Document title	Draft policy message on progress towards NICs
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Submitted by	Executive Secretary
Reference	

Background

Eutrophication remains the key environmental problem of the Baltic Sea. Thus, reduction of nutrient input and achieving good environmental status of the sea in terms of eutrophication are the main challenges for the HELCOM community.

Assessment of the progress towards nutrient input ceilings is one of the key deliverables of the PLC-7 project. The assessment is delivered in two major products: the policy message and a supplementary paper. The latter presents a complete compilation of more than one hundred graphs and tables produced for the assessment and ensuring transparency of the assessment process. Both documents were presented and discussed at PRESSURE 12-2020 and the workshop preceding the meeting.

PRESSURE 12-2020 considered the draft policy message on progress towards NICs achieved by 2017 and endorsed it in general for submission to HOD 58-2020. Nonetheless, the group gave a number of recommendations on improvement of the document and agreed on the commenting round when countries provided additional comments on the matter. The recommendation and comments were taken into account in the updated draft of the document prepared by RedCore DG. RedCore DG was also of the opinion that, as a public document, the final version of policy message requires some improvement of design to make it more reader friendly. The group recommended that the Secretariat works on the layout after the message has been approved by HODs.

This document presents the latest draft of the policy message on the progress towards nutrient input ceilings.

Action requested

The Meeting is invited to consider and approve the daft for publication.

Progress towards nutrient input ceilings achieved by 2017

How much is left to reach the HELCOM nutrient input targets set for a clean Baltic Sea?

These are the key results of the assessment of progress towards the national targets for nitrogen input adopted by the 2013 Copenhagen HELCOM Ministerial Declaration.

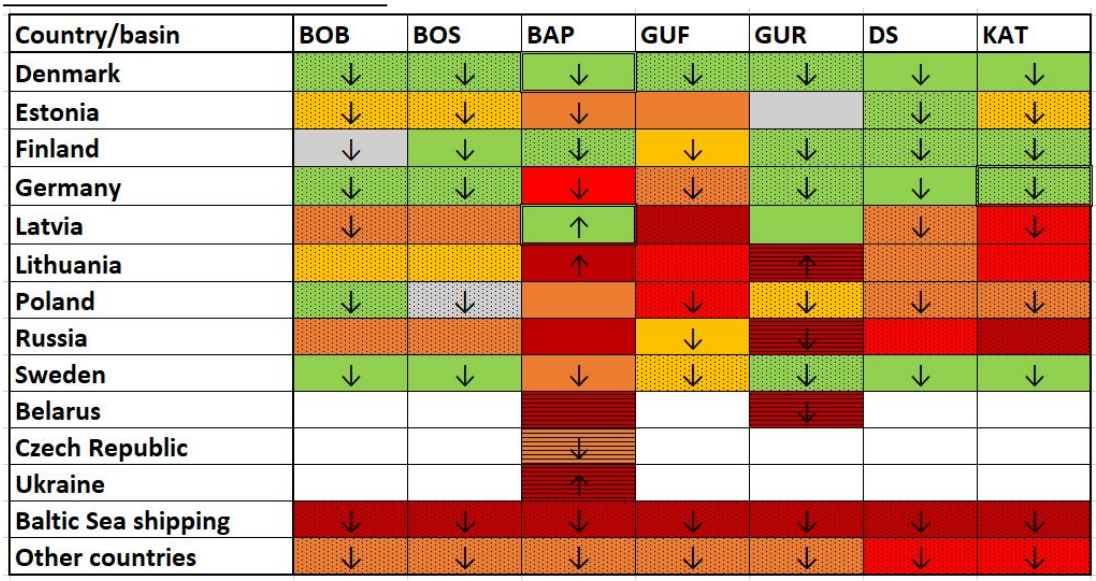
National targets for nitrogen and phosphorus inputs have been expressed as nutrient input ceilings for each country by sub-basin. [1] *Poland accepts the Polish Country Allocated Reduction Targets as indicative due to the ongoing national consultations. Ref.* *Ministerial Declaration 2013, page 6, footnote 2.*

Reductions still needed

Table 1. Total Nitrogen. Evaluation of input ceilings fulfilment.

