

<https://doi.org/10.7250/CONNECT.2023.121>

IDENTIFICATION OF THE WEAK STAGES OF THE AGRICULTURAL SECTOR'S PROGRESS TOWARD CLIMATE NEUTRALITY

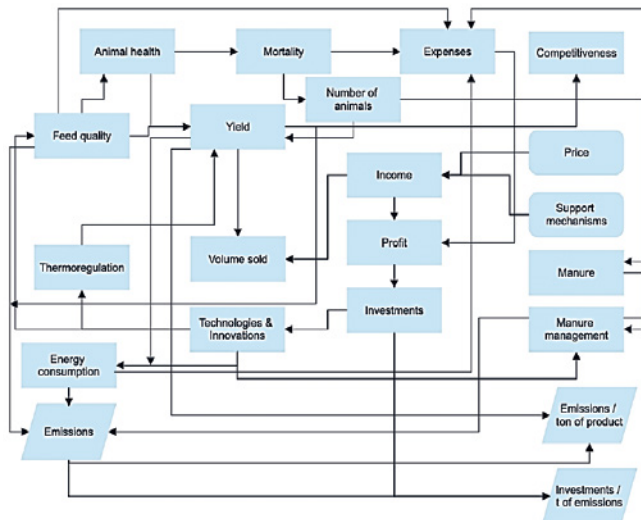
Ketija BUMBIERE^{1*}, Edite MEIKULANE², Armands GRAVELSINS³,
Jelena PUBULE⁴, Dagnija BLUMBERGA⁵

¹⁻⁵ Institute of Energy Systems and Environment, Riga Technical University, Āzenes iela 12/1, Riga, LV-1048, Latvia

* **Corresponding author.** E-mail address: ketija.bumbiere@rtu.lv

Abstract – The agricultural sector's progress towards climate neutrality is of great importance not only in the climate but also in the economic and social context. The agricultural sector is the 3rd largest emission-generating sector both in Latvia and Europe, and it directly and/or indirectly affects all other sectors. Climate-neutral agriculture is highly dependent on innovations that ensure maximally efficient farming, which does not only reduce emissions, but also ensures competitiveness in the market. However, all of this is fundamentally influenced by well considerate policies. Although the goals of the Green Deal are united, each country's situation must be thoughtfully considered individually to evaluate the best action plan for integrating the EU's common agricultural policy. In addition, due to the complicated structure of the sector, it tends to be very difficult or even impossible to determine the real obstacles and mistakes that delay the progress of sustainable farming. Therefore, this research aims to create a system dynamics model using Latvia as a case study, which would not only provide an insight into the system's structure but also identify the system's weak links and allow for the development of recommendations. The results could help policymakers in any country to make rational, non-controversial decisions simultaneously in the context of economic and Green Deal objectives. The results of the study demonstrate that in order to increase economic competitiveness and reduce emissions in agriculture, the most important aspect is the ability to invest in innovations and new technologies that would achieve not only the lowest emissions, but also the highest productivity and competitiveness in the market.

Keywords – *Agriculture; climate neutrality; GHG emissions; innovations; policy; system dynamics; sustainability*



Simplified agricultural (dairy) enterprise scheme.