



Outcome of the Second Meeting of the Eighth Baltic Sea Pollution Load Compilation (PLC-8) Project Implementation Group (PLC-8 IG 2-2020)

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Outcome of the Second Meeting of the Eighth Baltic Sea Pollution Load Compilation (PLC-8) Project Implementation Group (PLC-8 IG 2-2020)

Introduction

- 0.1 The First Meeting of the PLC-8 Project Implementation Group (PLC-8 IG) took place online, on 14-16 December 2020.
- 0.2 The Meeting was attended by representatives from all the Contracting Parties except the EU. Also, experts from BNI (Sweden) participated in the Meeting. The List of Participants is contained in **Annex 1**.
- 0.3 The Meeting was focused on current PLC-8 project activities, annual data reporting and finalizing the remaining PLC-7 products.
- 0.4 The Meeting was chaired by the PLC-8 Project Manager, Lars M. Svendsen, Denmark, and Dmitry Frank-Kamenetsky, HELCOM Secretariat, acted as Secretary.

Agenda Item 1 Adoption of the Agenda

- 1.1 The Meeting adopted the Agenda of the Meeting as contained in document 1-1.

Agenda Item 2 Matters arising from other HELCOM work

- 2.1 The Meeting took note of the recent HELCOM activities related to the Group's work originating from outcomes of HOD 59-2020, PRESSURE 13-2020, DG BSAP and its segment teams.
- 2.2 The Meeting took note of the information presented by Germany on the results of the discussion with Poland on national shares in the total nutrient input by Order. The preliminary German share is now estimated as 3.66% of nitrogen and 8.52% phosphorus. However, the final decision on the newly established German shares will be taken on Friday 2020-12-18. The share, presumably, have been changed since the reference period due to the fact that most of the measures have been implemented in recent years at the Polish part of the river catchment area.
- 2.3 The Meeting agreed that the newly agreed shares will be used from 2017 onward and invited the countries to update the data reported to the HELCOM PLC database accordingly. The related information in the PLC Water Guideline is to be also updated accordingly.
- 2.4 The Meeting took note of the information on the revision of precipitation data in Denmark (**presentation 1**). The Meeting acknowledged that the revision of the precipitation data will require related adjustment of the data on the input of nutrients previously reported to the HELCOM PLC water database.
- 2.5 The Meeting also took note that nitrogen run off from Denmark for 2010-2014 has been underestimated due to errata in the analytical data. The Meeting took note that the whole data series for Denmark will be revised which affects also calculation of NICs. These changes of NICs will require thorough consideration by national experts and PRESSURE before introduction to the updated BSAP.
- 2.6 The Meeting took note that Denmark will be able to finalize 2017 periodic data reporting in the beginning of January 2021. Annual data 2019 are expected to be reported by Denmark by mid-April 2021.
- 2.7 The Meeting took note that HELCOM is currently considering the reorganization of the expert and working group meetings in future with the aim to reduce the amount of physical meetings.

Agenda Item 3 Data reporting

Annual 2019 data reporting

3.1 The Meeting considered current state of the 2019 annual data reporting as presented by the Secretariat (document 3-1).

3.2 The Meeting discussed the state of the reporting for each country and took note of that as following:

Germany: reporting has been completed. Some coordinates for monitoring stations are still to be updated.

Estonia: reporting has been completed and the data approved.

Finland: reporting started at the last week. Direct point sources are missing but will be reported by the end of the year.

Lithuania: reporting has been completed. Some missing data for municipal direct sources are not available and thus can't be reported.

Latvia: reporting has been completed.

Poland: reporting has recently started. Almost all data has been uploaded except for a couple of monitoring stations. The last corrections will be done, and reporting will be completed in the upcoming days.

Russia: reporting of the data on monitored and unmonitored areas has been almost completed. The reviewing of the data on point sources was launched due to some questionable data had been spotted. The work will be done during January which might result in revision of the previously reported data on direct sources.

Sweden: reporting has been started. There are several parameters for point sources which need manual quality assurance by the reporter.

Denmark: the reporting will be completed by mid-April 2021. There will be 3 additional sub-catchments reported.

3.3 The Meeting concluded that the main part of the reporting is expected to be accomplished by the end of 2020. After the revision of the data on point sources by Russia the dataset will be completed, missing only Danish data.

3.4 The Meeting agreed that the BSEFS on waterborne input of nutrients will not be updated before the beginning of May 2021 due to delayed reporting of Danish data.

Periodic data reporting (National monitoring activities)

3.5 The Meeting discussed current state of periodic data 2017 reporting and furthering product based on the data on sources of nutrients.

3.6 The Meeting took note that the Russia is reviewing periodic data 2017 on point sources which will be accomplished by the end of January 2021. Germany and Poland are also planning to update data on source apportionment for Odra river basin by the end of January 2021. Denmark will accomplish 2017 periodic data reporting by the end of January 2021.

3.7 The Meeting also briefly discussed national monitoring activities in 2021 to obtain data required for the successful implementation of PLC-8 project.

