

A Greener Agriculture for a Bluer Baltic Sea

Helsinki 27.8.2013

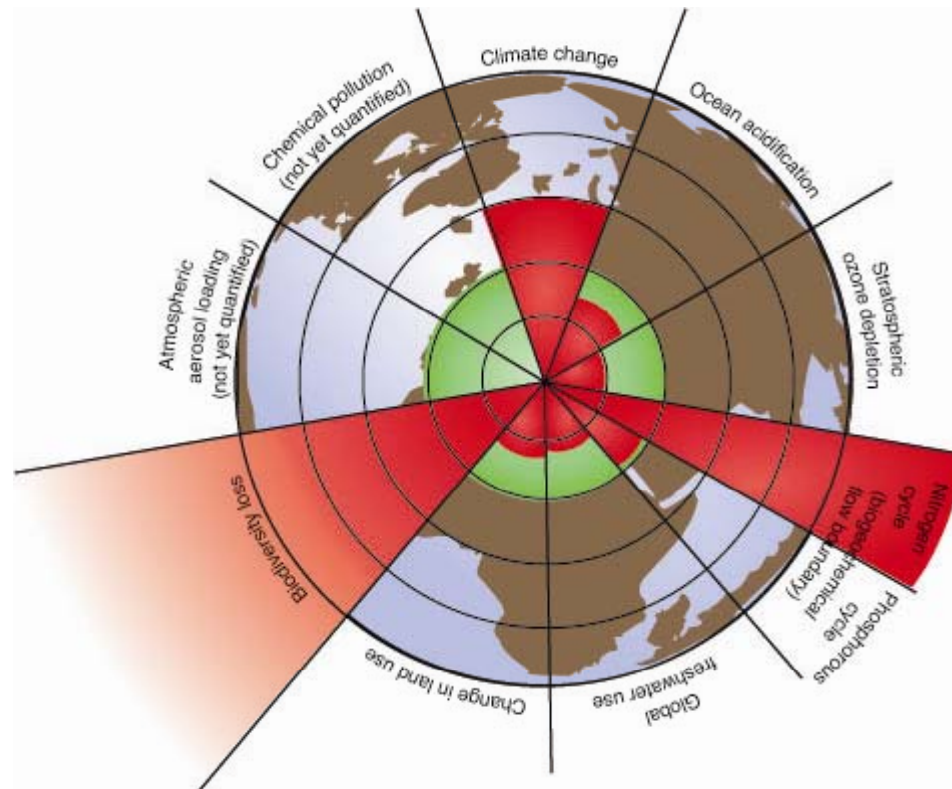
From words to actions – catalysing change

Ilkka Herlin, Chairman of the Board, BSAG



Planetary boundaries

Most critical transgression: nitrogen and phosphorus inputs to the biosphere and oceans



Source: Stockholm Resilience Center. J. Rockström & al. 2009



Status of the seas

- We are used to say that the Baltic Sea is the most polluted sea of the world.
- However, there are other applicants too:
 - The Yellow Sea. Yearly occurring algal blooming can cover even 30.000 square meters.
 - The Gulf of Mexico. The dead sea bottom is the size of New Jersey.



Black Sea

- The Black Sea suffered dead zones reaching 40.000 square meters.
- After the collapse of the communist system, the usage of artificial fertilizers dropped and raising large-scale livestock was reduced radically in the catchment area.
- Result: dead zones diminished and almost disappeared in five years.

Source: Ph.D. Laurence Mee, Marine Institute, University of Plymouth, UK



Photo: SeaWiFS Project, NASA/Goddard Space Flight Center, and ORBIMAGE



Baltic Sea

Baltic Sea suffers from eutrophication and dead zones.

Radical decrease of nutrient runoff can revive the sea as it has happened in the Black Sea.

BSAG vision: Recycling of nutrients is the sustainable and the only economically viable way to radically reduce the flow of nutrients to the sea.



Photo: ®ESA



What is BSAG?

