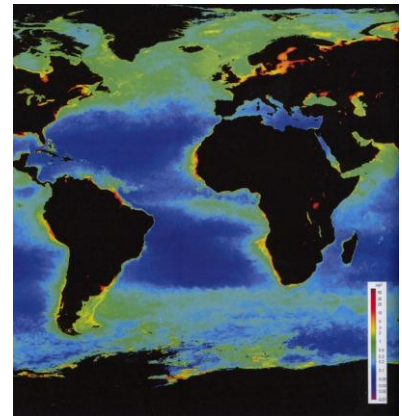
EU CAP agricultural subsidies – crucial to reach Nutrient reduction goals - agreed HELCOM decisions

Farmers to co-operate and apply Best Agricultural Practices to reduce Nutrient run-off

CCB project activities related to Sustainable farming in BSR

11 November 2013, Vilnius, Lithuania

Gunnar Norén
CCB Executive secretary



AGRICULTURE and EUTROPHICATION

Baltic agriculture – contribute with approx 50 % of the nutrient load (Nitrogen & Phosphorus) to the Baltic Sea

Main instrument to control Nutrient run-off from Agriculture

- **EU agriculture subsidies 2014-2020 must contribute to the solution of the Baltic Sea Eutrophication problem**
- **Both Pillar1 –Direct support and Pillar 2 –Rural Development Programmes, should contribute**

Agriculture actions that must be implemented

- **Cross-compliance rules with EU environmental aquis must be applied**
- **Water Framework Directive (WFD) will secure Good Ecological Water Status**
- **Nitrate Directive to control eutrophication of surface- and ground-waters**

- **Marine Strategy Framework Directive (MSFD) shall provide Good Environmnetal Status to Baltic Sea 2020**

*** HELCOM Baltic Sea Action Plan(BSAP) will provide Healthy Baltic Sea and GES by 2021**

***HELCOM Ministerial meeting 3 Oct 2013 agreed to:**
-Introduce nutrient accounting and nutrient-balanced fertilization practices on farmland, at latest 2018
-introduce national tolerable levels for nutrient surplus (kg / ha, year)

Farmers Actions & Co-operation

***Farmers organisation require their Ministry of Agri provide sufficient financial subsidies so all farmers can apply Best Practice to reduce nutrient run-off**

- **Baltic Farmer organisation should co-operate with farms in Germany and Denmark, and apply Best Practices for Nutrient-balanced fertilization**
- **--Mandatory nutrient accounting/ Nutrient balanced calculation practices**
- **--Apply Maximum tolerable nutrient surplus level /ha,y**

Various signs show that Baltic Agriculture ministries – not willing to fulfil EU environmental aquis

- Rural Development Programmes (RDP) has been the most important financial instrument, e.g. for Agri-Environmental schemes

- Sweden has decided that CAP-subsidies 2014-2015 Will not be used for measures related to:
  -Nutrient accounting, Nutrient-balanced fertilization practices
  -Buffer stripes

- Poland is planning to transfer maximum possible financing from Pillar 2 to Pillar 1

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Experiences of agricultural projects on organic farming and Industrial animal farms

- Support for Promotion/development of Organic farming in Poland (as Organic farming has 50 % of the nutrient surplus/ha, compared to conventional farming)
  -Center for Promotion of Organic farming in Poland
  -Trainings of farmers & advisers
  -Publishing of Information/education materials for farmers

- Project on inventory and practices for Industrial Animal Farms in Baltic Sea Region countries in 2013

  Will provide advice for Best Practices

  Presented at a Conference in Warzaw, December 2013

HELCOM Baltic Sea Action Plan (BSAP) 2007

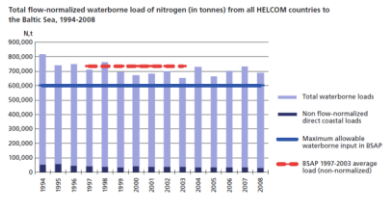
- Quite strong goals and actions to control eutrophication decided on

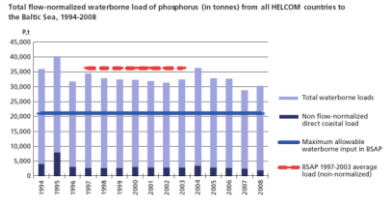
*Preliminary Maximum nutrient input to Baltic Sea (calculated via MARE NEST model – using water visibility goals) for 7 sub-basins

21 000 ton P / year
600 000 ton N / year

Inputs 1997-2003 calculated
36 000 ton P / year
736 000 ton N / year

Needed reductions
15 000 ton P / year
135 000 ton P / year





HELCOM Baltic Sea Action Plan (BSAP)

- Maximum allowable nutrient input, take actions not later than 2016

Aiming at reaching good ecological and environmental status by 2021

HELCOM work on BSAP actions to reach Eutrophication goals ,
Combined with
Regional implementation of the MSFD in Baltic Sea Region
(Baltic Sea Region has Russia, outside EU)

HELCOM TARGREV project – review of HELCOM's Eutrophication goals

Scientific project , strengthen basis of ecological targets for eutrophication

HELCOM defined 5 ecological objectives :

-nutrient conc. close to natural levels
-clear water (visibility)
-Natural level of algal blooms
-natural distribution of plants and animals
-natural oxygen levels

These objectives transformed into ***quantitative values*** (preliminary ecological targets)

If necessary propose revision of existing preliminary ecological targets

HELCOM TARGREV project – review of HELCOM's Eutrophication goals

•Eutrophication targets proposed , used for:

