



Document title	Project Proposal for the Seventh Baltic Sea Pollution Load Compilation (PLC-7)
Code	8-5
Category	CMNT
Agenda Item	8 - Pollution load compilation
Submission date	4.10.2016
Submitted by	RedCore DG
Reference	

Background

HELCOM HOD 49-2016 decided that the next PLC assessment (PLC-7) will be made in 2019 based on the monitoring data from 2017, in order to serve those Contracting Parties that are EU Member States for their next generation river basin management plans under WFD in 2019/2020. HOD 50-2016 agreed on the Concept Note for the Seventh Baltic Sea Pollution Load Compilation (PLC-7) including its objectives, tasks and final products and requested the Pressure Group to develop the PLC-7 project proposal for consideration by HOD 51-2016.

PRESSURE 4-2016 requested RedCore DG to elaborate a project proposal for the Seventh Pollution Load Compilation.

The document submitted for the consideration by PRESSURE 5-2016 contains a project proposal for the PLC-7 which integrates the description of the main objectives and deliverables in accordance with the Concept Note approved by HOD 50-2016. The project proposal also contains a detailed description of the work packages and tasks in connection with the deliverables.

A specific section of the project proposal is dedicated to organization of the project, describing the role of the project manager, project team and involvement of RedCore DG and Pressure Group into the project implementation.

The document also contains an implementation plan for the project and working procedure.

Action requested

The Meeting is invited to:

- consider thoroughly the project proposal and provide a feedback regarding the project structure and its effectiveness to achieve the project objectives and produce the project outcomes;
- discuss the organization of the project and agree on the roles of the different HELCOM bodies involved in the project implementation, as well as project team members and project manager;
- review the project implementation plan against national and HELCOM needs of the project deliverables;
- endorse the project proposal for submission to HELCOM HOD 51-2016 for final adoption.

Overall contents of the Seventh Baltic Sea Pollution Load Compilation (PLC-7) project

The PLC-project will produce the following outcomes:

1. ESTABLISHING DATASETS AND UPDATE OF MAI AND CART

- a) The PLC-assessment data set based on annual and periodic reports of water- and airborne inputs of nutrients and selected hazardous substances from 1995 to 2017 will be available in 2019.
- b) The updated HELCOM Core Pressure Indicator on nutrient inputs (update of MAI fulfilment follow-up) with data from 1995 to 2017 [available in 2019].
- c) Updated scientific report on follow up progress toward national reduction targets for nutrients - CART follow-up assessment with data from 1995 to 2017 [available in 2019].

2. PERIODIC ASSESSMENT

- d) A thematic report on sources of nutrients [published in 2020].
- e) A thematic report on effectiveness of measures to reduce nutrients inputs to the Baltic Sea [published in 2020].
- f) Executive summary and policy message (including on CART) of Seventh Baltic Sea Pollution Load Compilation (PLC-7) will be published in [2020].

3. METHODOLOGIES

- g) Intercalibration on heavy metals and nutrients between at least 1-2 laboratories from each Contracting Party conducting chemical analysis (a report to be prepared in [2018]).
- h) Updated PLC guidelines on nutrients and selected heavy metals, including updated statistical methodologies used for PLC and MAI/CART assessments, will be published in [2018].

The PLC-7 project will be based on annual water- and airborne data on nitrogen, phosphorus and selected heavy metals from 1995-2017, periodical data from 2017 supplied with former reported periodical data from e.g. 2006 and 2014. Further background information and data on effectiveness of measures on nitrogen and phosphorus inputs will be collected and included in the assessment. The assessment will use the new PLC database (produced by HELCOM PLUS project) for reporting and quality assuring data. The tools developed by the HELCOM MAI-CART OPER project will be used to complete the assessment data set, make normalizations, trend and other statistical analysis and the evaluation of fulfilment of MAI and CART. Standard tables and figures for the updated Core Pressure Indicator on nutrient inputs, the updated scientific report on CART follow-up assessment and for Seventh Baltic Sea Pollution Load Compilation (PLC-7) will also be produced using the tools developed by HELCOM MAI-CART OPER project.

The PLC-7 project will consist of the three thematic work packages (WP) and WPO - project management. The thematic work packages will include:

WPO *Project management*

The management of the project includes the overall coordination of project implementation, communication with an assistance by the Secretariat with project partners and participants, planning project activities and follow-up their implementation. The work package implies organization of meetings with assistance of the Secretariat and other project partners, as well as will support preparation of a workshop on technical and methodological solutions to follow-up of MAI/CART.

