

# Stern initiatives for the Baltic Sea

## Status and proposed future work

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# What is a Stern initiative?

- **Inspiration: The Stern Review on the Economics of Climate Change (2007)**
- **A similar review for the Baltic Sea would give:**
  - **Costs and benefits over time of taking various degrees of action**
  - **→ An intertemporal cost-benefit analysis (also indicating what is lost if no action is taken)**
  - **Also conclusions on cost-effectiveness**
  - **Comparison of uncertain long-term benefits to more certain short-term costs**
  - **National and basin-wide results**

# Why is this interesting?

- **It would support the design of policies related to, e.g.:**
  - **Implementation of BSAP**
  - **Implementation of EU directives**
    - **Typically emphasizing the need for economic analysis**
  - **EU agricultural and fisheries policies**

# Two recent Stern-related studies on the Baltic Sea

- **Finland:**  
*The economics of the state of the Baltic Sea: Pre-study assessing the feasibility of a cost-benefit analysis of protecting the Baltic Sea ecosystem (Huhtala et al., 2009).*
- **Sweden:**  
*What's in the sea for me: Ecosystem services of the Baltic Sea and the Skagerrak (SEPA, 2009).*



## *Purpose:*

To assess the feasibility of an economic analysis on the protection of the Baltic Sea according to the Stern Review approach

## *Contents:*

- ❑ Ecosystem services: pressures and impacts
- ❑ Costs of abatement and protection measures of the Baltic Sea
- ❑ Monetary benefits from protecting the Baltic Sea – a meta-analysis
- ❑ Uncertainty and ecological-economic modelling

## **The economics of the state of the Baltic Sea**

Pre-study assessing the feasibility of a cost-benefit analysis of protecting the Baltic Sea ecosystem

Anni Huhtala, Heini Ahtiainen, Petri Ekholm,  
Vivi Fleming-Lehtinen, Jaakko Heikkilä, Anna-Stiina Heiskanen,  
Janne Helin, Inari Helle, Kari Hyytiäinen, Heidi Hällfors,  
Antti Iho, Kauko Koikkalainen, Sakari Kuikka, Maiju Lehtiniemi,  
Jaakko Mannio, Jukka Mehtonen, Antti Miettinen,  
Samu Mäntyniemi, Heikki Peltonen, Eija Pouta, Mari Pylkkö,  
Maija Salmiovirta, Matti Verta, Janne Vesterinen,  
Markku Viitasalo, Satu Viitasalo-Frösen, Sari Väisänen





## *Purpose:*

Based on existing information, to assess the economic consequences of taking action and not taking action for protecting/improving the marine environment

## *Seven subreports:*

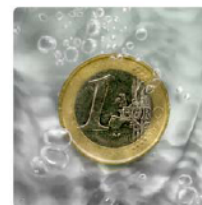
- Ecosystem services provided by the BS & S
- The economic value of ecosystem services provided by the BS & S
- Trends and scenarios exemplifying the future of the BS & S – ecological impacts of not taking action
- The costs of environmental improvements in the BS & S – a review of the literature
- Costs and benefits from nutrient reductions to the BS
- Tourism and recreation industries in the BS area – how are they affected by the state of the marine environment?
- Economic information regarding fisheries



## Vad kan havet ge oss?

Östersjöns och Västerhavets ekosystemtjänster

RAPPORT 5937 • FEBRUARI 2009



# Conclusions from both studies

- **Typically: Present knowledge is not enough for making a Stern Review for the Baltic Sea.**
- **Why? Some reasons related to the issue of eutrophication:**
  - **Insufficient knowledge of the links between eutrophication and ecosystem services**
  - **Insufficient knowledge of the benefits of various levels of ecosystem services**
  - **”Even information on the costs and effectiveness of alternative nutrient abatement activities in different countries and catchment areas of the Baltic Sea is limited.”**

# A proposal

- 3-year R&D program with a budget of €2 million/year
- Proposal work funded by Baltic Sea 2020
- Proposal ready in May 2008; last version Nov. 2008
- Baltic Sea 2020 felt that funding is mainly a governmental responsibility
- The November 2008 version was sent to the governments in the Baltic Sea countries, which were asked to consider it for co-funding

## Stockholm Resilience Centre

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SE-106 91 Stockholm, Sweden  
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A centre with:



## *BalticSTERN*

*Baltic Systems Tool for Ecological-economic evaluation:  
a Refined Nest-model*

*A proposal for an international research and development program*

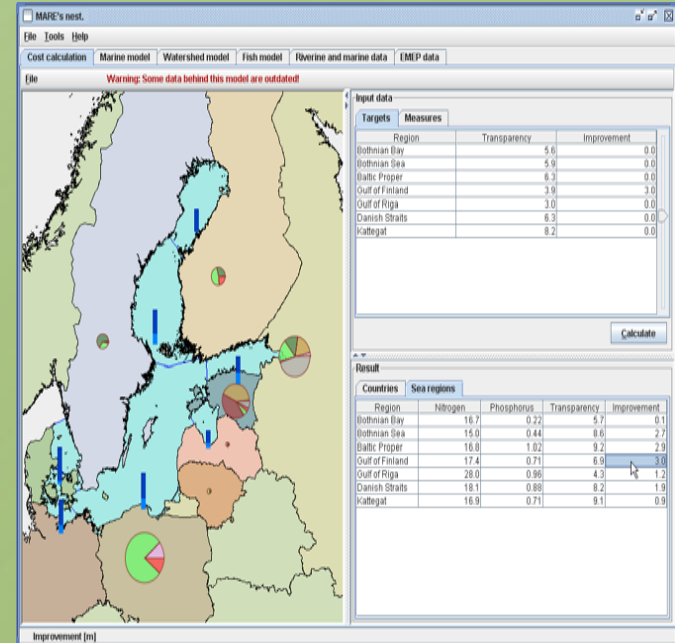


November 2008



# Some BalticSTERN features

- ❑ Develop the existing Nest model of BNI
- ❑ Compute cost-minimizing solutions to obtain nutrient reductions satisfactorily, building on detailed, national data
- ❑ Model the influence of market prices, CAP and choice of policy instruments
- ❑ Model, describe and assess benefits of an improved Baltic Sea
- ❑ Model food web ecology and fishery economics
- ❑ Measure costs of no-action
- ❑ A refined web-based decision-support system
- ❑ Multinational co-operation: Economists from all Baltic Sea countries are included in the proposal team



# Core activities (“work packages”)

## **WP5. Program synthesis, management and communication**

Leader: Tomasz Zylicz (Warsaw University, PL) – also Program Director

### **WP1. Environmental modelling**

Leader: Bo Riemann (Baltic Nest Institute, DK)

### **WP2. Food web ecology and fishery economics**

Leader: Olle Hjerne (Stockholm University, SE)

### **WP3. Costs of and instruments for taking action**

Leader: Berit Hasler (National Environmental Research Institute, DK)

### **WP4. Benefits of the results of taking action**

Leader: Tore Söderqvist (Enveco, Stockholm, SE)

# Conclusion

- **Is a "Baltic Sea Stern Review" needed? If so, BalticSTERN represents a way forward (if funding is possible).**
- **Some pros and cons:**
  - **Would take resources for other modelling initiatives? Trying different modelling approaches is an advantage.**
  - ± **Emphasis on eutrophication and biodiversity.**
  - + **Cooperation across all Baltic Sea countries → creates wide acceptance?**
  - + **A coherent intertemporal CBA approach, which is necessary for a Stern review – this might be the major difference from all important R&D carried out anyway (BONUS, BNI, etc., etc.).**

**The end.**  
**Thank you for your attention!**

