

PRINCE

Policy Relevant Indicators for National Consumption and Environment



P2CS project March 2019

The PRINCE project developed a set of new indicators to measure the environmental impacts of Swedish consumption

The SEI Initiative on Producer to Consumer Sustainability (P2CS) is an SEI-wide research initiative that connects the sustainable production and sustainable consumption agendas. P2CS explores the links and interactions within production-to-consumption systems – encompassing global flows of commodities and the impacts, dependencies and wider dynamics associated with production and consumption – in order to find new opportunities to enhance their sustainability.

The initiative enters its third implementation phase in 2019.

Environmental footprinting is well established as a way of measuring the global impacts of our consumption. But to date it has been little more than an awareness-raising tool, highlighting the disproportionate pressure rich consumers put on the natural world. It can also provide a sobering counterpoint to environmental performance indicators that look only at environmental performance within a country's own territory.

In 2018 the PRINCE research project, in which SEI was a key partner, delivered a new type of consumption-based environmental indicators for Sweden, showing how footprinting can be go far beyond awareness-raising to provide policy-relevant information.

PRINCE involved a consortium of high-profile Swedish and European researchers, led by the Swedish national statistical bureau, Statistics Sweden. The project explored new approaches could give unprecedented detail about where the impacts of Swedish consumption are falling in the world, and linked to which product groups. The project also worked on developing indicators for a much broader range of environmental impacts than are usually available in macro-level national footprint accounts.

The core PRINCE indicators were developed using a tailor-made model. This model linked a multiregional input-output (MRIO) model, EXIOBASE3, with Swedish national environmental-economic accounts. This made it possible to directly compare and combine estimated impacts along the international supply chains feeding Swedish consumption (using EXIOBASE data) with accurate data about consumption-based impacts within Sweden.

The main impetus behind PRINCE was Sweden's uniquely ambitious environmental policy goal of handing over to the next generation a society in which the major environmental problems have been solved, without exacerbating environmental and health problems outside Sweden's borders. The PRINCE indicators make it possible to follow up on the so-called Generational Goal by directly comparing the impacts of Swedish consumption inside and outside Sweden.

SEI's role

SEI expertise contributed to every aspect of PRINCE, including leading on project communications and coordinating scientific output. Other key contributions included:

- Leading work on comparing available estimates of Sweden's consumption-based emissions – from Sweden's national indicator system to several MRIO databases. This was a first step in developing the PRINCE model.

Photo (above):
Shopping street, Stockholm
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Researchers involved

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Dates: 2015–2018

Duration: 36 months

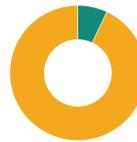
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GHG emissions



SO₂ emissions



NO_x emissions



Land use



Water consumption



Materials use



 In Sweden

 Outside Sweden

Visualization of some of the PRINCE results: shares of Sweden's total consumption footprint falling inside and outside Sweden.



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Stockholm Environment Institute is an international non-profit research and policy organisation that tackles environment and development challenges.

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- Developing a new method for tracking impacts of wild-caught marine fish consumption, differentiating between species, capture methods and locations in order to better estimate potential impacts on marine ecosystems.
- Leading work to reweight PRINCE indicators of water use in food production based on water scarcity in the production sites.
- Estimating the carbon emissions from marine cargo ships bringing goods to and from Swedish ports, using a new data-driven approach.
- Demonstrating how supply chains can be traced from Swedish consumption all the way back to subnational areas of production, linking the Trase.earth and SEI's IOTA MRIO model.
- Participating in studies to develop world-first footprint indicators for the use and emissions of hazardous chemicals; and on the carbon emissions from tropical deforestation embedded in a range of traded commodities.

Results

Maintaining a constant dialogue with the Swedish Environmental Protection Agency (EPA), the project was able to have an almost immediate impact on Sweden's national environmental accounting. Starting in 2018, both Statistics Sweden and the EPA have adopted the PRINCE model for their published consumption-based greenhouse gas emissions statistics.

PRINCE also developed many advances in the field of environmental footprinting and accounting, from demonstrating how MRIO can be combined with national statistics to produce detailed consumption-based accounts to new ways of measuring different environmental pressures linked to consumption. Read more about the project, the results and the academic papers published under the project at <http://www.prince-project.se>.

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