The appointed project manager will follow the [HELCOM risk management procedure](#).

WP1 *Establishing datasets and update of MAI and CART*

1.1 Contracting Parties will organize monitoring and compilation of national annual and periodical data in 2017 according to the relevant HELCOM Recommendations and Guidelines. Contracting Parties will report national annual and periodic data using PLC reporting WEB application assuring quality control of the reported data and their insertion into the PLC database. The annual and periodic data 2017 will be reported by 31 October and 31 December 2018, respectively and according to the established procedure (Procedures for releasing the reported PLC water data adopted by HOD 50-2016). Contracting Parties will also provide background information including data on effects of measures.

1.2 Reporting templates (with prefilled metadata) for PLC-7 (2017) will be prepared and update of the PLC database will be made. Other activities include: carrying out manual data quality assurance, follow-up with Contracting Parties on reporting and missing data, preparing datasets for RedCore DG and PLC-7 project team to complete datasets taking into account missing data and data inconsistency. HELCOM procedure for releasing the reported PLC water data will be followed. Selected standard figures will be provided to PLC-7 project meetings upon request. Further, calculations and assessment of emissions of nitrogen as source receptor matrix [2017] and of normalized deposition (divided per country by basin including shipping on Baltic Sea and North Sea, inputs from all individual EU countries and other significant contributors of nitrogen deposition on the Baltic Sea) will be made. PLC Water Data Manager and MSC-W EMEP centre acting as HELCOM PLC-Air Centre will carry out the work.

1.3 Establishing the periodic assessment data set as filling in data gaps, removing inconsistent data and approval of the assessment data set by Contracting Parties is included in the work package. Further, normalization, trend analysis and other statistical analysis and the evaluation of fulfilling MAI and CART applying the MAI CART OPER tools is included together with the preparing of updated MAI and CART reports. The normalization and statistical data processing might be repeated in case the data set are updated/corrected during the assessment process. Further preparing periodic data for source apportionment and big rivers.

WP2 *Periodic assessment*

The periodic assessment is focused on 3 main themes: source apportionment, effectiveness of measures and input of hazardous substances.

2.1 A thematic report on sources of nutrients (source apportionment) will be based on the periodic reports by countries on dissolved, industrial and WWTP point sources in accordance with the PLC Guideline. Also the assessment of input by selected (at least 7) big rivers will be carried out.

2.2 A thematic report on effectiveness of measures to reduce nutrients inputs to the Baltic Sea will be based on information provided by the countries as replies to a questionnaire that will be prepared by the project. The report will also utilize outcomes of the workshop(s) and other reporting by countries (e.g. programmes of measures, etc.).

2.3 A thematic report on input of hazardous substances will be based on the periodic reports by countries on inputs if selected hazardous substances according to the PLC Guideline. The assessment will also utilize the results of questionnaires utilizing data obtained by national monitoring and screening campaigns.

2.4 Main outcomes of the PLC-7 assessment will be summarized in the main PLC-7 report accompanied by an executive summary, with focus on policy messages on the progress in implementation of the HELCOM nutrient reduction scheme and the themes of thematic reports. The work on outlining the content of the report will start along with the work on other work packages.

The thematic assessments will be prepared by [2020].

WP3 Methodologies

3.1 In order to improve quality and intercomparability of PLC products, regular intercalibration between laboratories conducting chemical analysis are necessary. The latest intercalibration was conducted in 2013 on nutrients (nitrogen and phosphorus including fractions of these) and six heavy metals (Cd, Cr, Cu, Hg, Ni and Pb) for river and waste water samples with participation of 18 laboratories. The PLC-7 project will perform intercalibration with at least one laboratory from each Contracting Party participating, but altogether twenty laboratories are budgeted. The intercalibration will be made for heavy metals (Cd, Cr, Cu, Hg, Ni, Pb and Zn) and for total nutrients and nutrient fractions (total nitrogen, ammonia-N, nitrite-nitrate-N, dissolved and total and phosphorus) from river and point source (waste water) samples.

3.2 HELCOM PLC Guidelines was adopted for publication by HOD 47-2015. The Guidelines contains description of assessment methodologies as well as data reporting format. The HELCOM PLC Guidelines (2015) needs to be updated utilizing the experienced gained by the PLC-6 project. The following methodologies will be adjusted/updated by the PLC-7 project:

- statistical methods;
- evaluation of effects of measures;
- calculation of transboundary input;
- accounting extra reduction;
- adjusting CART evaluation if requested as a result of the MAI/CART workshop scheduled for February 2017;
- definitions of source apportionment and retention.