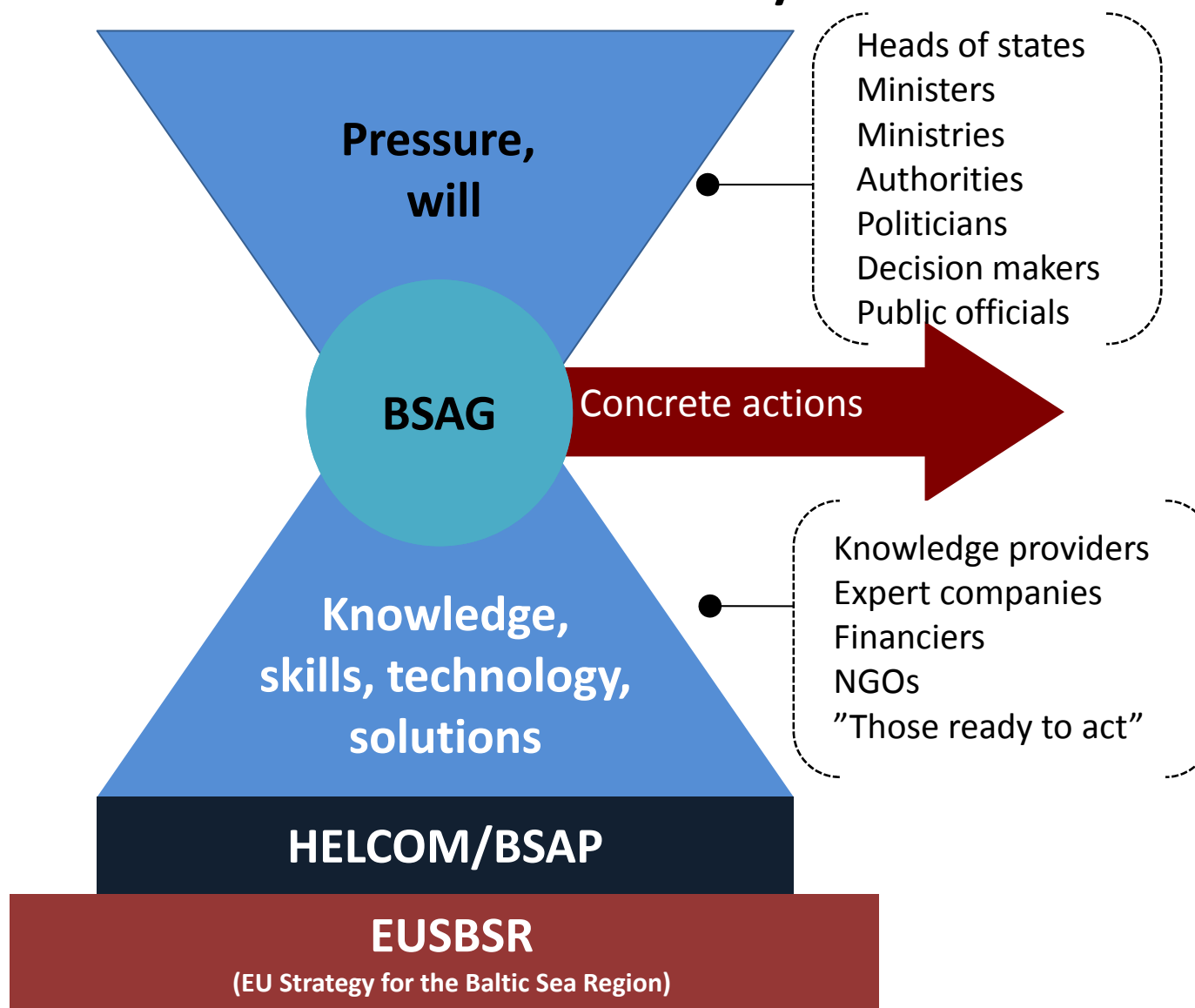
Baltic Sea Action Group, BSAG, is a Finnish independent foundation. It enables environmental projects within the whole Baltic Sea.

Social innovation:

- To find the best and the most efficient ways of doing things
- To engage those, who can solve problems and bring solutions
- To combine public and private resources
- To prompt these actors to make a **commitment** for the Baltic Sea



BSAG acts as a catalyst





Commitments

Commitments are:

- Issue, matter, business that can have direct or indirect impact on the recovery of the Baltic Sea

Direct:

Yara International Asa:

- Lending Yara N-Sensor equipment for Baltic Deal demofarms

Indirect:

