

**Nordic Association of Agriculture Science (NJF)**  
**Continuous international scientific conference**  
**“Challengers of Economics, Education and Society Development in the Nordic – Baltic Countries and beyond” organised by Section of Economy, Education and Society**  
**Programme for the virtual seminar on **March 1<sup>st</sup>, 2023 (Wednesday)****  
**13:00 to 14:30 Eastern European time (12:00 to 13:30 Central European time)**  
*The link for joining the conference event presented at the end of this programme*

### **Presentation 1**

**Title: Development of innovative internal combustion engine throttle valve from the perspective of sustainability**

**Speaker: Karlis Banis**, Latvia University of Life Sciences and Technologies

**Author: Karlis Banis**, Latvia University of Life Sciences and Technologies

**Annotation:** This study investigates the potential applications for a new type of internal combustion engine throttle valve, from the perspective of sustainable transportation. Within the scope of this study, the evolution of internal combustion technology and its relationship with climate change has been investigated and the fundamental operation of intake systems described. Advantages and disadvantages of different throttle valve designs have been analysed and a new concept developed to improve over the existing and patented designs. Experimental investigation shows that the newly developed internal combustion engine throttle valve can surpass the commercially used butterfly type valve in both efficiency and performance, highlighting the importance of continual improvement of internal combustion technology as part of sustainable transportation.

### **Presentation 2**

**Title: Environmental Pressures of Food Loss in Lithuanian Agriculture: The Case of Water Footprint**

**Speakers: Erika Ribašauskienė**, Lithuanian Centre for Social Sciences

**Authors: Erika Ribašauskienė, Tomas Baležentis and Ovidija Eičaitė**, Lithuanian Centre for Social Sciences

**Annotation:** Agricultural production causes multiple impacts on the environment. Among these, the use of water resources is pronounced. The water resources are needed to ensure the quantity and quality of agricultural production. The agricultural production is also related to food loss as some (share of) products intended for human use cannot be further processed or consumed. This renders waste of resources including water. The footprint methodology provides an avenue for quantifying the environmental pressures. The water footprint allows one to track the volume of water needed for agricultural production. The loss of agricultural products causes a certain waste of water resources that can be quantified by exploiting the water footprint. This paper applies the index decomposition analysis (IDA) to decompose the changes in the (green) water footprint associated with food loss in the primary production in Lithuania. The results indicate that there have been different patterns of crops associated with different regimes of the Common Agricultural Policy during 2003-2021. The extensive factor of the total agricultural area sown under crops caused much of the increase in the water footprint associated with the food loss in the primary production.

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