An update of the statistical methods will include new algorithms for trend analysis and modernized approaches to flow normalization and evaluation of uncertainties. Altogether the following statistical methodologies will be revised/added:

- detection of break point in time series
- testing for non-linear trend – and changes
- flow normalization in case of trend in flow
- estimates of uncertainties on e.g. monitored, unmonitored and total inputs country pr. basin and on the CART evaluation
- other necessary adjustments of the statistical methods
- adjusting methodology for CART fulfilment evaluation as a result of MAI/CART workshop in February 2017 (MAI CART OPER project) and from a further workshop.

Descriptions of all the revised methodologies will be compiled in the updated version of the PLC Guidelines. PRESSURE 4-2016 noted that it will not be possible to develop a common methodology or fully harmonized source apportionment approach for the PLC-7 assessment due to the short preparation time, but the possibilities for further harmonisation will be investigated for the PLC-8 assessment.

Organization of the project

The HELCOM PLC-7 project will be implemented by a project implementation group consisting of participants from all Contracting Parties (PLC-7 Project Group). Members of the PLC-7 project group, to be nominated by the Contracting Parties, will guide and support the work of the project, attend project meetings and workshops, and actively contribute into, *inter alia*, the collection of background information, revising guidelines, and writing relevant chapters of the PLC reports. The Contracting Parties are responsible for national data reporting. The project will be coordinated by a project manager.

RedCore DG will provide methodological support for the project implementation. The group will assist with quality assurance and approval of PLC assessment dataset, scientific advises, and quality assurance of the

assessment report. HELCOM Secretariat will assist with the finalization of reports (design, linguistic check, etc.).

The progress in implementation of the PLC-7 will be regularly discussed by Pressure Group to assure that the final products correspond to the demands of the countries and HELCOM agreements. The PLC-7 project implementation group will meet regularly 2-3 times per year (2-3 days/meeting) during 2017-2020. The Contracting Parties will be invited to host project meetings.

Project implementation plan

The PLC-7 project will be launched in January 2017 and finalized in 2020 according to the project implementation plan (Annex 2). National monitoring programmes providing data for the PLC-7 assessment are to start in 2017, therefore a preparatory work has already started in 2016 within the ongoing PLC-6 project without additional resources (clarify needs for (minor) updates in the PLC guidelines on parameters to be monitored and methodologies, subject to approval by HOD 51-2016).

Annex 1 Work package descriptions and division of tasks

Work package	Task	Specification	Responsible	Deliverables
WP0: Project management	0.1 Overall coordination, communication, implementation and follow-up	<ul style="list-style-type: none"> - regular reporting of the progress to Pressure WG - planning project activities - follow-up their implementation. 	Project manager	Progress reports to Pressure group meetings. Outcomes of the project meetings. Outcomes of workshops
	0.2 Preparations for meetings and workshops	Technical and methodological aspects of project implementation. With assistance from the Secretariat		2 workshops will be organized 2-3 project meetings per year during 2017-2020
WP1: Establishing datasets and update of MAI and CART	1.1 Monitoring and compilation of national annual and periodical data	According to the PLC Guidelines and the timelines of HELCOM procedure for releasing the reported PLC water data.	Contracting Parties	
	1.2 Reporting of quality assured national annual and periodic data	<p>The tasks for the PLC Water Data Manager related to the PLC-7 assessment</p> <p>The tasks for the WSC-W EMEP centre as PLC Air Centre related to the PLC-7 assessment</p>	PLC-Water Data Centre PLC-Air Data Centre	<p>The PLC database updated with the verified periodical data 2017 reported by countries</p> <p>Source receptor matrixes (2017) and country pr. basin deposition for all HELCOM CP's, other EU countries and other major sources on nitrogen deposition based on normalized data 1995-2017. Reports and data on airborne inputs selected hazardous substances for the period 1995-2017</p>
	1.3 Establishing the periodic assessment data set	<p>Verification of the periodic PLC data 1995-2017 for outliers and suspicious data, filling-in data gaps, establishing waterborne input country pr. sub-basin taking into account transboundary inputs and retention. Getting approval from national experts in Contacting Parties</p> <p>Flow-normalisation of waterborne inputs, checking for trends in riverine, direct, waterborne, airborne and total inputs country pr. basin. Tables and figures, updating text.</p> <p>Estimation of total inputs country pr. basin including, uncertainty, evaluation of CART fulfilment, produce tables and figures, elaborate scientific report</p>		<p>The periodic assessment dataset established and approved by the national experts.</p> <p>The updated HELCOM Core Pressure Indicator on nutrient inputs.</p> <p>The updated scientific report on follow up progress toward national reduction targets for nutrients - CART follow-up assessment</p>