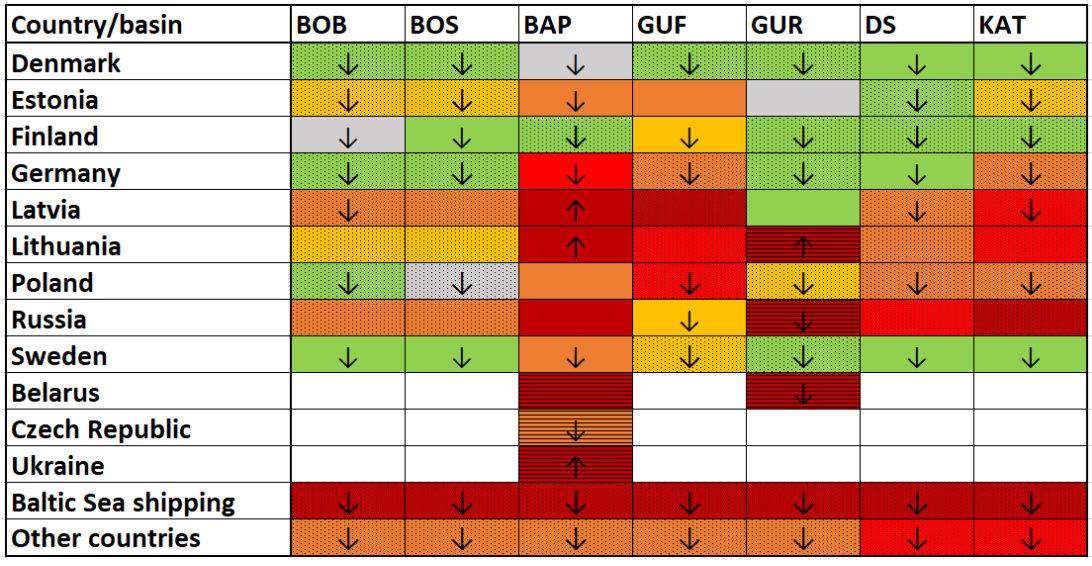
Based on statistically estimated inputs *(scroll down for full legend).*

A) Including reallocation of extra reduction.



Country/basin	BOB	BOS	BAP	GUF	GUR	DS	KAT
Denmark	↓	↓	↓	↓	↓	↓	↓
Estonia	↓	↓	↓			↓	↓
Finland	↓	↓	↓	↓	↓	↓	↓
Germany	↓	↓	↓	↓	↓	↓	↓
Latvia	↓		↑			↓	↓
Lithuania			↑		↑		
Poland	↓	↓		↓	↓	↓	↓
Russia				↓	↓		
Sweden	↓	↓	↓	↓	↓	↓	↓
Belarus					↓		
Czech Republic			↓				
Ukraine			↑				
Baltic Sea shipping	↓	↓	↓	↓	↓	↓	↓
Other countries	↓	↓	↓	↓	↓	↓	↓

B) Without reallocation of extra reduction.



Country/basin	BOB	BOS	BAP	GUF	GUR	DS	KAT
Denmark	↓	↓	↓	↓	↓	↓	↓
Estonia	↓	↓	↓			↓	↓
Finland	↓	↓	↓	↓	↓	↓	↓
Germany	↓	↓	↓	↓	↓	↓	↓
Latvia	↓		↑			↓	↓
Lithuania			↑		↑		
Poland	↓	↓		↓	↓	↓	↓
Russia				↓	↓		
Sweden	↓	↓	↓	↓	↓	↓	↓
Belarus					↓		
Czech Republic			↓				
Ukraine			↑				
Baltic Sea shipping	↓	↓	↓	↓	↓	↓	↓
Other countries	↓	↓	↓	↓	↓	↓	↓

Table 2. Total Phosphorus. Evaluation of input ceilings fulfilment

Based on statistically estimated inputs.

A) Including reallocation of extra reduction.

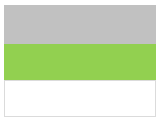
Country/basin	BOB	BOS	BAP	GUF	GUR	DS	KAT
Denmark			↓			↓	↓
Estonia				↓	↓		
Finland	↓			↓			
Germany						↓	
Latvia			↓				
Lithuania			↓		↓		
Poland			↓				
Russia				↓			
Sweden		↓	↓			↓	
Belarus			↓				
Czech Republic							
Ukraine							
Baltic Sea shipping							
Other countries							

B) Without reallocation of extra reduction.

