

Cost-effectiveness of new measures

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SOM4/2020 meeting



S Y K E

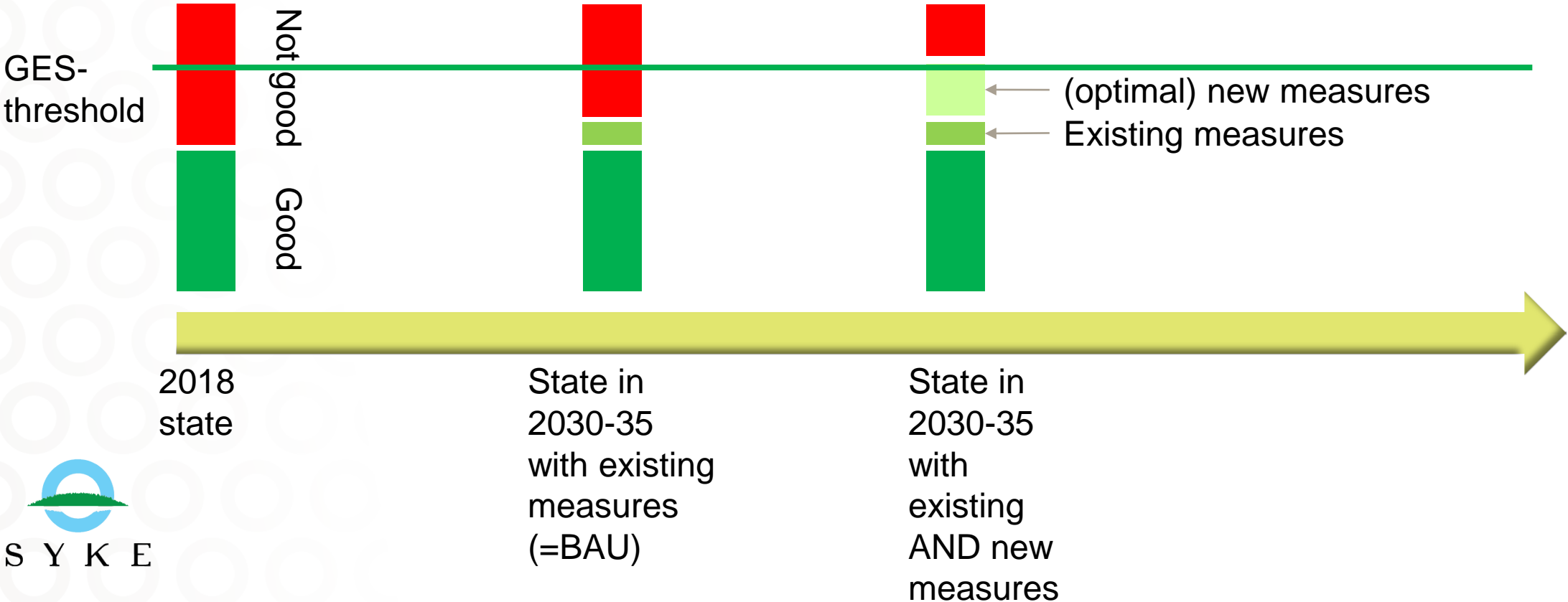
Background

- Previous plan was presented to SOM3 in March
 - took note that cost-effectiveness calculations will be conducted in the ACTION project but contributions will be needed from countries, SOM Platform topic teams, or other parties that suggest new measures.
 - took note that the focus is on the costs for the whole Baltic Sea region and not on the costs of individual countries, national information on costs will be utilized and cost estimates may be transferred across countries with appropriate adjustments.
- GEAR 22/2020: EN ESA supports the data collection by providing national cost estimates. EN ESA 9/2020 discussed the plan in May.

