

The Carbon Footprint of the Rising Indian Middle Class

Nicole Grunewald
University of Göttingen

Jann Harteisen
GIGA German Institute of Global Area Studies

Jan Lay
GIGA German Institute of Global Area Studies

Sebastien Minx
Technical University of Berlin

Sebastian Renner
GIGA German Institute of Global Area Studies

Household consumption has increased considerably in line with economic growth over the last decades, and thus accounts for a significant share of global greenhouse gas emissions (GHG). Particularly in large emerging economies with a rising middle classes such as India, both direct and indirect energy requirements of households have increased rapidly and are likely to expand further. However, energy consumption and carbon/GHG footprints vary with what and how households consume. Thus, knowledge about consumption patterns, their dynamics, and their respective GHG intensities is crucial for effective climate change mitigation policies at the micro level. In a first step, we apply input-output energy analysis in combination with household expenditure survey data from India for the years 2000, 2005 and 2010; we first calculate the total energy requirements of households by income groups and analyze the respective emission drivers. In a second step, we estimate income elasticities for a number of different consumption categories, again differentiating between households by income groups. The derived income elasticities for different consumption goods are then converted into GHG income elasticities. By disaggregating household expenditure, we reveal how consumption patterns change when households become more affluent. We observe a disproportionately high increase in the demand for emission-intensive goods and services in comparison to less emission-intensive consumption categories. Such a non-linear increase of GHG-intensive consumption is of great significance given that India has a large emerging middle class ready to spend its increasing discretionary income on a variety of emission-intensive consumption items.