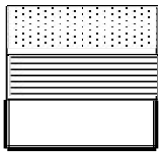
Country/basin	BOB	BOS	BAP	GUF	GUR	DS	KAT
Denmark			↓			↓	↓
Estonia				↓	↓		
Finland	↓			↓			
Germany						↓	
Latvia			↓				
Lithuania			↓		↓		
Poland			↓				
Russia				↓			
Sweden		↓	↓			↓	
Belarus			↓				
Czech Republic							
Ukraine							
Baltic Sea shipping							
Other countries							

Colour legend

Reduction still left to the target* is
less than 10%
between 10 and 30%
between 30% and 50%
50% or more



Within statistical certainty, the fulfilment of CART cannot be justified
CART is with 95 % statistical certainty fulfilled; inputs ceiling not exceeded
Classification is not relevant



only airborne inputs to the sub-basin

only transboundary waterborne inputs to the sub-basin

application of extra reduction achieved in neighbouring basins changed status

Arrows: statistically significant changes of nutrient inputs since the reference period (1997-2003), taking into account 95% confidence interval for both latest inputs and reference values.

↓ significant decrease

↑ significant increase

* Yellow, orange and red shades: input ceiling is exceeded. The legend illustrates the percentage which reduction left to the target constitutes in the corresponding input ceiling value.

“Other countries” includes sources for atmospheric nitrogen deposition as the 20 EU countries not being HELCOM Contracting Parties, countries outside EU including Belarus, Ukraine, North Sea shipping etc.

For reviewing the input data used to evaluate fulfilment of CART and the amount of remaining reductions, please see the data page.

Key messages

Based on estimation of normalized inputs of nitrogen and phosphorus from 1995 to 2017 (Tables 1 and 2) the following conclusion can be made with high statistical certainty:

Progress towards nitrogen input ceilings

Fulfilment of input ceilings:

- Denmark is the only country that fulfilled nitrogen ceilings for all HELCOM sub-basins except the Baltic Proper, where remaining reduction is less than 3% of the input ceilings for this sub-basin. Reallocation of extra reduction achieved in the Danish Straights, Gulf of Finland and Gulf of Riga to the Baltic Proper allows Denmark to achieve the target set for national input to the Baltic Proper.
- Estonia achieved national input ceiling for Danish Straights. The highest remaining reductions for the Baltic Proper and the Gulf of Finland constitute 30% and 26% respectively. Missing reduction of inputs to other sub-basins is less than 10% or within statistical uncertainty.
- Finland achieved nitrogen input ceilings for most sub-basins. Finland has not achieved the reduction target for inputs to the Gulf of Finland and Bothnian Bay. Remaining reduction for the Gulf of Finland is 7% and for the Bothnian Bay is within statistical uncertainty. Reallocation of the extra reduction from Bothnian Sea to Bothnian Bay reduces the missing reduction to 0.05%, which remains within statistical uncertainty.
- Germany has not achieved nutrient input ceilings for input of nitrogen to the Baltic Proper and the Gulf of Finland, missing 39% and 18% respectively. Reduction requirements for Kattegat were achieved due to reallocation of extra reduction from Danish Straights. Reallocation of remaining extra reductions from Danish Straights and the Gulf of Riga to Baltic Proper does not change the picture.
- Latvia achieved reduction the requirement for the Gulf of Riga. The input ceiling for Baltic Proper was met through reallocation of extra reduction from the Gulf of Riga.
- Lithuania and Russia exceeded their ceilings to all sub-basins, however, remaining reduction for Russia to meet the ceiling for the Gulf of Finland is about 5% and for Lithuania to the Bothnian Bay and Bothnian Sea are slightly more than 5%.
- Poland achieved the input ceiling for the Bothnian Bay and exceeded the input ceiling for the Bothnian Sea within statistical uncertainty. Input ceilings for other sub-basins are exceeded, though the missing reduction for the input to Danish Straits is only about 4 %.
- Sweden achieved nitrogen input ceilings for most of the HELCOM basins except for the Baltic Proper and the Gulf of Finland. The remaining reduction for the later constitutes only 2% while the reduction requirement for the Baltic Proper remains still 24%. The reallocation of extra reduction achieved in Danish Straights and the Gulf of Riga to Baltic Proper does not significantly change the remaining reduction requirements.
- In general, the Baltic Proper and the Gulf of Finland have the highest remaining reductions to achieve ceilings for most countries.
- Atmospheric nitrogen inputs from Baltic Sea shipping and non-HELCOM countries exceeded their target values to all sub-basins. Input from Baltic Sea shipping is approx. 500% higher than the input ceilings.
- Waterborne transboundary inputs from Belarus, Czech Republic and Ukraine exceed corresponding input ceilings.

