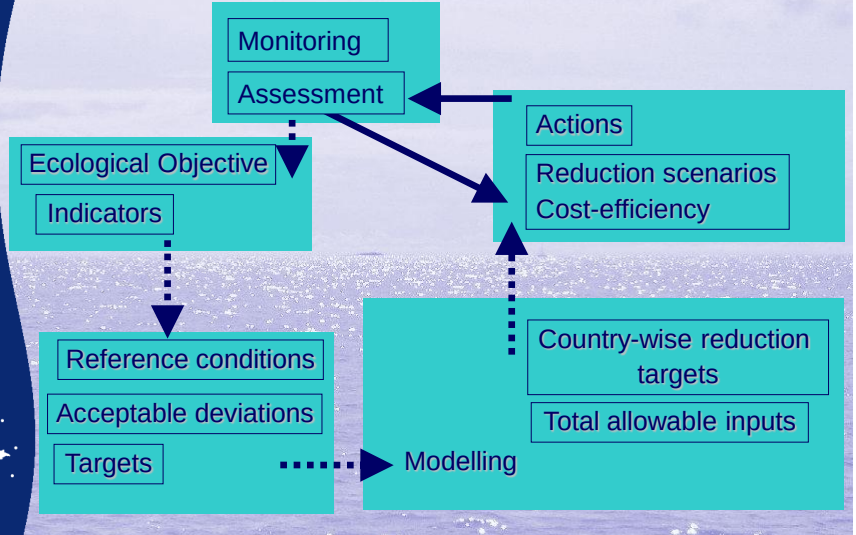
# Need for action to assess implementation of actions on nutrient loads reduction

**Proposal for a flagship project:**
**Collection and quality control of data on nutrient inputs**

Mr. Mikhail Durkin, HELCOM
First Steering Group Meeting of Priority area 1
*"To reduce nutrient inputs to the sea to acceptable levels"*
European Union Strategy for the Baltic Sea Region (EUSBSR)

26 April 2012, Warsaw, Poland

## HELCOM's management cycle for eutrophication



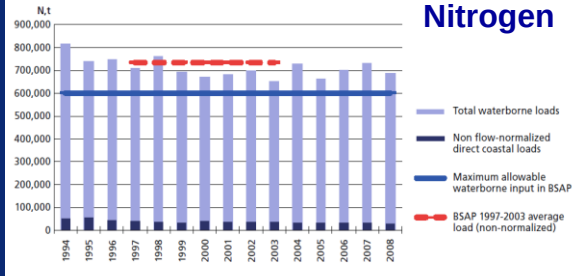

- New review is ongoing – TARGREV Project
  - More ecological objectives, review of reduction targets

# Country-wise annual reduction requirements

| | Phosphorus (tonnes) | Nitrogen (tonnes) |
|---|---|---|
| Denmark | 16 | 17,210 |
| Estonia | 220 | 900 |
| Finland | 150 | 1,200 |
| Germany | 240 | 5,620 |
| Latvia | 300 | 2,560 |
| Lithuania | 880 | 11,750 |
| Poland | 8,760 | 62,400 |
| Russia | 2,500 | 6,970 |
| Sweden | 290 | 20,780 |
| Transboundary pool | 1,660 | 3,780 |
| Total | 15,250 | 135,000 |

## PLC-5: Better knowledge, but data gaps and uncertainties

Total flow-normalized waterborne load of nitrogen (in tonnes) from all HELCOM countries to the Baltic Sea, 1994-2008

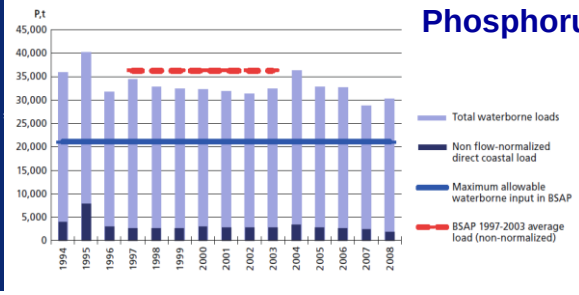



**Nitrogen**

Table 5-2a Trend analysis of flow-normalized annual riverine loads (in t a$^{-1}$) for nitrogen from 1994 to 2008 by country. Trends are only statistically significant when P≤0.05. Homogeneity of trends: P<0.001.

| Country | P-value | Estimated slope (tonnes per year) |
|---|---|---|
| Denmark | 0.029 | -1,521 |
| Estonia | 0.018 | 811 |
| Finland | 0.018 | 1,121 |
| Germany | 0.84 | -31.6 |
| Latvia | 0.17 | -1,774 |
| Lithuania | 1.00 | -112 |
| Poland | 0.23 | -2,880 |
| Russia | 0.55 | 148 |
| Sweden | 0.060 | -821 |
| Baltic Sea | 0.11 | -4,645 |