3.8 The Meeting pointed out that the periodic data reporting in the frame of PLC-8 project is to be organized in harmonised way avoiding cases when some countries report data for another than the agreed upon reporting year.

3.9 The Meeting took note that:

Sweden does not expect any changes in the data reporting compared to PLC-7.

Russia does not expect much changes in the reporting. Kaliningrad WWTP will be reported as an individual direct point source. Some updates of the data for Narva river catchment are anticipated.

Poland does not expect significant changes in the reporting. There is a plan to check the data on run off from agriculture.

Lithuania does not anticipate any changes in the data reporting compare to 2017 data.

Latvia: monitoring will be done the same way as previous years. There is a plan to use SWAT model for source apportionment.

Germany: no changes in monitoring and methods used for the assessment of sources are expected.

Finland expects some new information for the source apportionment model, but no major changes expected.

Estonia expects to apply the same methods and procedures as for 2017 reporting.

Denmark does not expect any major changes in monitoring. A new model for the assessment of the P run off from unmonitored areas is being tested now. It's expected to be operational in spring 2021, and will be used to recalculate input timer series for 1995 and onward.

3.10 The Meeting recalled that the deadline for the periodic data reporting has been changed and that periodic data 2021 are to be reported by 1 May of 2023.

Agenda Item 4 Finalizing the PLC-7 products

Thematic report on main sources and pathways of waterborne nutrient inputs to the Baltic Sea – state of the art.

4.1 The Meeting discussed current state of the periodic data reporting and future work on the product based on the data on sources of nutrients.

4.2 The Meeting pointed out that some of the codes in the PLC water database differ from PLC Guideline (e.g. PUS and PUL) which is to be corrected during the update of the Guideline.

4.3 The Meeting considered the compilation of 2017 data on sources apportionment (load-oriented approach) and agreed that an additional check of the data by national experts is needed.

4.4 The Meeting agreed that for the countries with high transboundary load the source apportionment will be computed for the territory of the country without transboundary load.

4.5 The Meeting took note that, in addition to Polish data, Germany and Sweden have updated data in the PLC water database since December 2019. The Meeting requested the Secretariat to update data in the compilation for these countries and provide the update Excel file to the Project Manager. Then, the updated file with respective comments by the Project Manager will be uploaded to the PLC-7 workspace and all project members will be notified about it.

4.6 The Meeting invited national data reporters to verify the data, make corrections in the Excel file and the PLC water database, if needed, and supply the Project Manager (lms@dce.au.dk) with short explanations for specific features of the national source apportionment by 22 January 2021, if the explanation is needed.

4.7 The Meeting also took note that Germany will update data on load-orientated source-apportionment for Oder catchment in the beginning of January 2021 and Russia might change data on point sources by the end of January 2021.

4.8 The Meeting invited countries which are planning to make changes in the PLC water database after the upload of the Excel file with data compilation to the PLC-7 workspace to make respective changes in this Excel file and immediately notify the Project Manager (lms@dce.au.dk) and the Secretariat (Juuso.Haapaniemi@helcom.fi).

4.9 The Meeting also discussed the availability of the data on source-oriented approach. The Meeting took note that Germany and Sweden have updated national data since the last extraction from the database. The Meeting requested the Secretariat to update these sheets in the compilation for the data on source-oriented approach and supply the updated compilation to the Project Manager.

4.10 The Meeting further took note that Sweden still need to verify data on source-oriented approach, which will be done in early January 2021.

Thematic report on 7 big rivers.

4.11 The Meeting considered a draft thematic report on input of nutrients by 7 big rivers as presented by Finland.

4.12 The Meeting recalled that the report is an update of the PLC-6 one but some new aspects, e.g. sources apportionment for river basins, have been included.

4.13 The Meeting took note that Russia needs additional time to approve the data on sources apportionment for Neva basin, as the source apportionment data 2017 are being reviewed until the end of January 2021.

4.14 The Meeting took note that the data on Oder river would be also corrected.

4.15 The Meeting agreed that the updated data are to be available before the end of January 2021. In case, the data are not available in due time the report will be forwarded to PRESSURE for the endorsement via correspondence without any updates.

4.16 The Meeting took note of the proposal to add data on specific run off ($l\ s^{-1}\ km^{-2}$) to the table of river's characteristics.

4.17 The Meeting also pointed out that source apportionment for transboundary rivers is performed only for the countries that are HELCOM member states which means that background loads for the transboundary part is not accounted. This calculation method makes the proportion of the natural background run off unnaturally low for these rivers.

4.18 The Meeting took note that some participants have got specific comments on the report. Thus, the Meeting requested national representatives in the PLC project team to provide required updates to the text of the report by 15 January 2021 to Finland (antti.raike@ymparisto.fi).

Thematic report on input of hazardous substances to the Baltic Sea.

4.19 The Meeting considered a draft thematic report on input of hazardous substances to the Baltic Sea submitted by Sweden (**Presentation 2**).

4.20 The Meeting invited PLC project member to provide written comments on the draft thematic report by 21 January 2021 to Sweden (Lars.Sonesten@slu.se).

