Overview of the sufficiency of measures (SOM) analysis

HELCOM BSAP UP workshop on hazardous substances and litter

Heini Ahtiainen, Luke Dodd

ACTION project, HELCOM Secretariat

Co-funded by the European Union

Baltic Marine Environment Protection Commission

Aims

- Review the SOM approach and main results of the analysis
- Provide supporting information for discussions in the workshop

Outline

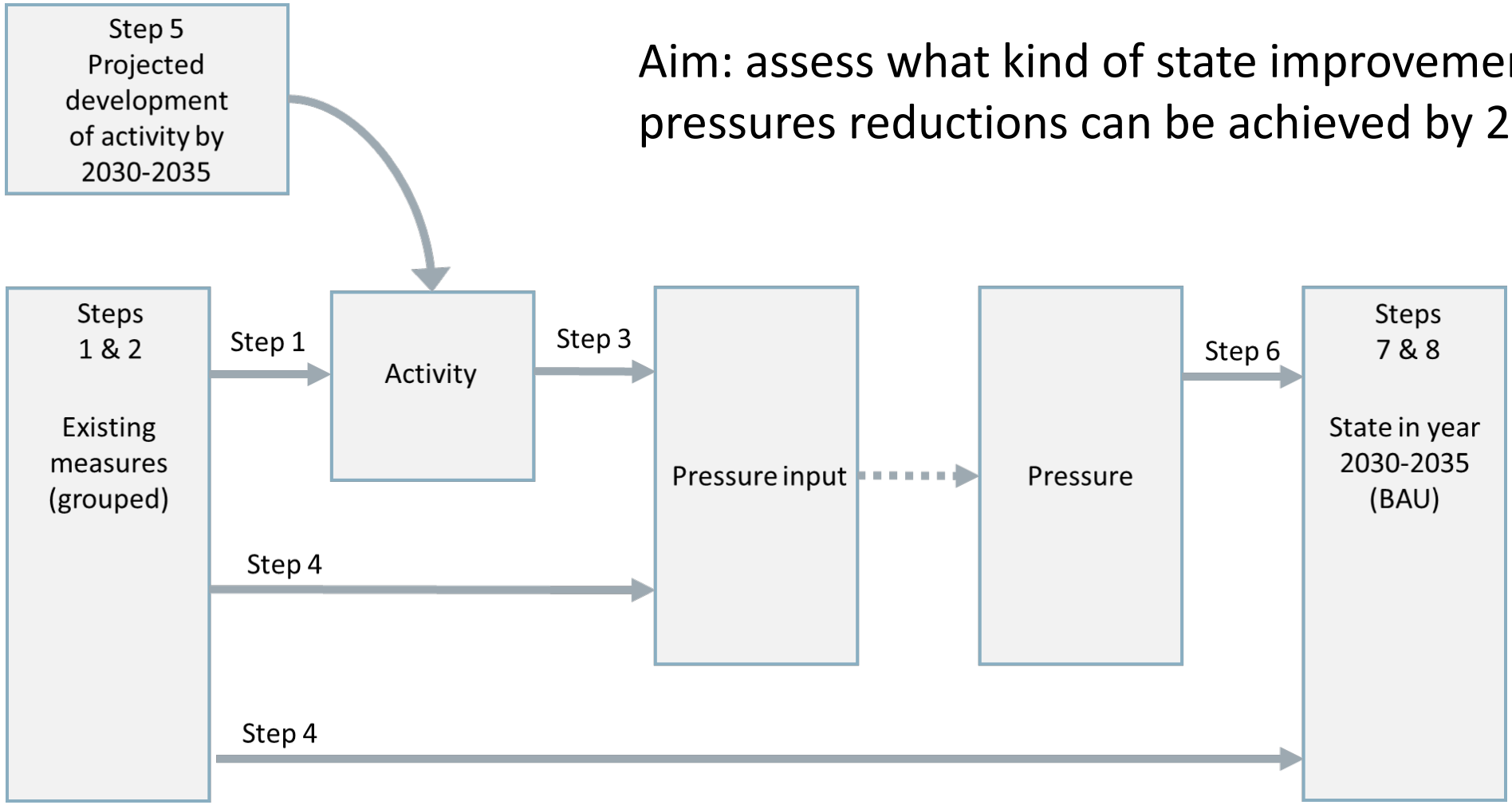
- Background
- SOM analysis overview
- Results for marine litter

