Recent IAM-research in Sweden

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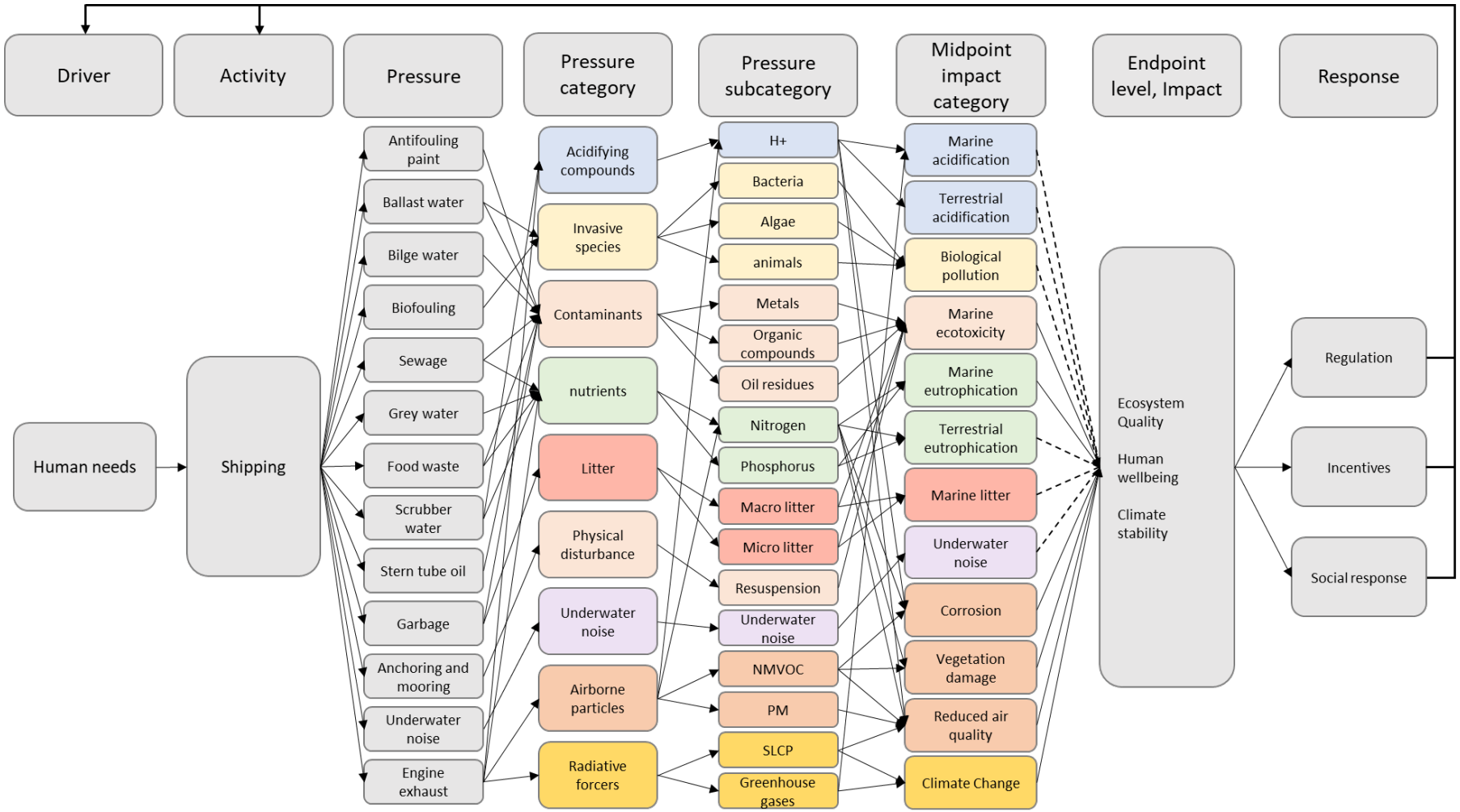
Outline

- Socio-economic effects on the marine environment from international shipping air emissions in the Baltic Sea?
  - Research funded by the Swedish Transport Administration
  - Analysis made by Erik Ytreberg, Erik Fridell & Stefan Åström
- Effects of having a national focus when monetizing benefits of emission control?
  - Funded by the Swedish Environmental Protection Agency in the research programme Swedish Clean Air & Climate Research program
  - Analysis made by Katarina Yaramenka, Stefan Åström, Mike Holland

Socio-economic effects shipping

- Background
  - Shipping cause large effects on the environment and human health,
  - Most, if not all, analysis takes a silo approach to analyse effects of shipping. Analysis of air pollution often separated from analysis of climate change, which is separated from analysis of effects on marine environment.
  - This silo approach risk leading to suboptimal strategies:
    - For example the use of open-loop scrubbers.
  - An integrated approach could help mitigate this problem