4.21 The Meeting also pointed out that maps illustrating data coverage in the period 2015-2017 as well as point source of heavy metals and the table with LOQ are to be also updated before the draft report circulated to PRESSURE for reviewing and endorsement and requested the Secretariat to supply these maps to Sweden.

Thematic report on evaluation of effectiveness of measures.

4.22 The Meeting considered a proposal for the content of the thematic report on effectiveness of measures and overview of the data compiled for the report presented by Finland (**Presentation 3**).

4.23 The Meeting agreed to supply Finland (antti.raike@ymparisto.fi) with short descriptions of the wastewater treatment plants in the large cities included in the thematic report by 15 January 2021.

4.24 The Meeting took note that the data coverage for indirect point sources has been remarkably improved since PLC-4 assessment which might explain the difference between the data compiled for PLC-4 and PLC-5.

4.25 The Meeting pointed out high variability of data on indirect point sources reported for different PLC assessments and requested PLC team members to supply also a brief description of the changes in the methodology to compile and report data on indirect point sources to Finland (antti.raike@ymparisto.fi) by 15 January 2021.

4.26 The Meeting recognized that information on scattered dwellings is missing for some countries and requested national data reporters to provide missing information to Finland by 15 January 2021 to Finland (antti.raike@ymparisto.fi).

4.27 The Meeting agreed that the thematic report will be submitted to PRESSURE 14-2021.

4.28 The Meeting agreed to return to the consideration of the draft thematic report on effectiveness of measures at PLC-8 IG 3-2021 with intention to submit the final draft to PRESSURE 14-2021.

National methodology report

4.29 The Meeting considered a draft report on national methodologies applied in the Baltic Sea region to assess input of nutrients presented by the Project Manager.

4.30 The Meeting concluded that the information in all chapters of the report is valid except for ones of Finland and Lithuania which require some update. MS Word version of the report will be circulated by the Project Manager to Finland and Lithuania for the reviewing. The Meeting invited representatives of Finland and Lithuania to make required updates by 1 February 2021 and forward the updated document to the Project Manager (lms@dce.au.dk).

4.31 The Meeting agreed that the final version of the document will be endorsed for publication as PLC-7 project material by PLC-8 IG 3-2021.

Background information report

4.32 The Meeting took note of the current state of the PLC-7 background information report.

4.33 The Meeting recognized that Danish data on number of inland points sources are missing in the document and took note that maps and tables are to be updated when Danish 2017 periodic data has been reported. The Meeting requested the Secretariat to make related updates.

4.34 The Meeting took note that the update of the population tables is needed and that the Project Manager will circulate tables for verification by national experts. The results of the verification are to be supplied to the Project Manager (lms@dce.au.dk) by 1 February 2021.

4.35 The Meeting took note that the MS Word version of the report will be available in the [PLC-7 workspace](#) on the HELCOM website and invited PLC project partners to verify and, if needed, update national data in the document by 1 February and forward the updated versions of the document to the Project Manager (lms@dce.au.dk).

4.36 The Meeting noted an observation by Russian experts that remote sensing gives twice higher values for the arable land percentage on land use maps than official statistics. The Meeting requested the Secretariat to insert the link to the original data used to produce land cover maps in the background information report.

4.37 The Meeting took note that visualizing Swedish aggregated fish farm data on the map might be misleading for readers being a mixture of aggregated and individual sources. Only direct sources of nutrient input from Sweden should be shown on the map. The Meeting also requested the Secretariat to update maps accordingly.

4.38 The Meeting agreed that all updates are to be made by 1 February 2021 and the final version is to be approved at PLC-8 IG 3-2021.

PLC-7 executive summary.

4.39 The Meeting took note that there was no progress achieved in the development of the executive summary since thematic reports are not ready and consequently there has no input from authors been received.

4.40 The Meeting invited authors of the thematic reports to provide respective input for the executive summary before PLC-8 IG 3-2021.

Agenda Item 5 PLC-8 activities

Intercalibration

5.1 The Meeting discussed current state of the intercalibration campaign as presented by DCE, Denmark.

5.2 The Meeting took note that laboratories from all HELCOM countries have registered for the intercalibration. DCE will notify the 22 laboratories and PLC national representatives in advance when samples will be about to be sent to the recipients, which is planned in week 3-2021. The labs participating in the intercalibration campaign will report on the results of the analysis within three weeks after receiving the samples.

5.3 The Meeting also took note that all samples will be sterilized for stability of nutrients in the samples, and that the analysis will be performed in the national labs and in the reference lab in the same period to ensure comparability.

5.4 The Meeting invited DCE to provide the first overview of the intercalibration campaign at PLC-8 IG3-2021.

Updating statistical methodologies

5.5 The Meeting considered presentation on the further advancement of the statistical methods to assess the input of nutrients, to estimated uncertainties of the assessment and to evaluate progress towards regionally agreed targets as presented by Denmark (**presentation 4**).

