Challenges of input-output modelling for statisticians â€" with a focus on environmental applications

Topic: SUT compilation issues relevant for users
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The mission of national statistical institutes is to provide high-quality statistics to inform decision-makers and the general public. Statistical institutes compile supply, use and input-output tables, as well as environmental accounts. However very few statistical institutes publish statistics estimated with input-output modelling, such as environmental footprints. The main challenge is how to produce high-quality environmental footprints with limited time-lag that can be regularly updated. Research groups have developed multiple multi-regional input-output databases. However, these are only updated if additional funds are obtained. The methods used are still experimental, usually not generally agreed and maintenance of the database is not guaranteed.

Currently, Eurostat and the Joint Research Centre are cooperating to develop an EU inter-country input-output (ICIO) dataset of high quality, with agreed methods, that will be regularly updated. This database should in the future be the standard reference for both statistical institutes and researchers. The first experimental table for the year 2010 was published last year. Eurostat also collects and publishes air emissions accounts, material flow accounts and energy flow accounts.

However, for using the EU ICIO table for applications, there are still challenges to overcome. First, the dataset only covers the EU. Integration with the ICIO of the OECD is foreseen, but may still be several years away. To estimate footprints, an interim solution to estimate the environmental flow or pressure embodied in imports is needed. A second challenge arises in the context of material footprints. The EU ICIO represents 64 economic activities, which is not enough detail to provide good quality material footprints. Introducing more detail is hampered by data availability and confidentiality. Hence, estimation methods are needed to introduce this detail. This paper discusses these challenges in more detail, presents ideas how to best handle them, and proposes a way forward.