6.4 Annex 4: Reporting format for the quantification and reporting obligations

Annex 4.1 Reporting format for the quantification and reporting obligations on an annual basis

Annex 4.2 REPORTING FORMAT FOR THE QUANTIFICATION AND REPORTING OBLIGATIONS ON A PERIODICAL BASIS

The 5th periodic pollution load compilation to the Baltic Sea will be carried out on the data of 2006. PLC-5 guidelines outline the data to be collected and also include reporting instructions for the collected data. The guidelines should be adopted in 2005 in order to enable the Contracting Parties to organize the national data collection. Data reporting will be carried out by the national experts of the PLC-5 Project Group.
This part of the reporting instructions consists of the source-orientated approach of the periodic data reporting. Annex 4.1 comprises the instructions and formats for annual data reporting.

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Reporting instructions also include data reporting sheets and data compilation tables. They have been established separately for each Contracting as **COUNTRY_CODE_PERIODIC_REPORTING_ 2006.XLS** and is of Excel format. For Denmark the file is: **DK_ PERIODIC_REPORTING_ 2006.XLS.** This data entry file of Denmark works as an example, but similar files with the same structure will be submitted to each contracting party. The files are of Excel format. The needed software and version is MS Excel 2000. Data of PLC_5 should be entered to the files and sent to data consultant by the end of November 2007.

GENERAL SETTINGS

Some general settings should be used when entering the data into the data entry tables.

1) LENGTH OF FORMAT

Length of the format often seems to be an insignificant matter, when entering the data. However, if the existing data will be compared with the delivered new data or if data must be recoded based on the existing list of subcatchments or list of parameters the length of the format becomes significant. For example, when using a subregion_code GUF, it should consist of exactly 3 characters. "GUF" doesn't equal with "GUF_"(where _ remarks an empty space) or "SCFI00035" is not the same as "SCFI 00035" (an empty space after SCFI).

Furthermore, formulas of the data compilation tables are based on correct lengths of format. Wrong format will result in aan exclusion of the data in the compilation tables. Therefore, when entering any variables with fixed format, e.g. the subcatchment or point source code, respect the length of the format, e.g. (CHAR(9)) = 9 characters SCDK00001, (CHAR(7)) = 7 characters MDE0005. The length of the format can be found in the comment box of each data entry table.

2) DATE

Date should be in format dd.mm.yyyy (01.01.2006). This can be obtained by choosing *'FORMAT'; 'CELL'; 'USER-DEFINED*'; and by typing in the 'TYPE box' dd.mm.yyyy

(If it happens that your date is 4 years ahead, then change your excel settings in *TOOLS, SETTINGS, CALCULATIONS*, and there REMOVE 'the tick in datum 1904')

3) SUPERSCRIPTS
When using the superscripts e.g. m³/s, character tables should be used
Type in the ASCII-code with numeric keys (right side) when holding ALT-key down
e.g. ALT+0179, then you get the character **' ³ '**.

DON'T CHANGE THE FONT TYPE IN ORDER TO GET SUPER SCRIPTS OR DATE FORMAT!

4) FONTS
When entering the data kindly use the following general settings:
Font: Areal; Font size: 10
Decimal symbol: '.' (full stop) NOT a ',' (comma)

Use capital letters (ABCD…) except for value units (t/a or m³/s)

5) FORMATS

Each reporting sheet has a comment box, with a short data entry instruction. One can hide or make the comment boxes visible by choosing TOOLS*, CUSTOMIZE* and then tick the box *VALIDATION.* Then a new menu will appear in Excel sheet. In the new menu there is a hide/Show option to make all comments visible / invisible. There is no need to shrink the comment boxes.

AREAL DEFINITIONS

Areal definitions consist of
a) Subcatchment definitions for individually monitored rivers, aggregated monitored rivers, unmonitored parts of monitored rivers, unmonitored areas and sea areas;
b) Station definitions for flow data of individually monitored rivers; and
c) Point source definitions for aggregated point sources (by subcatchment) or individually reported point sources (by plant)

SUBCATCHMENT DEFINITIONS

Subcatchments include individually monitored rivers, aggregated monitored rivers by country and subregion, unmonitored parts of monitored rivers (only for Estonia, Latvia, Lithuania and Poland) and unmonitored areas, and sea areas by country and subregion. The aggregated monitored rivers include small rivers, which basically are monitored individually. However, in some cases they are too small to report, for example, riverine load apportionment or diffuse sources, individually. As the same subcatchment definitions should be used throughout the reporting, i.e. reporting loads, losses, retention, etc. Therefore, the small subcatrchments have been aggregated. The aggregated monitored rivers have been established for each country.