Background

- Provides supporting information for evaluating proposed new actions
- First attempt to quantify the effects of existing measures on achieving objectives
- Combination of natural and social sciences approaches
- No final answers - should be considered in relation to other relevant results and assessments

Main components of the SOM analysis

Aim: assess what kind of state improvements or pressures reductions can be achieved by 2030-2035



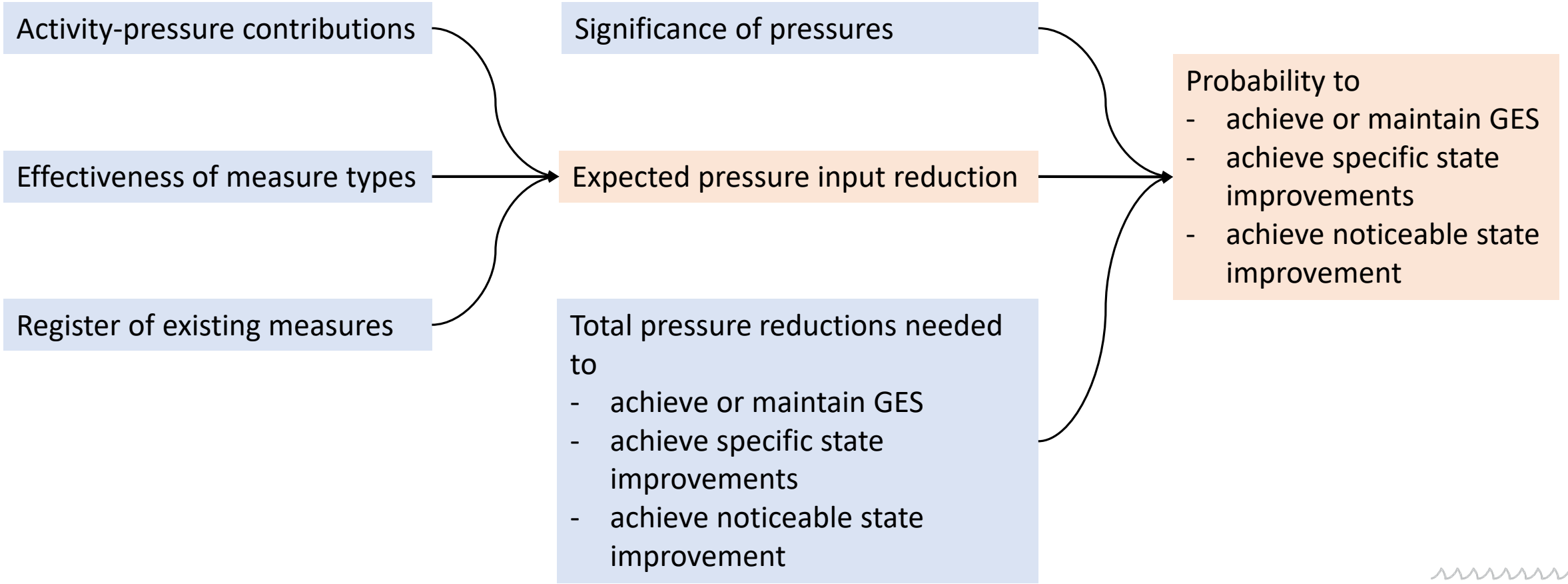
Relationship between pressure inputs and pressures

Pressure input	Relationship	Pressure
Bycatch of porpoise	Equivalent	Bycatch in fishing gears
Potential loss of seabed	Assumed equivalent	Physical loss of marine habitats
Input of continuous noise 63/125 Hz + Input of continuous noise 2 kHz	Assumed equivalent	Continuous underwater noise
Anthropogenic introductions of NIS	Link not quantified	Effects of non-indigenous species
Input of nutrients	Link not quantified	Effects of eutrophication
NA	No link	Human-induced food web imbalance
NA	No link	River, lake, or land habitat loss/degradation