MTV3: Public Awareness

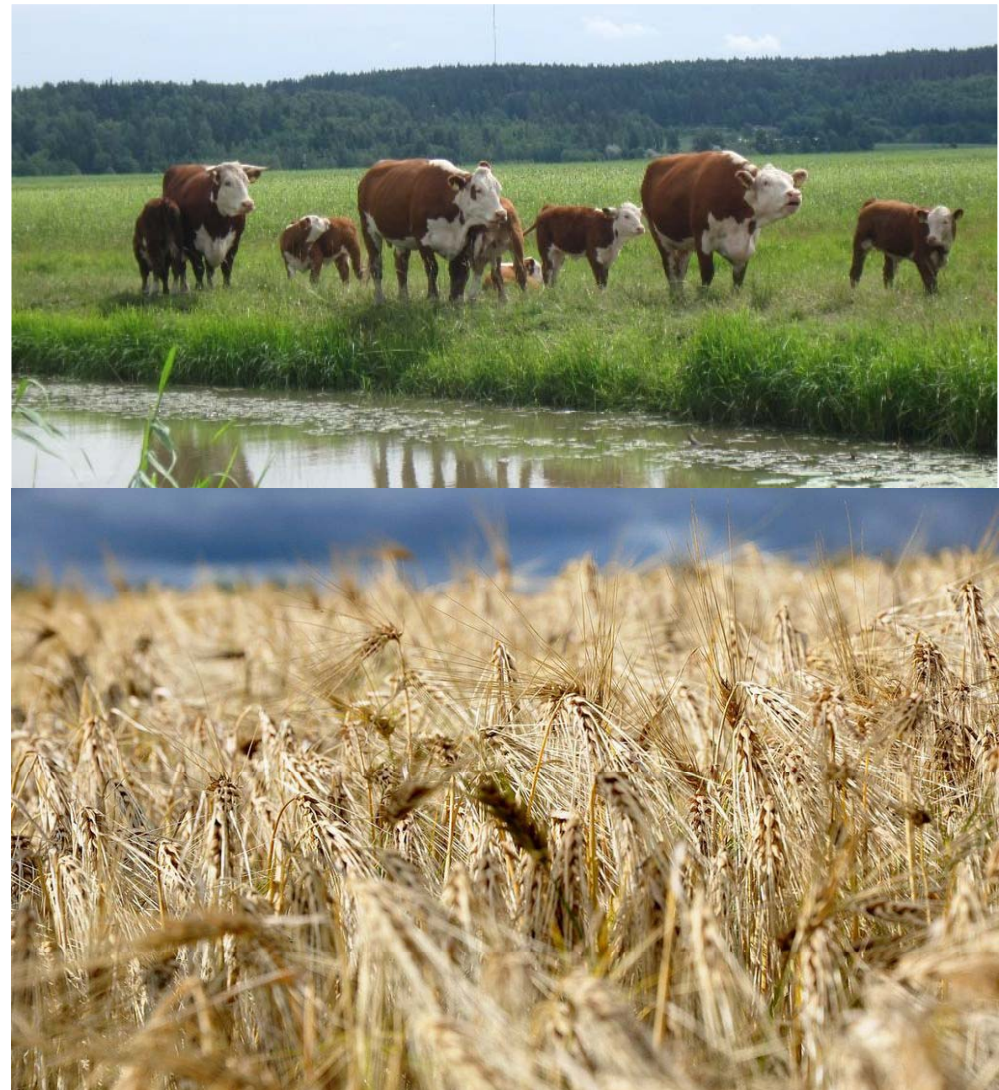
- 10 episode series in national TV about the status of the Baltic Sea





Examples of commitments

- Zemnieku Saeima, Latvia: Responsible farming promotion for Baltic Sea Protection
- Fazer Oyj: Development of sustainable grain sourcing. A responsibility program for more environmentally friendly operations.
- Raisio: Closed Circuit Cultivation – an environmental tool for farmers.
- Biovakka Suomi Oyj: Nutrient recovery from the liquid fraction from anaerobic digestion.





The first BSAS in 2010

Examples of State Commitments

1. Finland: Plan to become a model region in the recycling of nutrients. Faster improvement of the state of the Archipelago Sea, last remaining HELCOM hot-spot in Finland.
2. Russia: Construction of a new waste water plant in Kaliningrad; P will be reduced with 350 tons/year and N with 1200 tons/year as from the fall of 2012. New waste water plants in St Petersburg have reduced P with 1000 tons/year and N with 1700 tons/year.
3. Sweden: Increase of the contribution to the NIB/NEFCO Technical Assistance Fund from 4.5 to 9 million euros, available to countries in the region to speed up the activities of the Baltic Sea Action Plan.



