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Waste Resource Management on a Regional Level: Can Urban Wastes Be Used as Resources in Rural Areas? — A Comparative Case Study in Colombia and Tanzania

ANJA BLUME¹, CLAUDIA BINDER²

¹*Carl von Ossietzky Universität Oldenburg, Department of Geography, Germany*

²*Swiss Federal Institute of Technology (ETH), Department of Environmental Sciences: Environment and Social Interface, Switzerland*

Abstract

By the year 2010 around half of the population of the so-called developing countries will live in urban areas. Here, on the one hand, agricultural land is being exploited to nourish an ever increasing urban population, but management of household organic waste and faeces is often only being solved rudimentary. On the other hand, organic wastes, which are mostly dumped, could be reintegrated into the nutrient cycle. Colombia and Tanzania dispose of a high potential for waste recycling as here household waste consists of a high portion of organic components (approximately 70–80%) which could be composted. A carbon and nutrient cycle between urban and rural areas could contribute to ecological and economic sustainability through recycling organic waste materials into food production: Through application of composted organic wastes not only a humus carrier for organic poor tropical soils could be supplied, also substantial costs for inorganic fertilisers could be reduced.

The poster will describe an upcoming project, which is to contribute to the growing interest of integrating soil fertility problems and organic waste treatment. The project integrates knowledge from natural and social sciences. In a first step, we investigate the fluxes of soil organic matter (SOM) as well as knowledge on organic waste management in an urban-rural context on a regional level. Hereby, the method of material flux analysis will be applied to a watershed in Colombia and Tanzania. Possible contributions of a whole rural-urban region for preserving SOM in the rural areas are to be modelled. Based on these estimations potentials for carbon cycling between rural and urban areas shall be derived.

One major issue of the utilization of processed urban wastes in rural areas is the acceptance. Thus, the project will focus on knowledge dissemination processes regarding waste management between the different actors involved to be modelled in so-called knowledge-flow diagrams. Therefore, problem perception in rural and urban areas as well scenarios are to be developed together with the local actors in a participative process. By this, the project contributes to transdisciplinary research.

Keywords: Acceptance, Colombia, composting, knowledge dissemination, material flux analysis, organic waste management, soil fertility, Tanzania, transdisciplinary approaches