WP2: Periodic assessment	2.1 Assessment of sources of nutrients	Elaboration of source apportionment, assessing sources, produce figures and tables, preparing text for PLC-7 assessment. Compilation of nutrient inputs from at least seven big rivers, assess importance for inputs to the Baltic Sea, an asses trend and changes in inputs		Thematic report on source apportionment as a part of PLC-7 assessment report, including results of assessing nutrient inputs from at least seven big rivers
	2.2 Assessment of the effectiveness of measures	Compilation of data on measures to reduce input of nutrients implemented in the assessment period from all countries and reduction achieved through these measures. Compilation of information on measures foreseen by the countries to reach the reduction targets by 2021 and anticipated reduction through each of them. Assessment of the effectiveness of measures throughout the BS region,	CPs	Thematic report on effectiveness of measures to reduce nutrients inputs to the Baltic Sea [as a part of PLC-7 assessment report]
	2.3 Assessment of inputs of selected hazardous substances	Evaluate comparability of the data on hazardous substances concentrations between countries and years. Calculate inputs of HZS to the Baltic Sea, produce figures and tables, preparing text for PLC-7 assessment.		Thematic report on input of selected hazardous substances into the Baltic Sea [as a part of PLC-7 assessment report]
	2.4 Compilation of the main report	Main outcomes of the PLC-7 assessment will be synthetized in the main PLC-7 report with focus on policy messages on the progress in implementation of the HELCOM nutrient reduction scheme and the themes of thematic reports		Main report of Seventh Baltic Sea Pollution Load Compilation
WP3: Methodologies	3.1 Intercalibration on heavy metals and nutrients	Intercalibration with at least one laboratory from each Contracting Party. The intercalibration will be made for heavy metals (Cd, Cr, Cu, Hg, Ni, Pb and Zn) from river and point source samples. Intercalibration for total nutrients and nutrient fractions (total nitrogen, ammonia-N, nitrite-nitrate-N, dissolved and total and phosphorus) will be carried out for at least one laboratory from each Contracting Party.		The intercalibration report covering at least 1 and up to 2 laboratories pr. Contracting Party
	3.2 Updated PLC guidelines and statistic report	The following methodologies are updated: -statistical method for trend analysis including break points; testing for non-linear trend – and changes, flow normalization in case of trend in flow, estimates of uncertainties -evaluation of effects of measures;		Updated HELCOM PLC Guideline, including an updated report with statistical methods for PLC and MAI/CART assessments

		<ul style="list-style-type: none">-calculation of transboundary input;-accounting extra reduction;- adjusting CART evaluation if requested as a result of the MAI/CART workshop scheduled for February 2017-definitions of source apportionment and retention.		
--	--	---	--	--