5.6 The Meeting took note of the concern expressed by Sweden regarding the complexity of the statistic report and capability to produce such a complex publication in time bearing in mind time restrictions.

5.7 The Meeting pointed out that the national experts in statistics are to be involved in consideration of the suggested methods to process nutrient input data already on the early stage of the development of newly proposed methods, but that the involvement is the responsibility of the respective countries. This will ease achieving regional agreement on the statistical tools used for the assessment.

5.8 The Meeting invited Denmark to forward a pre-draft report to Swedish statistician Claudia von Brömssen and receive feedback on the draft. The Meeting also invited other PLC group members to consult with national experts in statistics, if they see it needed.

Updating the PLC Water Guidelines

5.9 The Meeting discussed the scope of the revision of the PLC Water Guideline presented by the Project Manager.

5.10 The Meeting took note that there is [a document approved by HOD 50-2016](#) describing all PLC reporting procedures and identifying deadlines for major PLC products delivery. The Meeting agreed to consider this document and decide on its inclusion in the updated PLC water guideline at PLC-8 3-2021.

5.11 The Meeting took note that the updated information on background information for modelling background losses of nutrients have been received by Germany from all CPs except for Denmark and Russia. The Meeting invited representatives of these countries to provide necessary updates by 15 January 2021 to Germany (julian.moennich@uba.de).

5.12 The Meeting agreed on the scope of the revision and sharing responsibilities on the revision of the Guideline's chapters as given in the Annex 4.

5.13 The Meeting invited PLC project members to supply their proposals on the update of the respective chapters to the Project Manager (lms@dce.au.dk) by 15 February 2021. The Meeting acknowledged that the scope of the required revision broadly varies for different chapters and agreed that a concept of the revision could be provided for the chapters which require extensive update.

5.14 The Meeting agreed that the revision is to be finalized by the end of 2021 by sending the guidelines for approval to PRESURE autumn 2021 and adoption by HOD in December 2021 to make the revised document used for the PLC-8 assessment process.

Agenda Item 6 Any other business

6.1 The Meeting considered the information on the intermediate results of the Russian-Estonian NARVAWATMAN project (document 6-1, **presentation 5**) aimed at the elaboration of common view on the shares of Russia and Estonia in the total nutrient load by Narva river and harmonization of methods to assess contribution of various source. Draft methodology has been elaborated for this purpose and quantification process is taking place at moment. The Project are to be finalized in spring 2022.

6.2 The Meeting welcomed the proposal to use the project results in PLC-8 project, if Estonia and Russia will support the proposed adjustment of nutrient load division between countries.

6.3 The Meeting took note of the information on the project to utilize the SWAT model to simulate nutrient and organic compounds run off in selected river basins and welcomed the project results presented by Poland (document 6-2). The Meeting took note also that the project included modelling of three catchment areas and Poland currently has no plan to apply the model for the whole country. Despite of successful modelling results the application of the model demands vast amount of specific and detailed data which are not available for the whole territory of the country.

6.4 The Meeting also briefly discussed the status of the current NIC values and potential for their update when new data are reported by Denmark. The Meeting emphasized that all changes in currently proposed values are to be considered by PRESSURE before integration in the draft updated BSAP.

6.5 The Meeting discussed the timing and themes for the workshop planned in the frame of the PLC-8 project.

6.6 The Meeting took note that Germany is planning to arrange a workshop aimed at implementation of measure to mitigate nutrient run off in the frame of the German presidency in HELCOM. The Meeting suggested to utilize this opportunity to discuss PLC related issues, particularly, the availability of data for the evaluation of the effectiveness of measures.

6.7 The Meeting reviewed the information resources related to the input of nutrients at the HELCOM website and recommended:

- to lift the link to the whole text of the indicator report to the top of the related subpage of the section dedicated to the nutrient reduction scheme;
- remove old sub-pages from the "input of nutrients" subpage in the eutrophication section of the "action areas", substituting it by link to the related paged of the "nutrient reduction scheme" section.

6.8 The Meeting took note that the procedure for reporting of the information on monitoring stations in transboundary sub-catchments has been recently improved in the HELCOM PLC water database.

6.9 The Meeting updated the contact list for the PLC-8 project as given in the Annex 2.

Agenda Item 7 Future work and meetings

- 7.1 The Meeting took note of the updated timetable for PLC-8 project implementation presented by the Project Manager (Annex 3).
- 7.2 The Meeting agreed on the topics to be considered by PLC-8 3-2021 as given in the Annex 5.
- 7.3 The Meeting agreed that PLC-8 IG 3-2020 will be held 8-10 March 2020 online.

Agenda Item 8 Closing the Meeting

The Meeting agreed to approve the Outcome via correspondence.

