

Can we Reverse Environmental Degradation and Improve Food Security by Rethinking the Role of Cities and Urbanites?

Jan-Olof Drangert

Linköping University, Sweden

Abstract

As urbanization stabilizes during this century, 85% or some 8.5 billion people, will reside in urban areas. These areas become hotspots for the demand of water and food, while disposing vast volumes of wastewater and organic waste including human excreta. Today, agriculture is a major contributor to global environmental degradation and occupies half of the earth's inhabitable area. Global resources limits/boundaries for provision of food and water together with serious degradation of the environmental conditions will put the recycling issue on the global agenda. Global data on resources and causes of pollution are forthcoming, making it possible to conjure future resources restrictions and imbalances of nutrients and water. Also, emerging infrastructure and technologies will make it possible to reduce household demand for water by at least half and a return to more plant-based diets, intensified food production, and food production in "food factories" using recycled nutrients will free presently used land areas. The geographical concentration of disposal of resources from urban areas will facilitate recycling of water and nutrients after use. But such progress can only be achieved with new sanitation arrangements and a reduction of household usage of harmful chemical products. Thus, the demands of water and nutrients for food production can be substantially reduced, while global degradation of the environment (GHG emissions, eutrophication, land use, biodiversity loss, etc.) is reversed and vast stretches of agricultural land can be returned to Nature. Such favourable conditions can be achieved through reconnecting urban and rural resource flows by recycling arrangement. A combination of functionally improved installations in households, return to more plant-based diets, redesign of infrastructural, etc. is likely to guide the next generation of urban planning and resource flows.

Keywords: global resource boundaries, environmental degradation, urbanization, resource flows, recycling of water and nutrients