Relationships between results

Independent

Dependent on previous results



Assumptions and features to keep in mind

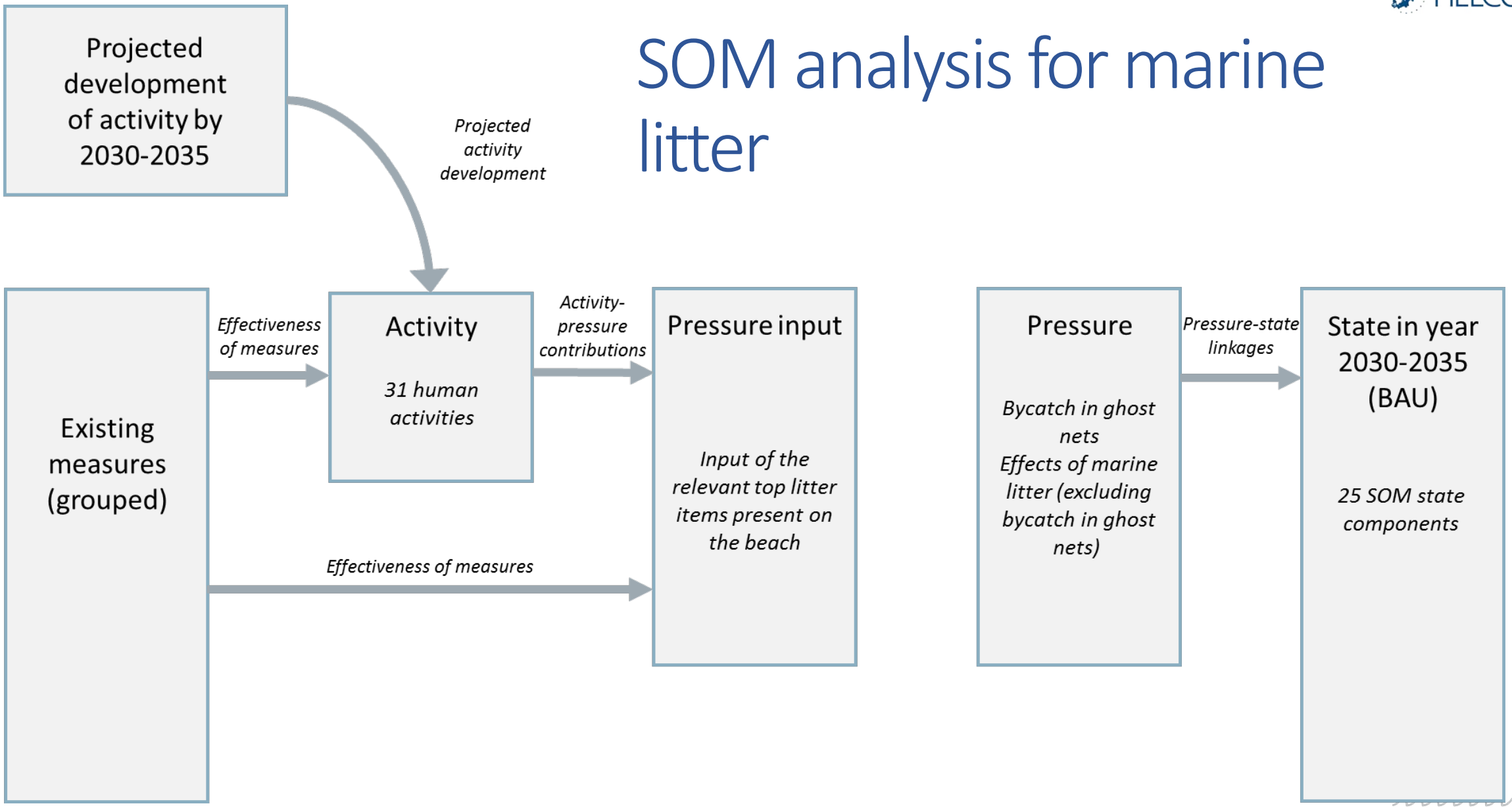
- Only measures affecting pressures in 2016-2035 considered
- All existing measures assumed to be fully implemented
- Effectiveness of measure types used to approximate the effectiveness of existing measures
- When considering total pressure, all pressures are interchangeable
- Not able to account for the effect of reductions of all pressure inputs on state components (e.g. because no link between input of nutrients and effects of eutrophication)
- Only most likely scenario on development of human activities included
- Data mainly from expert elicitation
  - literature data on effectiveness of measures not yet included

