Project title: Decision Support Tool for an Integrated Food Waste Valorisation System (DeSTInation)

Project No. 1.1.1.2/VIAA/3/19/528

Project period: 01.05.2020. – 30.04.2023. (36 months)

Project costs: 133 805.88 EUR (113 734.99 EUR from EU as ERDF funding; 6690.31 EUR – the share of the University of Latvia)

Source of funding: European Regional Development Fund Specific Objective 1.1.1 "Improve research and innovation capacity and the ability of Latvian research institutions to attract external funding, by investing in human capital and infrastructure" 1.1.1.2. measure "Post-doctoral Research Aid". Project application selection round No.3.

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Objective: to develop a decision support tool for an integrated food waste valorisation system where the availability of feedstock, its bioconversion efficiency, and the related environmental and techno-economic effects are considered.

Results of the project: Four activities are planned in the project:
1. Modelling of food production and waste management macro-systems,
2. Modelling of biotechnology and waste conversion micro-systems,
3. Evaluation of an integrated food waste valorisation system,
4. Knowledge transfer, mobility and training.

The project will develop and validate an innovative methodology based on the Latvian example. The method will combine mathematical models created for different purposes in a single tool. In addition (1) 3 scientific articles will be published in journals indexed in Scopus and Web of Science databases with a citation index of 50% of the industry average; (2) results will be presented at 2 international scientific conferences; and (3) the young researcher (postdoctoral student) will develop her competence in research, study, international mobility and networking activities for a total of at least 3 months, as well as develop her transferable skills.

Information about the project: Food waste is among the most generated biogenic waste around the globe. Annually 1/3 of the global food produced is wasted, and waste occurs at all stages of the food supply chain causing negative environmental, economic and social effects. Food waste can efficiently be used as feedstock in waste biorefinery that can result in a number of value-added products. Food waste can play an important role in developing sustainable circular bioeconomy. Yet, there is a lack of tools for assessment of food waste valorisation systems. In the project a decision support tool will be developed for an integrated food waste valorisation system where the availability of feedstock, its bioconversion efficiency, and the related

environmental and techno-economic effects are considered. The novelty of the project is the selected hybrid modelling methodology that provides the possibility to test and assess a variety of food waste valorisation scenarios before their implementation.

As a result of the project, the postdoctoral researcher will significantly improve her scientific, managerial and communication skills, which will help her achieve the status of an independent, mature researcher.

The project will promote the development and implementation of the smart specialization strategy area "Knowledge-intensive bioeconomy" through more efficient use of resources (eco-innovative products, new technologies), innovation capacity building (innovative decision support tool), knowledge base and human resources development (knowledge-intensive bioeconomy), innovation systems (eco-innovative products) and overcoming social, environmental, climate and energy challenges. The results of the project will be used by several target groups.