All subcatchments have been coded and named in the data entry file **1 SUBCATCHMENT** sheet.

Subcatchment_code (FORMAT: CHAR(9)) defines a specific code for each subcatchment

Subcatchment_name (FORMAT: VARCHAR(50)) defines a name for each subcatchment

Control_code (FORMAT: CHAR(1)) for individually monitored rivers (subcatchments) or aggregated rivers (subcatchments) is = 1, unmonitored parts of monitored rivers (subcatchments) =2, unmonitored areas = 3 and sea area = 4
When data of subcatchments will be reported, the existing codes (from 1 to 4) should be used.

Subcatchment_status (FORMAT:CHAR(1)) defines if a subcatchment is part of a river catchment within one country = C; or if a subcatchment is part of a transboudary river which crosses national borders = T.

Country_code (FORMAT: CHAR(2)) specifies the country of each subcatchment
They are: Germany = DE, Denmark = DK, Estonia = EE, Finland = FI, Lithuania = LT, Latvia = LV, Poland = PL, Russia = RU and Sweden = SE

Subregion_code (FORMAT: CHAR(3)) defines a subregion or a basin of each subcatchment. They are: Bothnian Bay = BOB, Bothnian Sea = BOS, Archipelago Sea = ARC, Gulf of Finland = GUF, Gulf of Riga = GUR, Baltic Proper = BAP, Western Baltic = WEB, The Sound = SOU, Kattegat = KAT (and Skagerak = SKA).

National_subcatchment_code (FORMAT: VARCHAR(25)) can be used to link the data from the national database to the reporting table.

Start_date (DATE(10)); dd.mm.yyyy, defines the first day of the year when the subcatchment definition is valid (determined and in use), For the year 2006 it is 01.01.2006

End_date (DATE(10)); dd.mm.yyyy, defines the last day of the year until the subcatchment definition is valid (determined and in use) For the year 2006 it is 31.12.2006

Subcatchment_type (FORMAT: CHAR(1)) specifies the type of subcatchment: R = river catchment (big individually monitored river), L = Land (Unmonitored area) A = Aggregated (aggregated small monitored river) and S = Sea area.

Nr_of_areas (FORMAT:INTEGER(3)); defines the number of subcatchments or coastal areas within a subcatchment as it can consist of several areas within a subregion. This INFORMATION is important especially when reporting aggreted subcatchments

Control_area (FORMAT: NUMERIC(8(.1)) defines the drainage area for an individual or aggregated subcatchment in km^2 within a country. The total drainage area of a (transboundary) river will be reported in table **2 STATION** as **Station_control_area**. The reported surface areas, i.e., **Control_area** here and **Station_control_area** in table 2 STATION will be used for calculations of the area specific loads.

Existing subcatchments have been listed in the **1 SUBCATCHMENT** of **COUNTRY_CODE_PERIODIC_ REPORTING_ 2006.XLS** file. Missing or wrong information can be amended or corrected in the table, if necessary, but should be clearly marked.

STATION DEFINITIONS

Flow data of an individual subcatchment should be reported by using a **station_code**. Hydrological and chemical stations have been established for each individually monitored subcatchment. All established stations used in the PLC database have been listed in the **2 STATION** sheet. When entering the data the station concerned can be chosen from the list. To ease the procedure the respective subcatchment_code and subcatchment_name have also been added as variables.

Station_code (FORMAT: CHAR(7)) is a code for hydrological or chemical station by country C = Chemical , H = Hydrological and country code (char(2)), e.g. CPL0001, CPL0002, HPL0001, HPL0002, etc.
Only flow of individual rivers will be reported in 2006 and therefore, only hydrological stations will be used. Though concentrations will not be reported in PLC-5, both chemical station codes have been listed here as in some cases (where hydrological and chemical stations have different position) the flow has been extrapolated to the chemical station.

