

## From top-down to interactive economic assessments – example Finland

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Finland started to assess possible economic impacts of climate change as part of the so-called SILMU program<sup>1</sup> from 1992 to 1995. In that time it was still based largely on a top-down approach and tentatively downscaled information regarding changes in climate conditions and hydrology, and their implications for economic production. SILMU indicated an – on balance – positive effect for Finnish GDP, even though it warned for possible negative spillovers from abroad.

About 10 years later the dedicated FINADAPT project<sup>2</sup> reviewed all available information and managed also to use information from ongoing studies in Finland. The increased amount of Finland-specific and sector specific information allowed for a sector based approach regarding economic impact assessment. Yet, for various sectors information was still scant, whereas it had dawned upon the researchers that, effects of extreme events and of adverse events in other countries were not seriously included in the assessment. As a consequence FINADAPT was more cautious and indicated that domestic effects altogether would not alter GDP much, but imported effects *and* extreme events could alter this prospect in a less favorable direction.

FINADAPT spurred a set of follow-up studies, many of them supported via the ISTO program<sup>3</sup>. As regards economic assessment of impacts and adaptation several studies were initiated concerning better risk handling, e.g. in urban planning and in agriculture<sup>4</sup>. The TOLERATE study<sup>5</sup> focused on deeper economic assessment of extreme events, looking both at direct damage *and* overall (regional) economic, while also the evaluation of counter-measures embedded in group decision making was considered. The study indicated that for unfortunate combinations of adverse circumstances negative regional economic impacts can be significant and semi-permanent. Yet, adequate provisions, good insurance coverage, and a resilient economy can attenuate the effects substantially.

A follow-up study of the TOLERATE study is the IRTORISKI project<sup>6</sup>. It aims to scan impact pathways and vulnerabilities for selected extreme phenomena, reinforced by climate change. The study produces economic impact estimates for selected event types. The study includes a series of interactive expert sessions, to ensure that the selected phenomena and the presentation of results have practical relevance for decision making at regional levels. The scan should result in the outline of a combined event tree analysis and cost-benefit analysis.

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<sup>1</sup> . <http://www.aka.fi/Tiedostot/Tiedostot/Asiakirjat/Silmu.pdf>

<sup>2</sup> . <http://www.environment.fi/default.asp?contentid=202905&lan=en&clan=en>

<sup>3</sup> . <http://www.mmm.fi/en/index/frontpage/ymparisto/ilmastopolitiikka/researchprogrammeonadaptationtoclimatechange.html>

<sup>4</sup> . e.g. ADACAPA project: <https://portal.mtt.fi/portal/page/portal/mtt/kestavatuotanto/muuttuvailmastojaamaatalous/adacapa>

<sup>5</sup> . [http://www.vatt.fi/file/vatt\\_publication\\_pdf/t158.pdf](http://www.vatt.fi/file/vatt_publication_pdf/t158.pdf); [http://www.vatt.fi/file/vatt\\_publication\\_pdf/k449.pdf](http://www.vatt.fi/file/vatt_publication_pdf/k449.pdf)

<sup>6</sup> . Ongoing project (partners: FMI, VTT, VATT) funded by the ISTO program