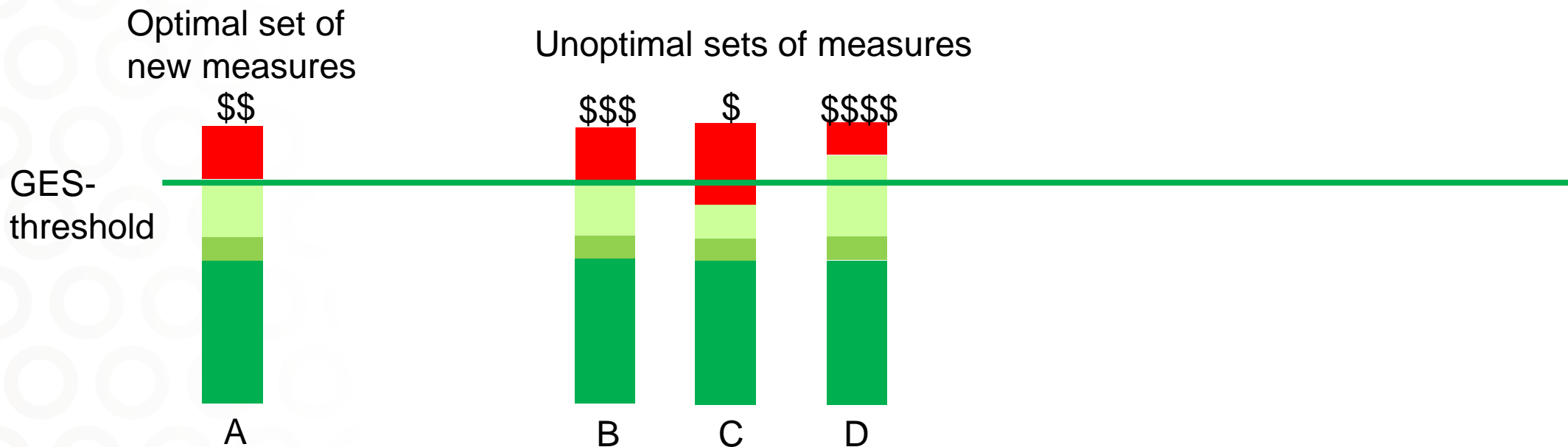
Background

- Data on the costs and effectiveness of potential new measures has been compiled from the synopses, via literature reviews and using data collected for the SOM analysis by the ACTION project.
- Some contracting parties, SOM Platform topic teams, ACTION WPs, and other parties have already contributed to the data collection for costs and effectiveness. Thank you!
- The collection of cost estimates from contracting parties ends 20 September 2020. There is still time, all contributions are appreciated!

How cost-effectiveness analysis links with the SOM-model of existing measures



Cost-effectiveness analysis and optimal sets of measures: GES with the lowest cost



C and D can be optimal sets of measures if optimization is done under budget constraint:
What is the best environmental status we can achieve with budget \$ or \$\$\$\$?

Effectiveness of new measures

The effectiveness data has been and will be collected from:

- Synopses of the proposed new measures (finished)
- References listed in the synopses (finished)
- ACTION project outcomes (finished)
- Expert-based data collected for the SOM model, and identification of the links of new measures to the measure types used in the SOM model (finished)
- Update the effectiveness estimates with the outcomes/notes from the BSAP workshops (ongoing)
- Use the literature reviewed for the cost data collection when it includes suitable effectiveness estimates (ongoing)
- Conduct joint searches for the effectiveness and costs of new measures (ongoing)



Costs of new measures 1

- The effectiveness data has been and will be collected from:
- the cost descriptions in the synopses of the new measures (finished)
- References listed in the synopses (ongoing)
- The literature that have been reviewed for the effectiveness of existing and new measures (ongoing)
- Cost data provided by ACTION WP2 (finished)
- Reviewing the cost estimates and relevant studies conducted for the Finnish Water Framework Directive (finished)



Costs of new measures 2

- Finding synergies with the Finnish cost-benefit analysis for MSFD POMs. A survey to collect the costs of new measures for the Finnish MSFD POM is currently open. At minimum 53 of the proposed Finnish MSFD measures overlap at least partly with the new BSAP measures, and the collected costs may be used to assess the magnitude of the costs of new BSAP measures. Such synergies may also exist with other contracting parties.
- Data collection for national and other estimates from other project partners, contracting parties and HELCOM EN ESA representatives. A simplified version of the costs database was created to facilitate the data collection (cost template and instructions are available in a dedicated folder in the EN ESA workspace) (ongoing, data collection ends 20th Sep).
- Also other possible sources exist, these will be used depending on time/human resources