BSAS in St. Petersburg 2013

Accomplishments

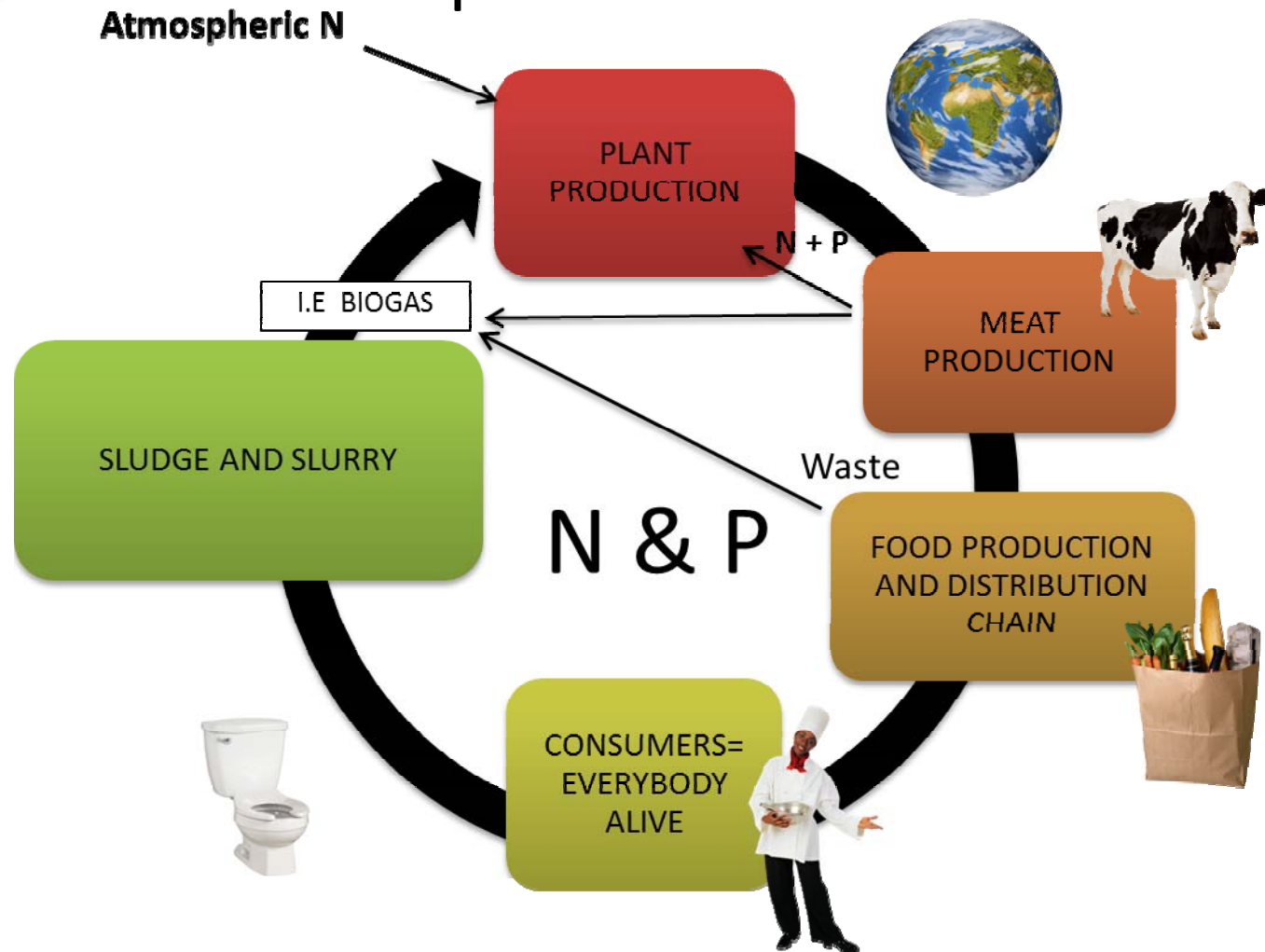
- PM Medvedev promised that Russian Federation will invest in the treatment of hazardous waste in Krasny bor landfill.
- Vodokanal of St.Petersburg made a commitment dealing with water treatment solutions in Leningrad oblast and Karelia, including use of chicken manure as energy source. Russian Federation promised to finance this work.
- Finnish Outotec Oyj committed to implement the first manure/sewage sludge incineration/AshDec plant to the Leningrad Region as a reference plant in order to support nutrient and energy recovery technology development.
- Russian Gazprom and Danish Maersk presented their large-scale co-operation plans dealing with demand and distribution needs for liquid gas.



Next steps



Nutrient cycle in food production chain





EU and nutrients

EU is slowly awakening to realize that nutrient resources are:

- **Strategic issue**
 - EU dependency rate for phosphorus import is 92 %
 - Phosphorus supplies are limited and there is no substitute
 - Production of industrial nitrogen is very energy intensive
- **Political and societal issue**
 - Transition towards sustainable nutrient resource management has an impact on agricultural politics, rural development (job creation), food production chain and infrastructure of the cities (waste management)
- **Environmental issue**
 - Eutrophication
 - Hazardous substances
 - Dirtier mineral P sources lead to cadmium pollution of the fields

..although the focus is on phosphorous, when it should be on nutrients!



Global challenges – joint solutions

GLOBAL PROBLEM	BALTIC SEA PROBLEM	JOINT SOLUTION
POPULATION GROWTH AND FOOD SECURITY	EUTROPHICATION	
Limited supply of phosphorous	The main source of phosphorous runoff is agriculture	Recycling phosphorous in the agriculture
Urbanization	The secondary source of phosphorous runoff is waste waters	Nutrient recycling from the waste waters
CLIMATE CHANGE AND ENERGY CRISIS	Climate change increases agricultural runoff (increased precipitation)	I.e. Utilizing the energy potential of manure
Producing nitrogen and mining phosphorous are very energy-intensive actions	The main source of nitrogen runoff is agriculture	Recycling nitrogen in the agriculture, using leguminous plants
LOSS OF BIODIVERSITY	Ecosystem failures	Sustainable land-use and agriculture