Annex 1 List of participants

Representing	Name	Organization	E-mail
Chair the Group	Lars M. Svendsen	DCE - Danish Centre for Environment and Energy, Aarhus University, Denmark	lms@dce.au.dk
Denmark	Henrik Tornbjerg	Aarhus University - Department of Bioscience	hto@bios.au.dk
Estonia	Kristiina Ojamäe	Estonian Environment Agency	kristiina.ojamae@envir.ee
	Kristi Uudeberg	Estonian Environment Agency	kristi.uudeberg@envir.ee
Finland	Antti Räike	Finnish Environment Institute (SYKE)	antti.raike@ymparisto.fi
Germany	Julian Mönnich	German Environment Agency	julian.moennich@uba.de
Latvia	Ilga Kokorite	Latvian Environmental, Geology and Meteorology Center	ilga.kokorite@lvgmc.lv
Lithuania	Svajunas Plunge	Environmental Protection Agency	svajunas.plunge@aaa.am.lt
Poland	Alicja Pecio	IUNG-PIB, Pulawy, Poland	Alicja.Pecio@iung.pulawy.pl
	Damian Bojanowski	State Water Holding Polish Waters	damian.bojanowski@wody.gov.pl
Russia	Natalia Oblomkova	Institute for Engineering and Environmental Problems in Agricultural Production – branch of Federal State Budgetary Scientific Institution “Federal Scientific Agroengineering Center VIM” (IEEP – branch of FSBSI FSAC VIM)	oblomkovan@gmail.com, oblomkova@helcom.ru
Sweden	Lars Sonesten	Swedish University of Agricultural Sciences	Lars.Sonesten@slu.se
	Katarina Hansson	IVL Swedish Environmental Research Institute/SMED	katarina.hansson@ivl.se
	Michael Pohl	Swedish agency for marine and water management	michael.pohl@havochvatten.se
BNI	Alexander Sokolov	BNI, Stockholm University, Sweden	alexander.sokolov@su.se
	Bo Gustafsson	BNI	bo.gustafsson@su.se
HELCOM	Dmitry Frank-Kamenetsky	HELCOM Secretariat	dmitry.frank-kamenetsky@helcom.fi
	Juuso Haapaniemi	HELCOM Secretariat	juuso.haapaniemi@helcom.fi

Annex 2 List of nominated national contacts for PLC-8

Representing	Name	Organization	E-mail
Chair the Group	Lars M. Svendsen	DCE - Danish Centre for Environment and Energy, Aarhus University, Denmark	lms@dce.au.dk
Denmark	Lars M. Svendsen	DCE - Danish Centre for Environment and Energy, Aarhus University, Denmark	lms@dce.au.dk
	Henrik Tornbjerg	Aarhus University - Department of Bioscience	hto@bios.au.dk
Estonia	Kristiina Ojamäe	Estonian Environment Agency	kristiina.ojamae@envir.ee
	Kristi Uudeberg	Estonian Environment Agency	kristi.uudeberg@envir.ee
Finland	Antti Räike	Finnish Environment Institute (SYKE)	antti.raike@ymparisto.fi
Germany	Julian Mönnich	German Environment Agency	julian.moennich@uba.de
Latvia	Ilga Kokorite	Latvian Environmental, Geology and Meteorology Center	ilga.kokorite@lvgmc.lv
Lithuania	Svajunas Plunge	Environmental Protection Agency	svajunas.plunge@aaa.am.lt
Poland	Alicja Pecio	IUNG-PIB, Pulawy, Poland	Alicja.Pecio@iung.pulawy.pl
	Damian Bojanowski	State Water Holding Polish Waters	damian.bojanowski@wody.gov.pl
Russia	Natalia Oblomkova	Institute for Engineering and Environmental Problems in Agricultural Production – branch of Federal State Budgetary Scientific Institution “Federal Scientific Agroengineering Center VIM” (IEEP – branch of FSBSI FSAC VIM)	oblomkovan@gmail.com, oblomkova@helcom.ru
Sweden	Lars Sonesten	Swedish University of Agricultural Sciences	Lars.Sonesten@slu.se
	Katarina Hansson	IVL Swedish Environmental Research Institute/SMED	katarina.hansson@ivl.se
	Michael Pohl	Swedish agency for marine and water management	michael.pohl@havochvatten.se

Annex 3 Updated timetable for PLC-8 project

Table 1: Overview of the main tasks and the planned start and end for each task. “4/2021” indicates fourth quarter of 2021. The column “Finalized” indicates when tasks has been finalized. *Italic*: extra task not included in the project description.

Yellow: deadlines difficult to fulfil based on former assessments. **Green**: revised deadlines.

