

State of the art in development of physical supply and use tables for the Czech Republic

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Sustainable consumption and production aims at “doing more and better with less,” increasing net welfare gains from economic activities by reducing resource use, degradation and pollution along the whole lifecycle, while increasing quality of life (UN, 2017). In order to measure resource use and to mitigate the related problems, material flow analysis has been conceived. The aim of this accounting and analytical approach is to monitor material and energy flows at various levels of detail, and to provide indicators which contribute to management of resource use and pollution flows from both economic and environmental points of view (OECD, 2008). The economy-wide material flow analysis (EW-MFA) treats the economy as a black-box monitoring overall input and output flows only while inter-industry physical flows are neglected. In order to increase analytical potential of this tool, it is advisable to construct a physical input-output table (PIOT) which shows input of raw materials and products by industries, inter-industry deliveries of products and a breakdown of output products and waste residues by industries. Data from PIOT can be used to analyse physical flows, considering the economic activities and structural changes that lie behind these flows, to analyse technological change, material substitution and to assess the effectiveness of policies targeting at sustainable consumption and production.

Input-output tables in monetary units are regularly compiled by statistical offices. This is not true for physical input-output tables, as compilation of PIOT is a labour-intensive task involving many data entries. The procedures for compilation of PIOT are defined in the System of Environmental-Economic Accounting (SEEA) (UN et al., 2014). PIOT is composed of two basic building stones: physical supply tables and physical use tables (PSUT). While physical supply tables set out the flows relating to the production, generation, and supply of natural inputs, products and residuals by different economic units or the environment, the physical use tables set out the flows relating to the consumption and use of natural inputs, products and residuals by different economic units or the environment.

The poster summarizes main principles for compilation of PSUT and presents state of the art in development of first ever PSUT for the Czech Republic for 2014. It is shown that the availability of physical data in mass units is medium to high for most parts of PSUT. The unavailable data include the intermediate consumption of products and accumulation of materials in physical stock of the economy, for instance. These data are estimated with the help of proxy variables such as use tables in monetary units and applying the balance identities for products and all materials entering and leaving the economic system.

References:

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