Outlining of the CART policy messages. What are the main messages to present, and how can we present the main results for policymakers unambiguously?

Dmitry Frank-Kamenetsky

HELCOM

Ministerial Declaration 2013

Maximum Allowable Inputs and needed reductions
for nitrogen (N) and phosphorus (P), in tonnes

Baltic Sea Sub-basin	**Maximum Allowable Inputs**		**Reference inputs 1997-2003**		**Needed reductions**	
	TN, tonnes	*TP, tonnes*	*TN, tonnes*	*TP, tonnes*	*TN, tonnes*	*TP, tonnes*
Kattegat	74,000	1,687	78,761	1,687	4,761	0
Danish Straits	65,998	1,601	65,998	1,601	0	0
Baltic Proper	325,000	7,360	423,921	18,320	98,921	10,960
Bothnian Sea	79,372	2,773	79,372	2,773	0	0
Bothnian Bay	57,622	2,675	57,622	2,675	0	0
Gulf of Riga	88,417	2,020	88,417	2,328	0	308
Gulf of Finland	101,800	3,600	116,252	7,509	14,452	3,909
Baltic Sea	**792,209**	**21,716**	**910,344**	**36,894**	**118,134**	**15,178**

Ministerial Declaration 2013

Country Allocated Reduction Targets (CARTs)
for pollution from both land and air, in tonnes

	Nitrogen	**Phosphorus**
Denmark	2,890	38
Estonia	1,800	320
Finland	2,430 +600*	330 +26*
Germany	7,170 +500*	110 +60*
Latvia	1,670	220
Lithuania	8,970	1,470
Poland[1]	43,610	7,480
Russia	10,380*	3,790*
Sweden	9,240	530

Nutrient input ceilings for all basins and countries

The allowable amount of nitrogen and phosphorus input per country and sub-basin. It is calculated by subtracting the CART from the input of nitrogen and phosphorus during the reference period of the BSAP (1997-2003).

Summary report on the development of revised Maximum Allowable Inputs (MAI) and updated Country Allocated Reduction Targets (CART) of the Baltic Sea Action Plan.

The sum of nutrient input ceilings for a sub-basin is equal to the Maximum Allowable Input for that sub-basin.

A preliminary assessment for following-up on progress towards the country-wise allocated reduction targets on nutrients (CART).

The first CART assessment 2015 covered period 1995-2012

Total Nitrogen.

Country/basin	Bothnian Bay	Bothnian Sea	Baltic Proper	Gulf of Finland	Gulf of Riga	Danish Straits	Kattegat
Denmark	↓	↓	↓	↓	↓	↓	↓
Estonia	↓	↓	↓			↓	↓
Finland	↑		↓		↓	↓	↓
Germany	↓	↓	↓	↓	↓	↓	↓
Latvia							
Lithuania							
Poland	↓	↓	↓	↓	↓	↓	↓
Russia							
Sweden	↓	↓	↓	↓	↓	↓	↓
Belarus			↓				
Czech Republic			↓				
Ukraine			↓				
Baltic Sea shipping	↑	↑	↑	↑	↑	↑	↑
Other countries	↓	↓	↓	↓	↓	↓	↓
MAI		↓	↓			↓	↓

Total Phosphorus.

Country/basin	Bothnian Bay	Bothnian Sea	Baltic Proper	Gulf of Finland	Gulf of Riga	Danish Straits	Kattegat
Denmark			↓			↓	↓
Estonia					↓		
Finland		↓					
Germany						↓	
Latvia			↑		↑		
Lithuania			↓		↑		
Poland			↓				
Russia					↑		
Sweden		↓	↓			↓	
Belarus			↓		↑		
Czech Republic			↓				
Ukraine			↓				
Baltic Sea shipping							
Other countries							
MAI		↓	↓			↓	↓

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 fulfillment of CART cannot be justified
- CART is with 95 % statistical certainty fulfilled; inputs ceiling not exceeded
- Classification is not relevant

PRESSURE 4-2016 agreed that the main questions to answer in the policy messages are:

- Whether the reduction targets are achieved?
- What are the distances from the targets?
- What is the trend and changes in nutrient inputs?

And agreed that the HELCOM policy message should be based on unified agreed methodological approach.