PLC-8 task	Start	End	Finalized
Project management (including about 13 project team meetings)	3/2020	4/2024	
Workshops (2 workshops are planned)	4/2021	3/2024	
Compilation of the executive summary and policy messages	3/2024	4/2024	
<i>Monitoring annual data 2019</i>	1/2019	4/2019	4/2019
Monitoring annual data 2020	1/2020	4/2020	4/2020
Monitoring annual data 2021	1/2021	4/2021	
Monitoring annual data 2022	1/2022	4/2022	
Monitoring annual data 2023	1/2023	4/2023	
Compilation + reporting of quality assured national annual: - 2019 data	4/2020	1/2021	
- 2020 data	4/2021	1/2022	
- 2021 data	4/2022	1/2023	
- 2022 data	4/2023	1/2024	
- 2023 data	4/2024	??????	
Establishing of annual assessment data set 2019	4/2020	1/2021	
- Data set 2020	4/2021	1/2022	
- Data set 2021	4/2022	1/2023	
- Data set 2022	4/2023	1/2024	
Monitoring and collection of national periodic data 2021	1/2021	4/2021	
Compilation and reporting of quality assured national periodic data 2021	1/2022	1/2023	
EMEP: annual data and indicator fact sheets 1995-2019	2/2021	3/2021	
EMEP: annual data and indicator fact sheets 1995-2020	2/2022	3/2022	
EMEP: annual data and indicator fact sheets 1995-2021	2/2023	3/2023	
EMEP: annual data and indicator fact sheets 1995-2022	2/2024	3/2024	
EMEP: source receptor, main sources data + report based on 2021 data	2/2023	4/2023	
Establishing the periodic assessment data set (PLC 2021 data)	1/2023	3/2023	
Updated of background information including information on measures	1/2023	2/2024	
Annual BSEP on waterborne nutrient inputs 1995-2018	2/2020	2/2020	2/2020
Annual BSEP on waterborne nutrient inputs 1995-2019	2/2021	2/2021	
Annual BSEP on waterborne nutrient inputs 1995-2020	2/2022	2/2022	
Annual BSEP on waterborne nutrient inputs 1995-2021	2/2023	2/2023	
<i>Annual BSEP on waterborne nutrient inputs 1995-2022</i>	2/2024	2/2024	
<i>Update of HELCOM MAI indicator 1995-2018</i>	3/2020	4/2020	4/2020
Update of HELCOM MAI indicator 1995-2019	3/2021	4/2021	
Update of HELCOM MAI indicator 1995-2020	3/2022	4/2022	
Update of HELCOM MAI indicator 1995-2021	3/2023	4/2023	
Update of HELCOM MAI indicator 1995-2022	3/2024	4/2024	
Assessment of the progress towards NIC 1995-2020	2/2022	4/2022	
Assessment of the progress towards NIC 1995-2022	2/2024	4/2024	
Assessment of inputs by big rivers 1995-2021(?)	1/2023	4/2023	
Assessment of inputs of selected hazardous substances 1995-2021(?)	1/2023	4/2023	
Assessment of sources of nutrients (PLC 2021 data)	3/2023	2/2024	
Assessment of the effectiveness of measures 1995-2021(?)	1/2023	1/2024	
Updating PLC guidelines (original deadline 1/2021)	3/2020	4/2021	

Updating statistical methodology report (changed from 3/2023-4/2023 to:)	4/2020	2/2021	
Intercalibration of hazardous substances and nutrients concentrations	3/2020	2/2021	
<i>Other tasks to finalized from PLC-7 project:</i>			
- <i>PLC-7 Hazardous substances</i>		1/2021	
- <i>PLC-7 Big rivers report</i>		1/2021	
- <i>PLC-7 methodology report</i>		1/2021	
- <i>PLC-7 backgroud information report</i>		1/2021	
- <i>Evaluation of effectiveness of measures</i>		2/2021	
- <i>Assessment of nutrient sources</i>		2/2021	
- <i>PLC-7 executive summary</i>		2/2021	

Annex 4 Plan for revision of the PLC-water guidelines

Identified topics/issues that need revision in the PLC guidelines – updated at PLC-8 IG2/2020 meeting

Lars M. Svendsen, PLC project Manager

Based on the discussions at PLC-8 IG1+2/2020 I have updated this paper, including with names of PLC IG volunteering revising the individual chapters/sub-chapters.

It was decided that revised chapters or ideas on how chapters could be revised should be forwarded to the project manager (lms@dce.au.dk) not **later than 15 February 2021**.

Project manager will collect and insert inputs in the guidelines to be send out before PLC-8 IG3/2021 meeting. Further draft will be elaborated in spring to early autumn 2021 in order to send a final draft of the guidelines to PRESSURE meeting in autumn 2021, and for adoption at HOD in December 2021.

Aims of PLC (chapter 1.1-1.2) - Secretariat

- Only minor updates required to get it align with the present situation

PLC data reporting requirements (chapter 1.3) - LMS

- We have discussed variables to be reported annually and for the periodical assessment (page 11 and 12 in present guidelines) – and it was concluded that there is no need for minor any changes
- Annual reporting, make following changes:
 - Add voluntary on nutrient fractions for “transboundary at the border of the Contracting Party”
 - Consider TOC – important in relation to evaluate climate impact, and the carbon system
 - Footnote 1: Revise – not the intention to have many samples below LOQ
 - Footnote 10: update
 - Footnote 11: LOQ formula not correct on page 11