-Reviewing the maximum allowable nutrient input of BSAP

HELCOM ministerial meeting Sept/Oct 2013 – review/revise nutrient input & monitor national implementation of BSAP

-HELCOM assessment and core indicators for eutrophication to reflect boundaries of Good Environmental Status for Eutrophication

HELCOM TARGREV project – review of HELCOM's Eutrophication goals

•HELCOM BSAP eutrophication targets also used for Implementation of MSFD in Baltic Sea

- Fulfil tasks related to setting targets for Good Environmental Status on Eutrophication (descriptor 5)
- **HELCOM establish a "Eco-system management WG"**

Expected outcome of HELCOM TARGREV project

•selection of indicators with quantitative targets (characterise objectives of eutrophication)

•historical values for selected indicators

•predict values for selected indicators given scenarios of nutrient inputs

•identification of critical values where drastic changes in ecological objectives may occur

•recommendations for setting target values for the selected indicators

Trend analyses of 5 Indicators describing 5 ecological objectives for eutrophication

• nutrient concentrations

• chlorophyll a (algal blooms)

•water transparency (clear water)

•oxygen (natural oxygen levels)

•benthic invertebrates (natural distr. of plants & animals)

Trend analyses of 5 Indicators describing 5 ecological objectives for eutrophication

Decline in ecosystem health in 3 phases (not continous)

- **Early pre-eutrophication phase, before 1940**
- **Eutrophication phase 1940-1980**
- **Post-eutrophication phase after 1980**

Time series of Secchi depth and oxygen conc. going back to early 20th century

Secchi depth affected by coloured dissolved organic material,CDOM
No long term trends
Some effect for Gulf of Finland + Bothnian Bay(approx 0,5m)

TARGREV scientific conclusions

• Before 1940, analyses (Secchi depth & oxygen) suggest:

-Baltic Sea relatively unaffected by human actvities

-lack of oxygen in Baltic proper. Baltic Sea capable of processing the relatively low nutrient inputs during this period

-This period used defining Secchi depth & oxygen in a relatively unaffected state

-Define boundaries (95 % confidence) for natural variations within this period

TARGREV scientific conclusions

•-Yearly mean values
Secchi depth < 5-percentiles below
Oxygen debt > 95-percentiles exceeding
of these variables in the pre-eutrophication phase

represent

"significant deviation from a relatively unaffected situation"

These percentiles proposed as Targets for BSAP Eutro

Such values represent
Boundry between a "perceived unaffected" and "affected" status

Proposed targets for Secchi depth

Northern Kattegat	**7,52 m**
The Sound	**6,33 m**
Bornholm basin	**8,05 m**
Baltic Proper	**8.78 m**
Gulf of Riga	**3.90 m**
Gulf of Finland	**5.41 m**

Proposed targets for oxygen conc.

Bornholm basin	4,53 mg/l
Baltic proper	3,00 mg/l
Gulf of Finland	3,00 mg/l

How to decide on allowable nutrient pollution load out from Eutrophication objectives

• ***HELCOM LOAD project***

•***Will calculate, with models, what nutrient reduction is needed in different sub-basins of the Baltic Sea***

Baltic Region MS will match
HELCOM BSAP eutrophication goals
In
Compliance with MSFD GES for eutrophication

Oxygen concentration targets

Temperature effect on oxygen solubility

Oxygen solubility calculate from
- Recent temperatures
- Temperatures at beginning of 20th century

- Increased temp. last 100 years – climate change

Giving reduced oxygen supply to bottom waters

-Tightening targets ? – nutrient inputs further reduced

Proposed supplementary targets

(to Secchi depth and Oxygen)

Tot-P
Tot-N
Chl a

Grouping of indicator targets for 5 ecological objectives

1) directly evidence-based targets (water transparency; oxygen)
2) Indirectly and preliminary established targets for nutrients and algal blooms
3) Pre-mature targets for benthic community

Hierarchy of indicator targets applied such that

1) Directly and evidence-based targets must be fulfilled
2) Indirectly and preliminary established targets should not be compromised

GES status for Eutrophication

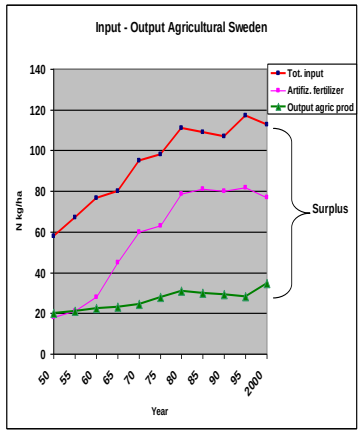
- Target and Indicators must secure

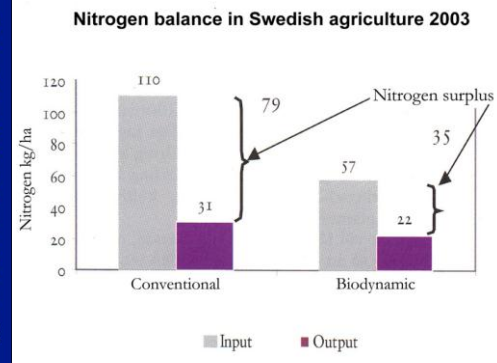
A state relatively unaffected by Eutrophication

With use of long historical periods of monitoring, eutrophication targets can be set

The selected indicator targets is crucial !! (shall reflect a state before the sea was strongly effected by nutrient pollution)

If HELCOM countries follow the advice of TARGREV proj, the reference level will be 1940-ies.





Nitrate Vulnerable Zone designation EU 25 (year 2006) and area requiring designation according to Commission assessment