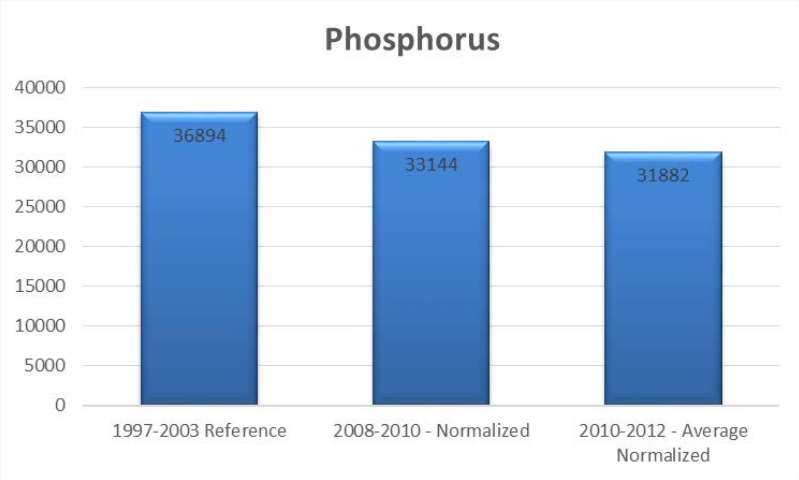
PRESSURE 5-2016 discussed the policy message:

- Denmark:
  - in favour of using a 5-year averaging period for the assessment;
  - suggested to avoid using colours to indicate progress but only numbers;
  - include economic aspects of the undertaken measures
- Sweden
  - CART assessment should be based on 3-year average, when uncertainty can be calculated by trend analyses.
  - doubt regarding using break points in the trend analyses, as three years is a too short period, as 25 yrs is too short;
- Russia:
  - to include an estimation of a period when the CART could be achieved by the country;
- Germany:
  - include the data on missing reduction;
  - distinguish of air- and waterborne input reduction;
  - suggests to use 5-year average period but understands that other compromise approaches are possible;
  - supports the further use of break points in trend analysis, which might enable more accurate future projection;
- Finland does not object using 3-year assessment period but would be in favour of 5-year period;
- Poland supported the use of 3-year period but that is not the final position;

Whether the reduction targets is achieved?

Accomplishment of the Ministerial Commitment

Progress toward national reduction targets as agreed in MD 2013



Progress towards input ceilings

Country/basin	Bothnian Bay	Bothnian Sea	Baltic Proper	Gulf of Finland	Gulf of Riga	Danish Straits	Kattegat
Denmark			↓			↓	↓
Estonia					↓		
Finland		↓					
Germany						↓	
Latvia			↑		↑		
Lithuania			↓		↑		
Poland			↓				
Russia					↑		
Sweden		↓	↓			↓	
Belarus			↓		↑		
Czech Republic			↓				
Ukraine			↓				
Baltic Sea shipping							
Other countries							
MAI		↓	↓			↓	↓

How to estimate achieved progress?

- estimate inputs from the most recent year using a statistical method based on long-term trend;
- average of the last 3 years normalized annual inputs;
- average of the last 5 years normalized annual inputs.

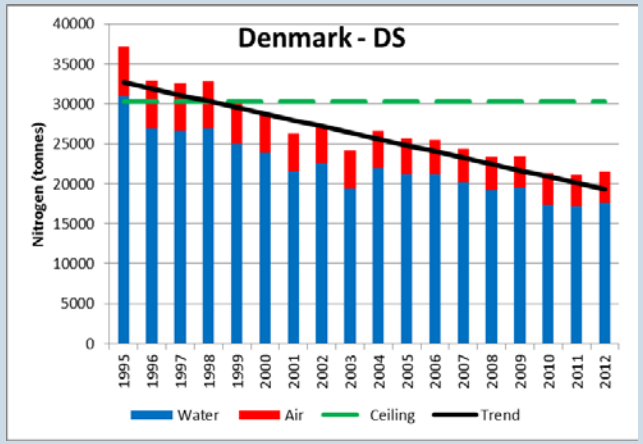
How the progress in reducing inputs can be evaluated?

- quantifying a percentage of required reduction or percentage of missing reduction to fulfil CART;
- quantifying the missing reduction in tons;
- estimate years needed to fulfil CART progressing with the same pace.

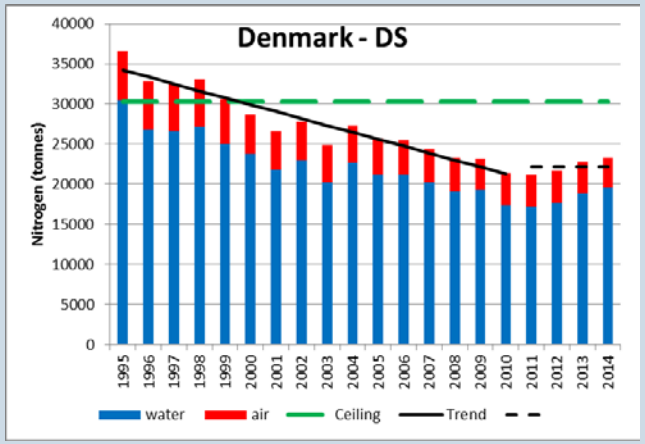
What is the distance from the target?

What is the development trends in nutrient inputs?

Progress since 1995?



without breakpoints



with breakpoints

Progress since reference period?

Progress since previous assessment?

What kind of complementary information could be included into the key message?