green skills, sustainable/agricultural practices, livestock management, etc.

Gaps & Needs in Promoting Education

On educational/academic level

Lack of concrete educational strategy for bioeconomy education on a national scale; no relevant Bachelor's degree exists so far; low technical training of those involved in primary production (32% of Greek farmers have no agricultural education, one of the lowest recorded in the EU); no available dedicated research on bioeconomy education; insufficient education programs in the field of bioeconomy for minority groups including disabled people, immigrants/refugees and youth adults; not enough free courses and certifications available locally.

On training level

Inadequate skills and training tailored to bioeconomy sector; insufficient art and creativity training; inadequate training programs in the field of bioeconomy for minority groups including disabled people, immigrants/refugees and youth adults.

On governmental level

No specific plan or strategy for the development of bioeconomy; inadequate cooperation of Greek political leadership with scientific community and social partners; insufficient support for employment in the sector; regulatory complexities and bureaucratic hurdles; lack of appropriate financial mechanisms; no funding for voluntary actions in bioeconomy.

On private sector level

Inadequate advocacy support for the careers in bioeconomy; small size of the farms and the low level of cooperation; low level of adoption of technological innovation.

On societal level

Limited public awareness about the potential and benefits of career development, growth and social impact through bioeconomy; aging rural population with low level of digital and IT literacy; possible emigration of skilled individuals caused by a lack of incentive or drive.

3 Case Studies

Case Study 1

Bioeconomy education, training and retraining in Entrepreneurial Education | Research Project of the University of Aegean “Aegean BIOECONOMY”
/North and South Aegean, Greece

Purpose: Supporting the regions of the North and South Aegean in the transition from a linear to a circular bioeconomy model. The project combines the recovery and valorisation of biological resources, promotion of sustainability, and protection of the natural environment. It will lead to the development of innovative services and platforms.

Case Study 2

Bioeconomy education, training and retraining and inclusion of marginalised groups | Vamvakies Social Green Project /West Macedonia, Greece

Purpose: Supporting those interested in entrepreneurship and careers in the food industry. The program empowers the group of women to work at the Enel Green Power photovoltaic park in Kozani, but also provides free trainings to all Kozani residents to develop their skills in bioeconomy.

Case Study 3

Using art to address different learning styles and facilitate the inclusion of marginalised people | Ecumenical workshops for refugees NAOMI
/Thessaloniki, Central Macedonia, Greece

Purpose: Improving of employability and integration of disadvantaged groups (refugees) through the professionally configured workshops to teach them tailoring skills with respect to eco-friendly practices. In the workshops, the participants learn not only to sew but also to reuse clothes and to incorporate art, creativity and design in order to create quality products of artistic design.