

Abstract

This dissertation is based on the conceptual framework of social metabolism and it applies methods of Material and Energy Flow Analysis and Ecological Footprint. It studies interactions between human activities and natural environment in Czech/Czechoslovak territory from the historical perspective (after the division of Czechoslovakia for Czechia and Slovakia together). The term of social metabolism is a metaphor inspired by biology. Society or human economy similarly to a living organism which extracts materials from the earth, processes biophysical materials to maintain itself and emits its wastes back. So the economic system functions in an analogy to a living organism and those processes are called “social” or “industrial” metabolism.

This dissertation comprises seven individual empirical studies: (I) An introduction to a research topic covered in following articles. It is based on the work of leading world environmental historian and it interprets selected Czech realities within the context of the world environmental history. (II) The historical series of MEFA indicators together with ecological footprint. (III) An article which applies the ecological footprint method on the ecological farm in comparison to conventional agriculture in the context of more foreign studies on this topic. (IV) An Energy Flow Analysis of Czechoslovakia from historical perspective from the establishing of Czechoslovakia to 2000. (V) An Energy Flow Analysis (EFA) for Czechoslovakia in the time period 1830-2000 that tracks changes in the region’s socio-economic energy use during several stages of political regimes. The effects of energy use on the region’s land use system are also discussed. (VI) A case study of the Czech agriculture from social metabolic perspective which presents selected energy flow indicators and analyses inputs and outputs of energy to and from the agricultural system. (VII) An analysis of socio-economic drivers of CO₂ emissions in Austria and Czechoslovakia during the 19th and 20th centuries that provides an insight into the similarities and differences between the two countries.

Industrialization changed the sociometabolic profile of Czech/Czechoslovak territory in a fundamental way. In spite of intensification and growing efficiency of the Czech economy the development didn’t proceeded in a sustainable way.