

MATERIAL FLOWS AND STOCKS OF HUNGARIAN FOOD SUPPLY CHAIN

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Food consumption is one of the key drivers of increasing environmental impact of the society, together with housing and mobility. The agricultural sector provides primary products of the food supply chain; however, relatively few works have aimed the analysis of this sector through the lens of socio-economic metabolism yet.

Analysis of material flows dominated the studies of socio-economic metabolism in 90's and early 00's. Recently, the focus is on the material stocks as an intensively emerging field: the formation of methods, inventories and databases is in progress; nevertheless, interpretation with regard to environmental policy is often lacking.

Our study analyses material stocks, input flows, useful outputs (products) and emissions of Hungarian food supply chain at the macro level, between 2005 and 2015. International databases (FAOSTAT, EUROSTAT) and Hungarian databases provide information about input and output flows, as well as several types of stocks (e.g. machinery, livestock). Other stocks (buildings, ICT and other infrastructures) will be estimated on the basis of model units representing the most important farming systems of Hungary.

Important results are provided by the benchmarking of the food sector as a subsystem of the society with other subsystems. Our former analyses of transportation networks and household consumption show high level of accumulated stocks relative to the annual input flows. It is assumed, that agricultural production processes require relatively high amount of inputs (if soil is excluded, as a stock of natural system) and less stocks.