Station_name FORMAT: VARCHAR(25) describes the name of a hydrological or chemical station.

Subcatchment_code (FORMAT: CHAR(9)) defines a specific code for each subcatchment where a station belongs.

Subcatchment_name (FORMAT: VARCHAR(50)) defines a name for each subcatchment where a station is located.

River_code FORMAT: (CHAR(5)) defines the code for a river. One river can have two (hydrological and chemical) or more stations (if the location of a station has been changed).

National_station_code (FORMAT: VARCHAR(10)) defines a national individual code for station and can be used to ease the data extract from the national database.

Country_code (FORMAT: CHAR(2)) specifies the country of each station
They are: Germany = DE, Denmark = DK, Estonia = EE, Finland = FI, Lithuania = LT, Latvia = LV, Poland = PL, Russia = RU and Sweden = SE

Subregion_code (FORMAT: CHAR(3)) defines a subregion of each station. They are: Bothnian Bay = BOB, Bothnian Sea = BOS, Archipelago Sea = ARC, Gulf of Finland = GUF, Gulf of Riga = GUR, Baltic Proper = BAP, Western Baltic = WEB, The Sound = SOU, Kattegat = KAT (and Skagerak = SKA).

Station_type FORMAT: CHAR(1) defines the type of a station which can be either C =Chemical, H = Hydrological

St_lat FORMAT: NUMERIC(7,(4)), dd.ddddd; defines the latitude of a station in decimal degrees

St_lon: FORMAT: NUMERIC(7,(4)), dd.ddddd; defines the longitude of a station in decimal degrees

Station_control_area FORMAT: NUMERIC(8(.1)) refers to the surface area which of a hydrographic or chemical station controls (can be several subcatchments in several countries) in km2.
NOTE! The surface areas will be used for calculating area specific loads and is essential to report!
Surface areas of unmonitored and coastal areas will be reported in 1 SUBCATCHMENT table.

Wrong or incomplete information can be corrected and /or amended in **2 STATION.**

POINT SOURCE DEFINITIONS

The PLC-5 project group agreed on that point source data will be reported as aggregated or individually on a voluntary basis. Furthermore, the group requested for the data consultant to establish data compilation tables, which sum up the data during the entry procedure. Such data compilation tables have been created. Due to these changes the definitions of point sources and the structure of the tables have been modified accordingly. There is no linking table between point source and subcatchment and several variables have been moved to data tables. This will result in some duplication in the data entry, but will hopefully ease the procedure.

Point sources have three categories; Municipal wastewater treatment plants, Industries and Fish farms.

Based on the three categories total loads and flows of point sources will further be aggregated into catchments of individually monitored rivers, aggregated monitored rivers, unmonitored areas (and unmonitored parts of monitored rivers), and direct discharges by country and subregion.

These catchments have been established in the table **3 POINT SOURCE** for each category (MWWTP, Industry and fish farm). Also the existing individual point sources have been listed there. Either the catchments or individual point sources should be used in order to enter the data.

For aggregated point sources no information on plant_code or plant_name should be entered but instead **subcatchment_code** and **subcatchment_name, country_code and subregion_code**.

In case the data will be reported individually then also the basic information, including **subcatchment_code** and **subcatchment_name, country_code and subregion_code** and individual **plant_code** and **plant_name**, should be used for entry. The existing **plant_code**s and **plant_name**s have already been listed. New point sources can be added or existing ones modified in the **3 POINT SOURCE**. The modifications should be clearly indicated.

The basic information of the table **3 POINT_SOURCE** is:

Plant_code (FORMAT: CHAR(7)) defines the respective point source. Should be used only for individually reported point sources. For aggregated point sources plant_code should be left empty (see above)

Plant_name (FORMAT: VARCHAR(50) defines the name of a point source, only of individually reported point sources.

Subcatchment_code (FORMAT: CHAR(9) defines the subcatchment where a point source or aggregated point sources belong to.

Subcatchment_name (FORMAT: VARCHAR(50)) defines a name of a subcatchment where point source(s) is located.

