



Land footprint associated with feed and food consumption in Denmark

Dario Caro, Albert Owusu-Osei, and Marianne Thomsen

Aarhus University, Risø, Department of Environmental Science, Roskilde, Denmark (dac@envs.au.dk)

How much land is required to support domestic food and feed consumption in Denmark? Our analysis assesses the cropland footprint of Danish food and feed supply from 2000-2013 using a consumption-based accounting. We estimate the hectares of land displaced in other countries to satisfy Danish food and feed consumption. In particular we give emphasis to the livestock sector, estimating the land footprint associated with the domestic supply of specific livestock products consumed in Denmark. The analysis finds that the land footprint of Danish food and feed supply decreased by 18% from 2000 to 2013 because of a reduction in the consumption of ruminant livestock products. A high share of this reduction can also be attributed to the local self-sufficiency in feed supply as opposed to rising food import. The land area imported for domestic food supply exceeded those for domestic food production. The import of feed for livestock production in Denmark also resulted in land use changes outside Denmark. The land is mainly imported from South America where Argentina plays a key role in satisfying Danish consumption of feed and food. Our analysis is based on a physical accounting scheme that uses data from the FAO's Supply Utilization Accounts system (SUAs). The SUAs provides a detailed commodity level, covering over 200 different primary and processed crop and livestock commodities that are applicable to the allocation of land. The model covers the complete agricultural and food processing sectors for 199 countries estimating the domestic crop supply from these countries related to final consumption in Denmark. While the environmental impacts of agricultural production are often localized, international trade has prompted the displacement of such impacts on other countries through consumption. The findings in this study reveal the producer and consumer influence in the supply chain of Danish consumption, identifying, the main actors of the Danish land footprint.