Identifying Future Skill Demands in Agricultural Food Production: Insights from a Survey-Based Study

Solinho J.[1,2,3], Pereira-Pinto, R.[1,2], Vale, A.P.[2], Pinheiro R.[1,2]

1School of Technology and Management, Polytechnic Institute of Viana do Castelo, Avenida Atlântico 4900-348 Viana do Castelo, Viana do Castelo, Portugal
2Centre for Research and Development in Agrifood Systems and Sustainability (CISAS) of the Polytechnic Institute of Viana do Castelo, Avenida Atlântico 4900-348 Viana do Castelo, Viana do Castelo, Portugal
3EDIUS – International PhD School of the USC, University of Santiago de Compostela, 15705 Santiago de Compostela, Spain

Abstract:

Portugal's food production sector, particularly in rural regions, faces significant challenges in adapting to modern agricultural realities. This research investigates the future skill requirements within the agricultural food production sector. Utilizing survey data gathered during the Food Chase project (WP2 – Food Supply Chain Ecosystem for Sustainability), the analysis examines the perspectives of two crucial groups: students pursuing food-related academic programs and professionals currently employed within the sector.

Both producers and students, around 80% and 30%, respectively, identified lack of specialized technical knowledge in areas such as fertilizer use, pest control, and sustainable farming practices. This gap is exacerbated by a reliance on traditional methods and limited access to high-quality training and advisory services.

Producers, 80%, noticed that there is weak collaboration between academia and the industry hinders effective knowledge transfer and the development of tailored solutions to sector-specific challenges. University curricula often prioritize theoretical knowledge over practical, field-based training and fail to adequately address the evolving needs of the agricultural landscape.

The agricultural food production sector is characterized by small-scale, fragmented farms, limited economies of scale, and a complex regulatory environment. These factors hinder investment in technology, innovation, and strategic planning, leaving producers vulnerable to market volatility and climate change.

Rapidly changing market demands, evolving regulations, and increasing climate variability require producers to be highly adaptable and flexible. However, limited access to training in areas such as strategic planning, risk management, and market analysis hinders their ability to respond effectively to these challenges. These highlights the interconnected nature of these challenges and emphasizes the need for a multi-pronged approach to address them.

Fostering partnerships to develop and implement relevant training programs, conduct applied research, and facilitate knowledge exchange. Providing targeted training programs on sustainable farming practices, precision agriculture, and market analysis, particularly in rural areas. Encouraging collaboration among producers to improve market access, share resources, and enhance their collective bargaining power.

Facilitating access to and adoption of technologies that enhance productivity, improve resource efficiency, and mitigate climate risks. By addressing these challenges, Portugal can enhance the competitiveness and sustainability of its food production sector, ensuring food security and supporting rural development.

The findings will contribute to the development of more effective educational programs and professional development initiatives that equip future agri-food professionals with the skills and knowledge necessary to address the challenges and capitalize on the opportunities presented by a rapidly evolving sector.