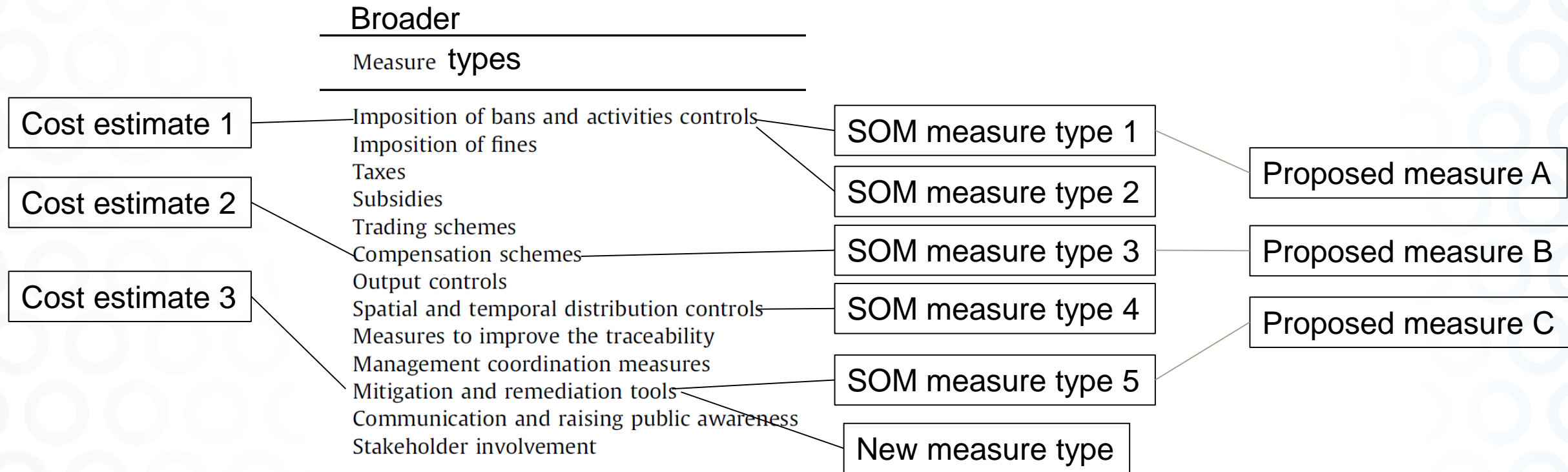


CONCRETE STEPS TO ESTIMATE COSTS OF PROPOSED NEW MEASURES

1. List the proposed new measures that will be included in the analysis. (finished)
2. Create causal pathways for implementation of the proposed new measures included in the analysis to understand who are affected by the measures and how (from expert workshops, synopses, descriptions of existing measures, reports). (mainly disregarded due to time constraints)
3. Identify the types of costs for proposed new measures based on causal pathways (from CEA reports, cost-guidance).(ongoing)
4. Considering the cost types for proposed new measures, review available cost estimates and existing data sources that can be used to define the costs of proposed new measures. (ongoing)
5. Cost transfer and estimation: Categorical costs and/or probabilistic approaches will be used for calculating and presenting the costs due to multiple sources of uncertainty along the cost estimation process. The differences between countries and basins will be considered when transferring the collected cost estimates for different areas in order to estimate the total and basin/country specific cost estimates. (planning stage)
6. Data validation and data gaps in existing cost data. Additional actions: expert opinion etc. (likely disregarded due to time constraints)



Using broader measure types to estimate the costs ? Just an example to illustrate the idea



These example broader measure types are from:

Kontogianni, A., Tourkolias, C., Damigos, D., Skourtos, M., & Zanou, B. (2015).

Modeling expert judgment to assess cost-effectiveness of EU Marine Strategy Framework Directive programs of measures. Marine Policy, 62, 203-212.

Cost effectiveness analysis and limitations

- Effectiveness of new measures will be assessed using the SOM model.
- Currently 29 state components and ~80 pressures in SOM model
- What can we use as proxies for effectiveness/sufficiency for holistic assessment required for cost effectiveness analysis?
- The number of possible sets of measures = $2^{\text{number of proposed measures}}$ = large number
- Not possible to assess the effectiveness of all measure sets
-> Need to rely on more heuristic methods/algorithms



Time table

<u>Task</u>	<u>Responsible</u>	<u>Timing (month in 2020)</u>
<u>Collecting effectiveness data</u>	<u>ACTION</u>	<u>April-July</u>
<u>Collecting cost data</u>	<u>ACTION/HELCOM EN ESA</u>	<u>April-September</u>
<u>Analysis of sufficiency of potential new HELCOM actions</u>	<u>ACTION</u>	<u>August- November</u>
<u>Cost-effectiveness analysis of potential new HELCOM actions</u>	<u>ACTION</u>	<u>August-November</u>
<u>Providing effectiveness estimates of proposed measures to BSAP UP workshops</u>	<u>ACTION/Secretariat</u>	<u>August</u>
<u>Providing results to Working Groups (meetings or intersessionally)</u>	<u>ACTION/Secretariat</u>	<u>October-December</u>
<u>Re-running cost-effectiveness analysis with updated information</u>	<u>ACTION</u>	<u>November-December</u>

