TOPIC: **THE SOCIOMETABOLIC TRANSITION IN HUMAN HISTORY AND PRESENT, AND THEIR IMPACT UPON BIODIVERSITY**

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This topic aims to present the transition from an agrarian to an industrial sociometabolic regime and impact of this process to biodiversity. The contents include characteristics of agrarian and industrial terms, the metabolic profile, the sociometabolic regimes, and the transition process.

MEFA (Material and Energy Flow Analysis) model is used for analysing the sociometabolic profile. Historical evidence suggests that industrialization is a transition process allowing populations to overcome scarcity and the sustainability problems of the agrarian sociometabolic regime. While development and growth within the agrarian regime is based on a controlled solar energy system; the fossil fuel–based energy system, which relies on the large-scale exploitation of nonrenewable stocks, is thus at the core of the industrial sociometabolic regime.

The transition from an agrarian to an industrial sociometabolic regime (1600-2000) with 6 characteristics, not only facilitates economic growth, structural change, and a certain worldwide uniformity in social forms and institutions, but it is inherently linked first to population growth and later to a surge in material and energy use per capita.

Whereas in the agrarian regime scarcity, poverty, and an overexploitation of natural resources are always pending, the dominant impression within mature industrial regimes is that of abundance (however unevenly distributed). Due to its enormous material and energy use, the industrial regime currently faces output-related sustainability problems resulting from pressure on the regional and global absorptive capacity of natural ecosystems for wastes and emissions. Some of these problems have been solved technologically (e.g., acid rain), but other local and global environmental problems of the industrial sociometabolic regime continue to emerge or get worse. The list of severe sustainability problems experienced by the industrial sociometabolic regime includes a change in atmospheric composition threatening world climate and unprecedented biodiversity loss.

175 countries were clustered from data set according to development status (developing and industrialized countries) and population density (high density and low density). Those countries were separated from the two low-population-density clusters according to their agrarian history, into Old World and New World countries.

The discussion of this topic only concentrated on term of collapse within regime and approaches of research question for the next sociometabolic transition.

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