Editorial: Advancing bioeconomy and agricultural education through digitalisation, active learning, and interdisciplinary collaboration

Nina Drejerska*

Centre for Climate Research,
Warsaw University of Life Sciences,
02-787, Warsaw, Poland
Email: nina_drejerska@sggw.edu.pl
*Corresponding author

Alessia Spada

Department of Economics,
University of Foggia,
71121, Foggia, Italy
Email: alessia.spada@unifg.it

Valentina Chkoniya

GOVCOPP,
ISCA-UA,
University of Aveiro,
3810-193, Aveiro, Portugal
Email: valentina.chkoniya@ua.pt

Alkis Thrassou

Gnosis: Mediterranean Institute for Management Science,
School of Business,
University of Nicosia,
CY-2417, Nicosia, Cyprus
Email: thrassou.a@unic.ac.cy

Biographical notes: Nina Drejerska is an Associate Professor and economist at the Centre for Climate Research, Warsaw University of Life Sciences. Her work focuses on human capital, labour market and bioeconomy-related issues. She is the author of over 100 scientific publications, including peer-reviewed articles, book chapters, and books. She has participated in nearly 20 national and international projects – including Erasmus+ and COST Actions – and currently coordinates the Erasmus+ project Creative Learning for Boosting Bioeconomy within HEIs' Curricula (CL4bio).

Alessia Spada is a statistics researcher at the University of Foggia. For over 20 years participated in numerous research projects with public and private partners, as an expert in statistical data analysis. Furthermore, she has deep

Copyright © 2025 Inderscience Enterprises Ltd.

experience in both research, with more than 50 scientific publications, and academic teaching. Her current research interests concern the analysis of ecological data, the analysis of the sustainability of economic systems and studies on the organisational well-being of public and private administrations.

Valentina Chkoniya received her PhD in Technical Sciences in 2003 and title of the specialist in marketing in 2019. Currently, she is a Professor at the University of Aveiro, Portugal and a member of the research unit on Governance, Competitiveness and Public Policy (GOVCOPP), Systems for Decision Support Lab. Valentina Chkoniya is a highly professional and experienced professor with a deep understanding and knowledge regarding management, based on a deep strategic perspective and building on more than 20 years of experience. Her current research interests include data science, decision support systems, marketing research, consumer behaviour, customer insights and trend studies.

Alkis Thrassou is a Professor at the University of Nicosia (Cyprus, EU) and holds a PhD from the University of Leeds (UK). He is the Director of Gnosis Mediterranean Institute for Management Science, the Chief Editor of *Palgrave Intersections of Business and the Sciences*, the managing editor of *Palgrave Studies in Cross-disciplinary Business Research*, an associate editor of *EuroMed Journal of Business*, and a Senior Research Fellow of the EuroMed Academy of Business. He has published about 300 scientific works in numerous internationally esteemed journals and books, and his works carry many thousands of peer citations. His is ranked No. 8 of Best Business and Management Scientists' in Greece and Cyprus (combined), by Research.com (2024). He further retains strong ties with industry, acting also as a consultant, and holding the prominent professional qualifications of chartered marketer (FCIM), chartered construction manager (FCIOB) and chartered management consultancy surveyor (MRICS).

Inspired by the CL4Bio Erasmus+ Project – Creative Learning for Boosting Bio-Economy within HEIs' Curricula (https://cl4bio.web.ua.pt) – this special issue continues the exploration of how higher education can evolve to meet the demands of the bioeconomy. The project promotes the integration of creative and interdisciplinary teaching methods to better connect academic instruction with practical applications in agriculture and related fields. The second part of the special issue *Bioeconomy and Agriculture towards New Advancements Thanks to Innovative Learning and Tools* explores how innovative educational strategies and tools can transform the agrifood and bioeconomy sectors. Building on the themes introduced in the first part, this collection of articles deepens the discussion by focusing on digitalisation, active learning, interdisciplinary collaboration, and behavioural assessment – all essential components for equipping future professionals with the skills needed to address sustainability challenges.

This part of the issue opens with Danylchenko-Cherniak's article, 'Digitalisation in agri-education: bridging theory and practice for sustainable agribusiness development'. This contribution highlights the crucial role of digital technologies, such as precision agriculture, the internet of things (IoT), and artificial intelligence (AI), in enhancing the practical skills of agribusiness graduates. The study points out the need for curricula to evolve alongside technological advancements to ensure that students are prepared to engage in sustainable and efficient agricultural practices. Furthermore, it emphasises the importance of addressing digital equity and ethical considerations in future research.

Next, Vieira and Peguinho present their study, 'Unlock the potential of active learning methods to revolutionise the learning process', the research evaluates the impact of active learning strategies in finance education. The findings indicate that active learning not only enhances academic performance but also boosts students' confidence and fosters a deeper understanding of the material. This research supports the overall theme of the special issue, which emphasises that innovative teaching methods are crucial for long-term educational development and student engagement.

In 'Interdisciplinary collaboration in bioeconomic education in Ukraine', Lytvynenko et al. examine how interdisciplinary approaches can enhance bioeconomy education in the context of Ukraine's European integration and socio-political challenges. The article provides a thorough analysis of both national and international practices, advocating for the adoption of dual-degree programs, integrated curricula, and collaborative models. It highlights the transformative potential of interdisciplinary education in preparing students to tackle complex global and local challenges.

Finally, Vicente et al. present their study, 'General ecological behaviour: validation for Portugal', which adapts and validates the general ecological behaviour (GEB) scale for the Portuguese population. This research provides a reliable tool for assessing pro-environmental behaviours, supporting evidence-based policymaking and educational interventions aimed at promoting sustainability. Validating such instruments is essential for understanding and influencing ecological attitudes and behaviours within diverse cultural contexts.

Together, these articles illustrate the dynamic interaction among technological innovation, pedagogical transformation, and interdisciplinary collaboration in shaping the future of bioeconomy and agricultural education. They offer valuable insights for educators, researchers, and policymakers dedicated to promoting sustainable development through educational initiatives. The second part of this special issue highlights the urgent need to equip students with the tools, knowledge, and mindset necessary to thrive in a rapidly evolving global landscape.

Declarations

The authors utilised AI-based language editing tools to enhance the clarity and grammar of the manuscript. No AI-generated content was included in the research findings or interpretations.

Co-funded by the European Union: Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or the National Agency of Erasmus+ Programme. Neither the European Union nor the National Agency of Erasmus+ Programme can be held responsible for them. Project No. 2022-1-PL01-KA220-HED-00008700.