Results are preliminary – improvements in autumn 2020

- Input from SOM Topic Teams and SOM Platform, review by Working Groups
- Validation of input data by HELCOM Working and Expert Groups
- Minor changes to projected pressure reductions and state improvements
- Addition of alternative scenarios on development of human activities
- Substantial increase in results interpretation and contextualization
- Improved figures

Results of SOM analysis for marine litter

SOM analysis for marine litter



Data for marine litter

Data component	Origin of data	Spatial resolution
Activity-pressure contributions	Expert evaluation	6 sub-areas
Existing measures	Literature review, Contracting Parties	17 sub-basins
Effectiveness of measures	Expert evaluation	Whole Baltic Sea
Development of human activities	Literature review, existing data and projections	Whole Baltic Sea
Pressure-state links	NA	NA

Focus of SOM assessment for marine litter

- Projected total pressure reduction in the input of top 15 litter items to the beach

No.	**Litter item**
1	Plastic and polystyrene pieces 0-50 cm (PLASTIC)
2	Food related items, such as containers, lolly sticks, wrappers, packets (PLASTIC)
3	Drinking related items such as cups, caps, lids, six-pack rings (PLASTIC)
4	Plastic bags of different size and colour (PLASTIC)
5	Bottles and containers (PLASTIC)
6	String and ropes of different size (PLASTIC)
7	Cigarette butts and remains
8	Glass and ceramic fragments of different sizes and other glass items (GLASS)
9	Industrial packaging, such as sheeting and strapping bands (PLASTIC)
10	Processed wood and pieces of processed wood of different sizes (WOOD)
11	Drinking related items such as bottle caps, lids, pull tabs (METAL)
12	Single-use cutlery and straws (PLASTIC)
13	Paper and cardboard items and pieces of different size (PAPER)
14	Drinking related cans (METAL)
15	Foil wrappers and pieces of metal (METAL)

Projected reduction in pressure inputs

Input of top 15 litter items to the beach
High reduction (70-100%)

Top 15 litter items comprise 67% of all beach litter items around the Baltic Sea

Changes in pressure inputs result from existing measures and changes in human activities (e.g. waste waters, shipping infrastructure)

The most effective measure types per activity– input of top litter items to the beach

Activity	Fish and shellfish harvesting	Tourism and leisure activities (boating, beach use, water sports, etc.)	Transport – shipping (incl. anchoring, mooring)	Riverine inputs covering other land-based activities (e.g. urban uses, wastewaters, solid waste)
Measure type	No-special fee system for waste reception in ports from fishing vessels, including for the litter caught in fishing nets	Reducing the amount of plastic litter through improving municipal regulatory provisions concerning organisation of beach waste management, requirements for waste management and clean-up for public beach events and leases on beaches	Full implementation of the no-special fee system for waste reception in all Baltic Sea ports	Public awareness raising measures on marine litter impacts and prevention, promotion of sustainable consumption and production and appropriate waste management of single-use plastic products

Most important activities to the input of top litter items to the beach

Activity		Contribution share (%)
1	Tourism and leisure activities	15–90%
2	Riverine inputs covering other land-based activities (e.g. urban uses, wastewaters, solid waste)	5–60%
3	Transport – shipping	5–70%
4	Fish and shellfish harvesting	5–50%

Topic-specific issues

- Full analysis only for 15 top beach litter items
  - not representative of all marine litter (e.g. microlitter)
  - top 15 items comprise 67% of all items collected from beaches around the Baltic Sea
- No GES threshold for beach litter – proper SOM analysis not possible
- Mix of expert-based and monitoring data
  - Number of experts per data component: 6-14