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| <b>Document title</b>  | Use of the methodology to reallocate extra reduction of nutrient input |
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| <b>Agenda Item</b>     | 3 - Matters arising from the subsidiary bodies                         |
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## Background

A possibility to use the reallocation of extra reduction between neighboring sub-basins of the Baltic Sea to fulfill national input reduction targets was agreed in the Ministerial Declaration 2013. The methodology for the reallocation was elaborated by RedCore DG and approved for trial use in the PLC-6 project by HOD 49-2016. However, the principles to use the methodology have not yet been agreed by the Contracting Parties. More specifically, no agreement was reached on principle 8. That's why the methodology was not applied for the PLC-6 results (assessment of CART).

The discussion on the principles to apply the reallocation of extra reduction to evaluate the progress towards national reduction targets has been going on since HOD 53-2017. The key stone of the discussion was the principle 8 (see attachment). The position of Germany was that principle 8 was fundamental for the application of the extra reduction methodology, while Denmark informed they could not accept principle 8 as it should be up to the Contracting Parties how to meet the commitments to achieve national input ceilings for nutrient inputs to sub-basins.

HOD 53-2017 took note of the suggestion by Germany regarding a compromise version for the text of principle 8 and invited Germany and Denmark to consider and agree on principle 8 in the format of intersessional consultations and continue discussion at HELCOM 39-2018 with an intention to come to an agreement on the use of the extra reduction for the assessment.

The discussion continued at HELCOM 39-2018, which concluded that no solution had been found between Germany and Denmark regarding the formulation of principle 8 of the methodology to reallocate the extra reduction. HELCOM 39-2018 agreed that the work on the consensus would be continued by PRESSURE WG and that a solution should be found during the update of the BSAP at the latest.

Application of the methodology and particularly formulation of the principle 8 was discussed at RedCore DG 24-2019. The Meeting acknowledged the positions of experts from Denmark and Germany that the extra reduction cannot be utilized for purposely increasing of input to a sub-basin where the input ceiling has not yet been achieved.

The attached document contains principles of reallocation of extra reductions to basins with missing reductions for the assessment of CART.

## Action requested

The Meeting is invited to take note of the current state of the discussion on the principles to apply the methodology to reallocate extra reductions.

Germany and Denmark are invited to inform about the results of intersessional consultations aiming at reaching an agreement on the principle 8.

## Principles and calculations of reallocation of extra reductions to basins with missing reductions for the assessment of CART

The following presents principles to be used for the reallocation of extra reductions and the results of the reallocation of extra reductions computed for the PLC-6 assessment. HOD 51-2016 endorsed the use of the methodology for accounting extra reduction as a trial calculation in the PLC-6 assessment (c.f. document 6-2).

The principles are:

**1. Accounting should be based on countries individually**

This implies that countries can plan and implement measures across basins at their own discretion as long as it results in conforming to CART after accounting of extra reduction is performed.

**2. Countries could claim accounting for missing reductions even if MAI is exceeded due to inputs from other countries**

No country should need to wait for any other country before claiming themselves fulfilment of CART.

**3. Any relocation of measures should lead to at least the same environmental improvement as if CART were implemented**

This is imperative for the GES to be achieved eventually. Inevitably, using extra reductions will lead to less inputs than MAI as seen as a total for the Baltic Sea, but its distribution need to be such that GES will be achieved everywhere.

**4. The effect of extra reductions on neighboring basins with missing reductions should be estimated given that these are minor deviations from MAI**

The Baltic Sea is a strongly perturbed system and hence, functioning quite different today compared to how it will function when measures been implemented and status approach GES. The whole calculation of MAI is taking this into account and when deviations to MAI are to be analysed, it should be done assuming that we are close to GES.

**5. Accounting for extra reductions in connection with CART follow-up assessments are to be performed in a uniform way supervised by RedCore DG**

Accounting for extra reductions should be included in the regular CART assessment using a common and harmonized methodology. RedCore DG is the forum that supervises development of methodology and, after appropriate approval, implementation of this in the assessment.

**6. The Archipelago Sea phosphorus input reductions should be accounted in the Finnish CART for Gulf of Finland (cf. BSAP 2007)**

Already in BSAP 2007, Finland pointed out that models failed to separate the Archipelago Sea from Bothnian Sea and that this should be taken into account at a later stage. Also in the 2013 revision of the nutrient reduction scheme, model limitations failed to address separate MAI calculations for the Archipelago Sea. However, within the context of accounting for extra reduction can be an opportunity to take into account separately the nutrient inputs to Archipelago Sea from the remaining Bothnian Sea inputs.

**7. In the context of extra reduction accounting, reductions of phosphorus to Baltic Proper could be accounted as input reduction in Gulf of Finland**

In the calculations of MAI, the most limiting targets affecting the distribution of MAI for phosphorus were the winter nutrient concentrations in the Baltic Proper. Strictly following the principle of “maximum” inputs, led to a situation where this gave an optimal solution resulting in removal of virtually all phosphorus inputs to the Baltic Proper and barely any reductions to Gulf of Finland. This solution clearly violated the principle of cost-efficiency so additional calculations based on cost functions for phosphorus input reductions were performed to distribute reductions between Baltic Proper and Gulf of Finland in a cost-efficient way. The obtained MAI results in conforming to phosphorus target in Baltic Proper, but in Gulf of Finland the resulting phosphorus concentrations will be significantly less than target. In line with this, it could be argued for states having phosphorus inputs both to Baltic Proper and Gulf of Finland, that *extra reductions* to Baltic Proper could be deducted from missing reductions in Gulf of Finland with 100% efficiency. However, one should keep in mind that the MAI for nitrogen to Gulf of Finland was determined from applying the HEAT approach, balancing nitrogen and phosphorus concentrations, so if MAI for phosphorus to Gulf of Finland is not achieved fully additional reductions on nitrogen inputs might be necessary.

**8. Following the precautionary principle, extra reduction accounting cannot be used to purposely increase inputs to a basin**

Although accounting of extra reductions is based current scientific knowledge and modelling, it comes with significant uncertainty and will sooner or later be subject of improvement. Therefore, it would be a risk for the environment to increase inputs to basins based on this methodology. In addition, a prerequisite for the calculations here is an environment close to GES and additional inputs today may cause significant deterioration of the present eutrophied state.