https://doi.org/10.7250/CONECT.2023.093

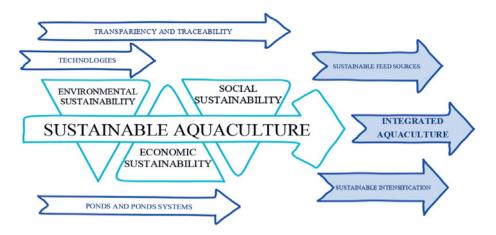
## CHALLENGES AND BARRIERS FOR AQUACULTURE SECTOR: REVIEW ARTICLE ON FRESHWATER AQUACULTURE

## Krista LAKTUKA<sup>1</sup>, Liga SNIEGA<sup>2</sup>, Kalvis Logins<sup>3</sup>, Dace LAUKA<sup>4\*</sup>

- 1-4 Institute of Energy Systems and Environment, Riga Technical University, Azenes iela 12/1, Riga. LV-1048. Latvia
- \* Corresponding author. E-mail address: dace.lauka@rtu.lv

Abstract - The EU aquaculture sector, like other sectors of the EU economy, must participate in the 'green transition' set out in the European Green Deal. The sector has a particular role to play in contributing to the transition towards sustainable food systems and the development of the bioeconomy and circular economy. Aquatic organisms and fish cultivated in aquacultures are important sources of food and feed, the importance of developing which has been highlighted in several EU policy planning documents. Due to high nutritive value, fish and aquatic organisms are a valuable food source. Despite the rapid growth of aquaculture in Europe and other parts of the world, the promotion of sustainable or organic aquaculture is crucial for the provision of high-quality, locally accessible food. Aquacultures produce relatively low greenhouse gas emissions compared to sources of protein grown on land. However, there is still room for growth, therefore, to further reduce greenhouse gas emissions from aquacultures and foster more sustainable practices and greater resource and energy efficiency are required. This review article includes an analysis of policy planning documents adopted in Latvia and the EU, outlining opportunities and risks for creating a sustainable aquaculture industry. The purpose of this review article is to identify the most significant problems and obstacles to achieving a sustainable aquaculture system at both the local and European levels. In addition, the review investigates and contrasts recent advancements in aquaculture technological processes and socioeconomic impact factors. Whether aquaculture's path to sustainability is jeopardized by inefficient consumption of resources and wastes (feed, energy, emissions) at the beginning or end of the organisms' life cycle.

Keywords - Bioeconomy; circular economy; pillars; sustainable aquaculture



Towards sustainable aquaculture.

## Acknowledgement

This work has been supported by the European Social Fund within the Project No. 8.2.2.0/20/I/008 "Strengthening of PhD students and academic personnel of Riga Technical University and BA School of Business and Finance in the strategic fields of specialization" of the Specific Objective 8.2.2 "To Strengthen Academic Staff of Higher Education Institutions in Strategic Specialization Areas" of the Operational Programme "Growth and Employment"