Annex 2 Project implementation plan

ID	Task Mode	Task Name	Duration	Start	Finish	Gantt Chart																											
						f 1, 2016	Half 2, 2016	Half 1, 2017	Half 2, 2017	Half 1, 2018	Half 2, 2018	Half 1, 2019	Half 2, 2019	Half 1, 2020	Half 2, 2020																		
						M	M	J	S	N	J	M	M	J	S	N	J	M	M	J	S	N	J	M	M	J	S	N					
19	1	Project management: overall coordination, communication, implementation and follow-up	1045 days	Sun 01-01-17	Thu 31-12-20	[Gantt bar from Sun 01-01-17 to Thu 31-12-20]																											
20	2	Project management: Preparation for meetings and workshops	1131 days	Thu 01-09-16	Thu 31-12-20	[Gantt bar from Thu 01-09-16 to Thu 31-12-20]																											
21	3	PLC-7 WS1: MAI/CART workshop	2 days	Mon 06-03-17	Tue 07-03-17	[Gantt bar from Mon 06-03-17 to Tue 07-03-17]																											
22	4	PLC-7 WS2: PLC-7 assessment results and methodology	2 days	Mon 16-12-19	Tue 17-12-19	[Gantt bar from Mon 16-12-19 to Tue 17-12-19]																											
6	5	National data monitoring	262 days	Sun 01-01-17	Sun 31-12-17	[Gantt bar from Sun 01-01-17 to Sun 31-12-17]																											
7	6	National data collection, compilation and quality assurance	218 days	Mon 01-01-18	Wed 31-10-18	[Gantt bar from Mon 01-01-18 to Wed 31-10-18]																											
8	7	National data reporting	87 days	Sat 01-09-18	Mon 31-12-18	[Gantt bar from Sat 01-09-18 to Mon 31-12-18]																											
9	8	National reporting of background information, effects of measures and used methodologies	109 days	Mon 01-10-18	Thu 28-02-19	[Gantt bar from Mon 01-10-18 to Thu 28-02-19]																											
10	9	Data manager: preparing templates, follow up reporting	132 days	Wed 01-08-18	Thu 31-01-19	[Gantt bar from Wed 01-08-18 to Thu 31-01-19]																											
11	10	Data manager issues: quality assurance, preparing PLC-7 dataset, standard graphics	131 days	Sat 01-12-18	Fri 31-05-19	[Gantt bar from Sat 01-12-18 to Fri 31-05-19]																											
23	11	Preparing data assessment and reporting on atmospheric deposition incl. source receptor matrixes and deposition country pr. Basin (EMEP)	217 days	Fri 01-02-19	Sat 30-11-19	[Gantt bar from Fri 01-02-19 to Sat 30-11-19]																											
12	12	Establishing data assessments: verification, preparation approval by CP's	54 days	Fri 01-03-19	Wed 15-05-19	[Gantt bar from Fri 01-03-19 to Wed 15-05-19]																											
13	13	Preparation of Baltic Sea Fact Sheet on annual waterborne N and P inputs to Baltic Sea	33 days	Thu 16-05-19	Sun 30-06-19	[Gantt bar from Thu 16-05-19 to Sun 30-06-19]																											
25	14	Preparation of Baltic Sea Fact Sheet on annual airborne N and P inputs to Baltic Sea	77 days	Sun 01-09-19	Sun 15-12-19	[Gantt bar from Sun 01-09-19 to Sun 15-12-19]																											
14	15	Data assessments: normalization statistical analysis, inputs country pr. basin, evaluation of MAI and CART fulfilment, standard plots and tables	88 days	Sat 15-06-19	Tue 15-10-19	[Gantt bar from Sat 15-06-19 to Tue 15-10-19]																											
15	16	Preparing and updating MAI and CART follow-up assessment	45 days	Mon 16-09-19	Fri 15-11-19	[Gantt bar from Mon 16-09-19 to Fri 15-11-19]																											
24	17	Elaboration of source apportionment, assessment of inputs from big rivers and a thematic report	130 days	Fri 01-11-19	Thu 30-04-20	[Gantt bar from Fri 01-11-19 to Thu 30-04-20]																											
26	18	Assessment of measures data and evaluating their effect on nutrient inputs and make a thematic reporting	130 days	Wed 01-05-19	Tue 29-10-19	[Gantt bar from Wed 01-05-19 to Tue 29-10-19]																											
27	19	Assessment of inputs of selected hazardous substances and thematic a report	153 days	Tue 01-10-19	Thu 30-04-20	[Gantt bar from Tue 01-10-19 to Thu 30-04-20]																											
16	20	PLC-7 report elaboration of draft and final version of chapters	196 days	Sat 01-06-19	Fri 28-02-20	[Gantt bar from Sat 01-06-19 to Fri 28-02-20]																											
17	21	PLC-7 report: approval and publication	88 days	Sun 01-03-20	Tue 30-06-20	[Gantt bar from Sun 01-03-20 to Tue 30-06-20]																											
18	22	Preparation of PLC-7 Executive summary and CART policy message	189 days	Wed 01-04-20	Mon 21-12-20	[Gantt bar from Wed 01-04-20 to Mon 21-12-20]																											
3	23	Intercalibration/intercomparison between laboratories on nutrients and selected heavy metals, and elaborate report	197 days	Sun 01-10-17	Sat 30-06-18	[Gantt bar from Sun 01-10-17 to Sat 30-06-18]																											
1	24	Updating methodology related to data collection	43 days	Thu 01-09-16	Mon 31-10-16	[Gantt bar from Thu 01-09-16 to Mon 31-10-16]																											
2	25	Updating methodology related to data assessment	262 days	Sun 01-01-17	Sun 31-12-17	[Gantt bar from Sun 01-01-17 to Sun 31-12-17]																											
4	26	Updating PLC guidelines related to d monitoring and data collection	67 days	Sat 01-10-16	Sat 31-12-16	[Gantt bar from Sat 01-10-16 to Sat 31-12-16]																											
5	27	Updating PLC-6 guideline related to data assessment, and updating report with statistical methods for PLC and MAI/CART assessment	241 days	Mon 01-05-17	Sat 31-03-18	[Gantt bar from Mon 01-05-17 to Sat 31-03-18]																											