Definitions and framework: (chapter 2) – LMS + Secretariat and PLC IG

- General critical review of used definitions to ensure consistency – update and added as necessary
- Update fig 2.1 if structure in the guidelines are revised
- Update fig. 2.5-2.8 to reflect the status of the 2019 reporting. Secretariat will update maps where appropriated.
- Consider to include HOD 50/2016 doc. 4-6 on “Draft Procedure for releasing the reported PLC water data” in the guidelines (<https://portal.helcom.fi/meetings/HOD%2050-2016-327/MeetingDocuments/4-6%20Draft%20Procedures%20for%20releasing%20the%20reported%20PLC%20water%20data.pdf>). Main timeline/procedures/messages included in chapter 2 – and the full document (4 pages) in annex – and update some of the deadlines accordingly to the decision to change deadlines for periodic reporting

Flow measurements (chapter 3.1) and sampling strategy water samples (chapter 3.2) – LMS + LSo

- Check for updates according to latest WMO standards
- Is there a wish for more guidance regarding – no clear response from the meeting
- Updates needed for flow to include automatic flow monitoring I rivers /check if international standards have been modified for rivers and point sources
- There seems no need to insert a section regarding HZS – more relevant to include a section on preservation etc. in annex 5

Quantifying loads from monitored rivers (chapter 4): -LMS + Natalja

- Mostly checking for any errors – checking with latest international standards (WMO)
- Are any method missing?
- *No guidance from the meeting?*

Quantifying load from point sources (chapter 5): - LMS + Katarina Hansson + LSo

Updates for chapter 5.1 and 5.2 have been received

- Overall: do have to take into account any changes in EU Directives, other regulation regarding WWTP and Industry - *accomplished*
- MWWTP: only minor updates needed, but we should revised TN and TP in 1 PE
- Industry: might need (minor) updates - *accomplished*
- Aquaculture: should be checked, updated – some tables with content of TN and TP in feed and fish might need updates. The present aquaculture sub-chapter is elaborate for salmonid fish (mostly trout) – do we need any guidance for other species?
- Check aquaculture sub-chapter against updated HELCOM recommendation incl. taking into BAT
- *No likely that we need any special paragraphs or amendments related to HZS*

Natural background inputs (chapter 6.1): Julian + LMS

- Significant updates needed – including agreement on the definition
- Updated based on paper from Germany
- Agree on the definition
- Agree on methodology
- Update examples from each CP
- Germany Excel spreadsheet with information related to inputs required in national models used for estimating natural background losses: input requested for Denmark and Russia by 1. February 2021.
- Clarify if it is relevant regarding HZS – not for PLC-8?

Quantifying diffuse losses of inputs (chapter 6.2): -Michael Poel

- No methodology proposed as agreed under PLC-7. The sub-chapter includes mostly what is anthropogenic sources and pathways
- Further it list some relevant issues to consider before choosing a model and what issues should be documented, and some examples on model modelling diffuse nutrient sources
- Keep the chapter rather short but update the overview of models with the models used in the contracting parties
- We should added a table with some more information e.g. om what are the main input to the different models, what are the main output, which time and spatial scale are used for modelling and about modelling precision?
- Is this chapter mainly used in relation to making source apportionment – or it could also cover modelling diffuse inputs from unmonitored areas
- Should we include a sub-chapter on how to quantify atmospheric deposition of TN and TP on inland surface waters?
- The chapter should also include hos to quantify losses from scattered dwellings and storm water effluent – *take a look at corresponding OSPAR guidelines (LMS send to Michael)*
- For next PLC meeting Michael will make a proposal for a table containing main model characteristics for discussion at the meeting

Quantifying inputs from unmonitored areas (chapter7):-LMS + Natalja + Michael Pohl

- Consist of only one page with focus presenting how to estimate loads from unmonitored areas by extrapolating from unmonitored areas taking into points sources or not
- It is shortly mention that you could use method from chapter 6
- Need to refer to chapter 6 on how to model diffuse losses from unmonitored areas
- Consider to include a sub-chapter related to HZS

Quantifying transboundary inputs (chapter 8): -Bo + Ilga

- Check/update definitions (8.1) and necessary information for quantifying transboundary inputs as necessary
- It should be very clear who has the responsibility to calculate retention in different part of a transport river and to report it
- Updated 8.3 (e.g. tables) on actual and net transboundary inputs used in BSAP2021 (now it is in BSAP2013)
- Extend sub-chapter 8.3 with the individual transboundary inputs per rivers according to updated NIC's – and check if there is a need to update formulas and get rid of table 8.4
- Update table 8.3 with information about the transboundary rivers

Retention (chapter 9): Michael Poel + Henrik Tornbjerg + Bo

- Check/update definition – be clear that retention in PLC covers retention in inland surface waters
- Update figure 9.1 – data by catchment (could include modelled values for some rivers and reported values for others)
- We should add some examples on models – the models approach is extremely short – and it would be fine with a list of used model provide short overview of inputs to the model, what are the output, are it modelling retention in rivers, lakes soils, etc. on what is the resolution in time and space (as we intend to do in chapter 6.2)
- Provide updated/better retention data than given in chapter 9.3