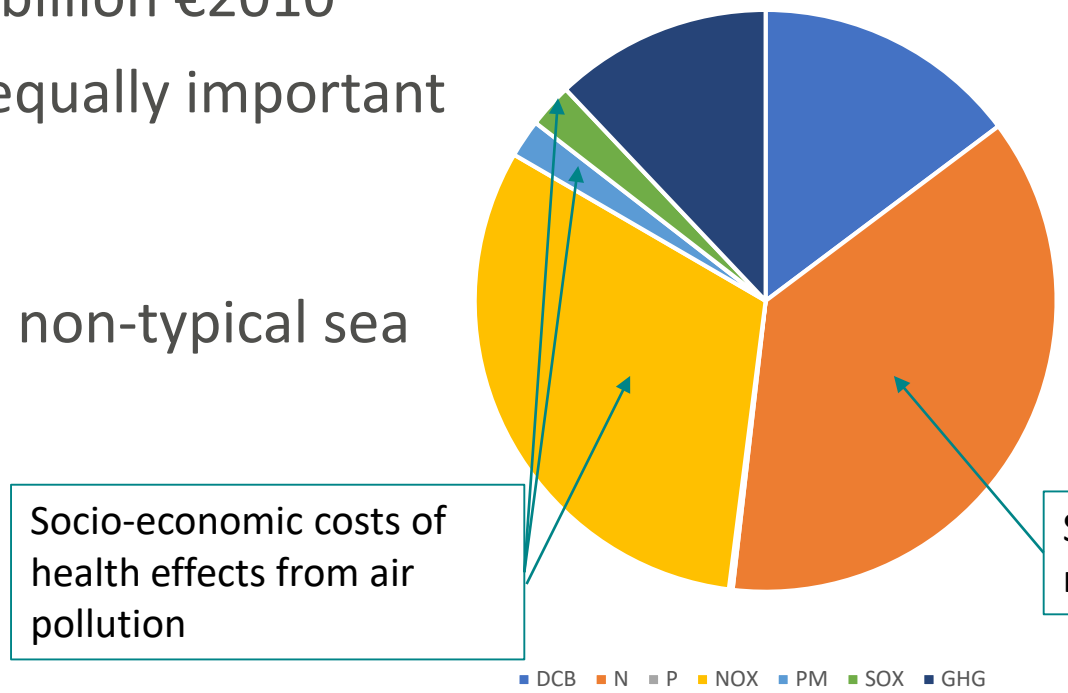
Socio-economic effects shipping - Framework for analysis (DAPSI(W)R(M)



Preliminary results: do not cite or quote!!

Socio-economic effects shipping - Preliminary results for the Baltic Sea

- Total socio-economic costs of Baltic Sea shipping in 2018 estimated to 2.4-4.3 billion €2010
- Marine nitrogen deposition equally important as health effects
  - (based on only 1 WTP-study)
- However: the Baltic Sea is an non-typical sea



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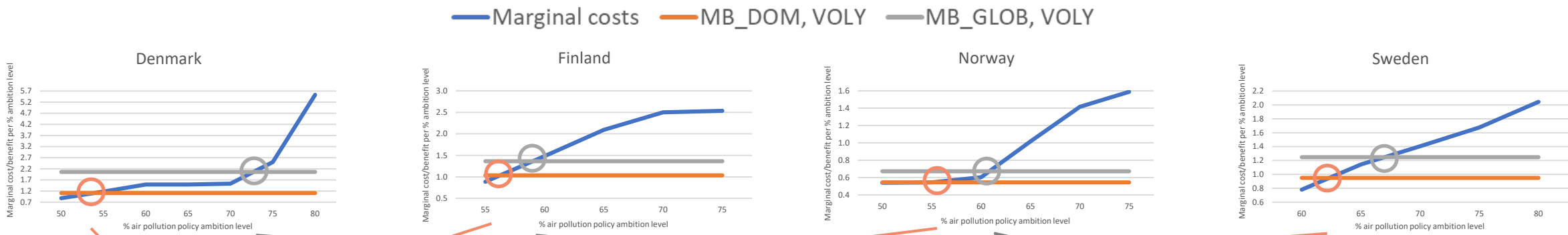
National focus when monetizing benefits

- Background
  - Economic instruments have become a popular policy tool to reduce air pollution emissions in several countries,
  - According to standard economic theory: Socio-economic efficient emission control when marginal cost of control = marginal benefits of control
  - In order to know the efficient level of emission control, one therefore need to estimate the marginal benefits of control
  - However, current practice in several countries:
    - ignore transboundary portion of air pollution effects when estimating marginal benefits of emission control

National focus when monetizing benefits - Method

- Q: Could such a national focus lead to inefficient emission control?
  - GAINS Scandinavia to estimate emission control marginal cost curves
  - Alpha Riskpoll to estimate marginal benefit (MB) curves with a domestic (DOM) and a global (GLOB) perspective

National focus in monetizing benefits - Preliminary results for Nordic 2030



Emission scenario with Domestic socio-economic efficient emissions

Emission scenario with Global socio-economic efficient emissions

Global health effects ~5% higher in domestic scenario

Caveats: Nordic countries are sparsely populated and with few close neighbours
Nordic countries already have high degree of emission control

Preliminary results: do not cite or quote!!

Thank you for your attention

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