Changes of inputs since reference period:

- Denmark, Finland, Germany and Sweden reduced their total nitrogen inputs to all HELCOM sub-basins.
- Latvia increased its input to Baltic Proper and Lithuania to Baltic Proper and the Gulf of Riga.
- Inputs of nitrogen to all other sub-basins by Estonia, Latvia, Lithuania, Poland and Russia are either reduced or do not demonstrate statistically significant trends.
- Ukraine is the only non-HELCOM country which increased nitrogen input to Baltic Proper.
- Baltic Sea shipping and non-HELCOM countries reduced airborne nitrogen inputs to all

HELCOM sub-basins.

Progress towards phosphorus input targets

Fulfilment of input ceilings:

- None of the HELCOM countries fulfilled the input ceiling for phosphorus to all HELCOM sub-basins without reallocation of extra reduction.
- All HELCOM and non-HELCOM countries exceeded input ceilings for the Baltic Proper.
- Denmark achieved reduction requirements for the Baltic Proper by applying the extra reduction from Danish Straights.
- Estonia and Finland exceeded input ceilings to the Gulf of Finland. Fulfilment of the input ceiling to the Gulf of Finland by Russia is within statistical uncertainty due to high variability of the assessment data.
- Finland achieved the input ceiling for the Bothnian Bay.
- Latvia and Poland exceed ceilings for sub-basins to which they have inputs. The same concerns the non-HELCOM countries Czech Republic and Ukraine.
- Lithuania fulfils input ceilings for the Gulf of Riga but exceeds it for the Baltic Proper. Reallocation of extra reduction achieved by Lithuania in the Gulf of Riga allows reducing remaining reduction to the Baltic Proper to less the 30%.
- Sweden achieved input ceilings for the Bothnian Sea and Danish Straights. The reduction requirement for the Bothnian Bay was fulfilled through reallocation of extra reduction of input to Bothnian Sea. Achieving of input ceiling to Kattegat is within statistical uncertainty also after reallocation of extra reduction in Danish Straits.
- All countries fulfilled national ceilings for total phosphorus inputs to Danish Straits and Bothnian Bay accounting reallocation of extra reduction.

Changes of inputs since reference period:

- All countries reduced their total phosphorus inputs to the Gulf of Finland and Danish Straits.
- Most of contributors except Estonia, Germany, Russia, Czech Republic and Ukraine also reduced their total phosphorus inputs to Baltic Proper
- No counties increased input of phosphorus since reference period. All demonstrate either downward trends or no statistically significant input trend was observed.
- Denmark, Lithuania and Poland reduced total phosphorus inputs to the sub-basins which they contribute to.

Revision of time series.

The time series (1995-2017) of nitrogen and phosphorus input have been reviewed and for some countries considerable re-reporting has been performed since the last assessment (2017). Further, EMEP has recalculated the annual atmospheric nitrogen deposition on sub-basins, which led to a remarkably higher deposition compared to former assessments. This has resulted in an overall increase of estimated inputs to the Baltic Sea sub-basins particularly for total nitrogen also in the reference period. One of the consequences is that the commitment to reaching good environmental status of the Baltic Sea in terms of input of nutrients, particularly for total nitrogen, requires a larger reduction than the CARTs agreed on in Ministerial Declaration in 2013.

Nutrient Input Ceilings (NICs) agreed by the 2013 HELCOM Ministerial Declaration were used for the current assessment. Pursuant to the BSAP provision which commits reviewing and revision of maximum allowable inputs and nutrient reduction requirements using harmonized approach and updated information, the nutrient input ceilings are currently being revised. New data on airborne nitrogen deposition, transboundary loads and retentions as well as updates of national data on nutrient inputs in the past years together with revised estimates of expected reduction in atmospheric nitrogen deposition from non-HELCOM countries and shipping (HELCOM ENIRED II project[1]) are utilized in the revision. Maximum allowable inputs remain unchanged as they agreed by 2013 HELCOM Ministerial Declaration.

[1] ENIREDII estimates expected reduction of total nitrogen deposition in 2030 due to implementation of the EU NEC Directive, Goteborg Protocol and the Nitrogen Emission Control Area in the Baltic Sea.

The same agreed allocation principles and methodology are utilized for the NICs' update as for calculation of NICs agreed in 2013.

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