Source apportionment methodologies (chapter 10): -LMS + Antti

- The source oriented part is very short (nine lines) referring to chapter 6 and 7. Do we need some further guidance e.g. on the different diffuse sources CP's can report and how some diffuse sources could be aggregated
- Show examples on how data are assessed to help CP understand the data are used?
- *Load apportionment: We have described one methods – it should cover all CP's but do CP's need more guidance, further description – to be further discussed*

Statistical methodology including uncertainty estimates (chapter 11): -SEL+LMS

- Update statistical methodology chapter based on the updated statistical report
- Do we need to extend section on how to handle data gaps (11.1) and outliers (11.2) – to be further considered
- Extend and give examples for uncertainty on inputs (11.4)
- *Do we need more guidance/examples regarding how to make the different statistical analysis – to be further considered*
- We remove sub-chapters on “Testing fulfilment of BSAP reduction targets” and “Testing with significant trends” because it is and assessment exercise, but keep normalization, and trend and change point analysis – on maybe extend on the normalization methodology

- Deleted sub-chapter “Mathematical description of the Mann-Kendall trend test”, and describe in more details the normalization, trend change point and regressions test?

Quality assurance of chemical analysis (chapter 12.1-12.12.2 and 12.5) and other measurements (flow, stage etc.) (no chapter): -LSO+SUB

- Update/revise chapter 12.1 and “Specific aspects of quality assurance”, 12.2 “Minimum quality assurance by Contracting Parties” and 12.5 “Validation of PLC-Water chemical data
- Include paragraph on how to proceed with small values below LOQ (LOD)
- Is there a need on how to quality assure flow and stage monitoring data, and the flow calculations and how water samples are collected – *further discussion needed*

Laboratory intercalibration results (chapter 12.3-12.4), LOQ (12.6-12.7) and determination of variables in rivers: -SUB+LSO

- 12.3 and 12.4 are very short – need for more guidance/updates
- Tables 12.1 on LOQ might need revision
- Formula 12.2 with LOQ are not correct
- Revision needed for 12.8? Consider if it provide the relevant information

Reporting requirements – annual reporting (chapter 13): Secretariat+PLC IG/reporters

- Should we change in any obligations
- Should be checked and updated to reflect any changes in other chapters
- Should be clarified if there has been several questions on the same topic
- Clarify only one unit for a substance/parameter
- Exemption from reporting deadline (DK)
- Other issues raised on former PLC-7 meetings

Reporting requirement – periodical reporting (chapter 14): Secretariat + PLC IG/reporters

- As chapter 14 – important it is clear what is mandatory and voluntary
- Changed reporting deadline and other issues raised on former PLC-7 meetings

References: -LMS: + all contributors

- Update with new references, remove not used references

List of acronyms: LMS

- Update as appropriated

Annual reporting formats (annex 2): BNI (Sasha), [Pekka and Secretariat] – input all PLC IG/reporters – *updated annex have been received from Sasha*

Have been updated by Sasha - accomplished

- Should be check carefully and updated reflecting new developments/an reporting obligations
- Important that CP provides comment where they have had questions/they find it is not clear enough what to do
- *Be very clear on e.g. use of unit*

Periodical reporting formats (annex 3): -BNI (Sasha) and Pekka – input all PLC IG/reporters

Have been updated by Sasha - accomplished

- Same as for annex 2
- *Be very clear on what can be reported aggregated*

Annex 4 using PLC WEB-application: -BNI (Sasha)

- *No revision needed*

Annex 5: Example of instructions to personnel carrying out the sampling: Susanne

- To be checked
- Do we need similar guidance regarding measuring discharge, stage/flow?
- *To be discuss at next meeting*

Annex 6: Reporting industrial point source with reference to IE directive and PRTR Regulation

- *The meeting decided to delete it*

Annex 7: EMEP assessment on atmospheric TN and heavy metals deposition: EMEP/LMS

- Updates needed – there have been changes since PLC6 (to which it was produced)
- We should ask EMEP to updated and also include some few paragraphs on how they make source receptor and main pathway assessment for PLC
- *We will make a shorter (updated version), refer to extended EMEP report with the scientific details, and ask EMEP for checking the content*

Please check from former PLC-7 meeting on issues to be taken into account related to updating the PLC guidelines in the chapters you are revising.

Annex 5 Next PLC meeting

PLC-8 IG 3-2021 meeting 08-10.03.2021 (online)

PRESSURE meeting is in the week 12/04-16/04-2021

Deadline for submission to PRESSURE is 22 or 23 March 2021

- Status reporting and verification of annual 2019 data - including spatial data
- Issues related to the upcoming periodic reporting 2021: national monitoring activities
- PLC-7 products/issues:
 - PLC- 7 Report on main sources and pathways of waterborne nutrient inputs to the Baltic Sea
 - PLC-7 Evaluation of effectiveness of measures report
 - PLC-7 Background information
 - PLC-7 Methodology report
 - PLC-7 executive summary
- Intercalibration activities – first results from the intercalibration
- Status on the revision of the report on statistical methodologies
- PLC guidelines: revised chapters, and discussion of proposals of changes for other chapters
- Preparation for a workshop with PLC involvement
- Any issues related to update of HELCOM BSAP