

## Intercity Footprint Networks

Topic: Regional Analysis

Author: Guangwu CHEN

Co-Authors: Thomas O. WIEDMANN

Cities are associated with most of humanity's consumption of natural resources and impacts on the natural environment, making them primary agents of change in a resource and carbon constraint world. Some research suggests that up to 80% of global greenhouse gas emissions could be attributable to cities. However, only a small proportion of environmental impacts actually occur within city borders; the majority of resource use and carbon emissions takes place in the city's 'hinterland' which, due to globalisation, is nowadays literally the rest of world. In order for city governments to set meaningful targets, design successful policies and implement effective mitigation strategies, it is important that resource use and emissions accounting for cities is accurate, comparable, comprehensive and complete. However, a lack of consistent guidelines is hampering efforts to identify stakeholders and responsibilities and assign stewardship. Furthermore, the exact links to a city's hinterland have not yet been studied in detail. For example, how much of this hinterland is actually made up of other cities?

Building on the recent development of the 'city impact map' concept, this presentation introduces the carbon map of the five largest Australian cities. The detailed map shows the flows of direct and indirect (embodied) carbon emissions of all cities and their regions, Australia and the rest of the world. In particular, we are able to show for the first time the interconnectedness of cities and the extent of embodied carbon flows between them. Results for Sydney, Melbourne, Brisbane, Perth and Adelaide are presented and options for the decarbonisation of cities are discussed. Besides the responsibilities of households, the government's are also separated and discussed in this study. We also discuss the limitations and challenges of the approach.