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Bridging the Dynamics of Food Systems Change in Sub Saharan Africa to the Water-Energy-Food Nexus: Human Development Index

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With increasing worldwide household incomes, a higher diversification in people's diet is found. The high, urban, population growth, which is connected to an urban-rural population shift and lifting per capita incomes, is changing the dietary patterns in Sub Saharan Africa (SSA). For the past decades, global nutrition transition has been seen as an indicator describing the human development, in which people worldwide choose a more Western diet above their traditional diet. Easier accessibility has induced households to increase the intake of non-staple food (meat, fish, dairy products, edible oils, fruit and vegetables), with a decline of the share of staple food (cereals, pulses, including roots and tubers). A shift to a western diet, for SSA will have strong competitive effects on the SDGs, in temporal and spatial divergent patterns of urban and rural areas. To understand how these changes in these resource flows affect environmental pressure, we studied micro- and macrodata on nutrition and use of energy and water of 11 low and lower middle-income SSA countries, at regional and national scales. Patterns show large differences among and in countries; main variables seem to be the energy pathway (country policy), the degree of urbanisation (economic hotspot) and the shift in diet (urban/rural wealth). To bridge the temporal and spatial differences on these socio-ecological systems, we studied the use of the Human Development Index (HDI) to interconnect not only the ecological data but also the socio-economic data at national and subnational (urban – rural) scales. Assessing the Water-Energy-Food Nexus using HDI as an integrator of human well-being and economic growth (GDP/GNI) looks promising to understand the trends in resource flows on human development and its impact on the environment at divergent scales.