Total flow-normalized waterborne load of phosphorus (in tonnes) from all HELCOM countries to the Baltic Sea, 1994-2008




**Phosphorus**

Table 5-2c Trend analysis of flow-normalized annual riverine loads (in t a$^{-1}$) for phosphorus from 1994 to 2008 by country. Trends are only statistically significant when P≤0.05. Homogeneity of trends: P<0.001.

| Country | P-value | Estimated slope (tonnes per year) |
|---|---|---|
| Denmark | 0.029 | -23.0 |
| Estonia | 0.55 | 6.41 |
| Finland | 0.32 | -24.6 |
| Germany | 0.003 | -9.88 |
| Latvia | 0.002 | 101 |
| Lithuania | 0.84 | 22.5 |
| Poland | 0.023 | -168 |
| Russia | 0.69 | -36.2 |
| Sweden | 0.008 | -79.6 |
| Baltic Sea | 0.060 | -225 |

## BSAP Country-wise Maximum Allowable (MAI) vs Annual nutrient Input, 2008

| Inputs / Countries | Phosphorus (K tonnes) | | Nitrogen (K tonnes) | |
|---|---|---|---|---|
| | MAI P | $TP_{2008}$ | MAI N | $TN_{2008}$ |
| Denmark | 1,300 | 1,800 | 39,600 | 34,300 |
| Estonia | 1,000 | 1,400 | 29,900 | 45,200 |
| Finland | 3,000 | 3,400 | 65,300 | 74,000 |
| Germany | 700 | 500 | 14,800 | 21,300 |
| Latvia | 1,300 | 3,300 | 73,000 | 101,700 |
| Lithuania | 500 | 2,300 | 33,400 | 44,700 |
| Poland | 5,000 | 10,800 | 153,000 | 189,300 |
| Russia | 4,100 | 3,700 | 82,400 | 67,800 |
| Sweden | 3,400 | 3,300 | 100,700 | 110,400 |
| Transboundary (BY) | 1,700 | ? | 3,800 | ? |
| Total | 21,060 | 30,500 | 601,720 | 688,700 |

## Objective

- Support Strategic Action “Implement actions to reduce nutrients” of the EU Strategy for the Baltic Sea Region through **collection, quantification and quality control of data** on waterborne inputs of nutrients to the Baltic Sea

## Overall aims:

- Facilitate the **submission, correction and updating of data** on pollution load to the Baltic Sea
- Improve and harmonize the **quality and completeness of data**
- Provide open **access to up-to-date, quality checked** waterborne input **data**
- Support **collection and delivery of data** to monitor the progress of implementation of actions to reduce nutrient loads

## Activity will focus to:

- **Quantify and describe**
  - the **waterborne discharges** from point sources and losses from non-point pollution sources **within the catchment ar**ea
  - the **loads**, and their sources, **entering** the Baltic Sea via rivers, unmonitored and coastal areas as well as point sources discharging **directly** to the Baltic Sea;
- **Quantify**
  - **emission sources of airborne** nitrogen **deposition** inputs
  - **annual water- and airborne** inputs **and evaluate changes** in the normalized nutrient inputs to the Baltic Sea since 1994
- **Explain**
  - **changes vs** human activi-ties or natural **variations**;
  - **development of** nutrient waterborne and airborne **loads against BSAP** nutrient reduction **targets**
- **Evaluate**
  - **the quality of** reported **data and assessment** of sources.
- **Quantify**
  - the **uncertainty of** national **datasets**, total **load** to main Baltic Sea sub-basins, **on trends and reductions** during 1994 to 2014
- **Overall evaluate**
  - the **significance of various control measures** applied in the Baltic Sea catchment area **to reduce pollution** load from land-based sources

## Provisional timeline: Start 2012 – end 2017

| Year | Methodology and data collection | IT-support |
|---|---|---|
| **Step 1** | **Quality assurance and calculation of uncertainties in data** | |
| **2012** | Development of standardized methodology to calculate uncertainties on national datasets<br>Updating of the pollution load Guidelines | Development and implementation of a revised database model |
| **2013** | Finalisation of revision of the pollution load Guidelines | Development of web application for reporting and quality assurance of load data<br>Setting up a standardized quality assurance system for delivered data |
| **Step 2** | **Data collection, submission, quality assurance and compilation** | |
| **2014** | Monitoring and data collection by Contracting Parties | GIS-application of pollution load database<br>Remote access of third parties to the load database |
| **2015** | Reporting of national data using the new database web application. Quality checking, correction of data and compilation on data into the database. | |
| **Step 3** | **Data assessment and preparation of pollution load report** | |
| **2016** | Quality checking, correction of data and compilation on data into the database. Data assessment and preparation of the report | |
| **2017** | Finalization of the report | |

# Thank you!

**For more information please contact:**

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**National Implementation Programmes are available at:**
http://www.helcom.fi/BSAP/Implementation/en_GB/Implementation/