Development of a city-level multi-regional input output database for sustainable city management in Japan

Topic: Environment-Extended IO Analysis at City Level
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Resource and environmental management are global issues recognised in Target 12.2 of the SDGs). At the same time, they are also local issues as resources are used in municipalities where factories and industries are located, and consumed mainly in cities where urban development occurs to accommodate growing populations. Targets 11.a and 11.b of the SDGs also clearly mention the importance of â€˜adopting and implementing integrated policies and plans towards resource efficiency, mitigation and adaptation to climate change and resilience to disastersâ€™.

In order to improve the quality of city environments, enhance development planning capabilities at the municipality level, and adequately respond to potential disasters, practical approaches to assessing economic, environmental and social impacts of urban development or potential disasters must be made available to researchers and policy-makers. These approaches should provide information at a holistic level, by including the cityâ€™s resource and environmental hinterland, and by enabling municipal decision-makers to use them to react to challenges in a timely manner. To this end, we develop the Japan Industrial Ecology Laboratory (IELab), a detailed collaborative research platform that provides input-output-based analytical and decision tools, enabling users to investigate research questions on the nexus of sustainable development, resource use, urban planning, and supply-chain relationships connecting local municipalities with the rest of Japan. More specifically, we improve on existing time series of 47-prefecture multi-region input-output (MRIO) tables for Japan, by enabling MRIO analysis at the municipal level using the most up-to-date data sources, covering 4290 sectors at municipal level, for the 2005-2016 period.