National_pointsource_code (FORMAT: VARCHAR(10)) can be used to link the data from the national database to the reporting table.

Country_code (FORMAT: CHAR(2)) specifies the country of each subcatchment
They are: Germany = DE, Denmark = DK, Estonia = EE, Finland = FI, Lithuania = LT, Latvia = LV, Poland = PL, Russia = RU and Sweden = SE

Subregion_code (FORMAT: CHAR(3)) defines a subregion or a basin of each subcatchment. They are: Bothnian Bay = BOB, Bothnian Sea = BOS, Archipelago Sea = ARC, Gulf of Finland = GUF, Gulf of Riga = GUR, Baltic Proper = BAP, Western Baltic = WEB, The Sound = SOU, Kattegat = KAT (and Skagerak = SKA).

Plant_type FORMAT: CHAR(1); defines the type of plant or plant category I = Industry, M = Municipal wastewater treatment plant, F = Fish farm

Ps_lat (FORMAT: NUMERIC(7,(4)); dd.ddddd, defines the latitude of a point source outlet in decimal degrees. **NOTE: ONLY COORDINATES OF INDIVIDUAL PLANTS ARE REPORTED**

Ps_lon (FORMAT: NUMERIC(7,(4)); dd.ddddd, defines the longitude of a point source outlet in decimal degrees. **NOTE: ONLY COORDINATES OF INDIVIDUAL PLANTS ARE REPORTED**

Start_date DATE(10); dd.mm.yyyy, defines the first day of the year when a point source is valid (determined and in use), For the year 2006 it is 01.01.2006. **If the date is wrong in the 3 POINT_SOURCE table it should be corrected.**

End_date DATE(10); dd.mm.yyyy, defines the last day of the year until a point source is valid (determined and in use) For the year 2006 it is 31.12.2006. **If the date is wrong in the 3 POINT_SOURCE table it should be corrected.**

LINKS TO TABLES OF STATIONS - SUBCATCHMENTS AND POINT SOURCES - SUBCATCHMENTS

Due to modifications in the database, the link tables between the STATIONS AND SUBCATCHMENTS (**4 SUBCATCHMENT_STATION**) and THE POINT SOURCES and SUBCATCHMENTS (**5 POINT_SOURCE_AREA**), respectively, have been removed and replaced by adding SUBCATCHMENT_CODE and SUBCATCHMENT_NAME variables in the **2 STATION** table and SUBCATCHMENT_CODE and SUBCATCHMENT_NAME variables in the **3 POINT SOURCE** table.

DATA TO BE REPORTED

An overview of the data, which should be reported for the PLC-5 have been presented in table 1.
The table describes sources and reporting categories, what type of information to be collected and where to find detailed instructions.

Table 1. An overview of the data for the 5th Pollution Load Compilation.

GENERAL VIEW OF DATA REPORTING FOR THE 5th POLLUTION LOAD COMPÅILATION						
SOURCE	**REPORTING**	**REFERENCE IN GUIDELINES**	**FLOW**	**LOAD**	**ADDITIONAL INFORMATION**	**CALC. ESTIMATION METHODS, ETC.**
MONITORED RIVERS	INDIVIDUALLY OR AS AGGREGATED	Chapter 2.1.1.4 pp. 17-18	X	X	Surface areas	X
UNMONITORED PART OF MONITORED RIVERS (*	INDIVIDUALLY	Chapter 2.1.2.3 pp. 19-20	X	X	Surface areas	X
UNMONITORED AREAS	AGGREGATED BY SUBREGION AND COUNTRY	Chapter 2.1.2.3 pp. 19-20	X	X	Surface areas	X
MWWTP	INDIVIDUALLY OR BY SUBCATCHMENT AND BY SUBREGION (UNMONITORED AREAS)	Chapter 3.1.3.1.3. pp. 34-35	X	X	Treatement status, number of PE	X
INDUSTRY	INDIVIDUALLY OR BY SUBCATCHMENT AND BY SUBREGION (UNMONITORED AREAS)	Chapter 3.1.3.2.3. pp.37-39	X	X	Industrial sectors treatement status	X
FISHFARM	INDIVIDUALLY OR BY SUBCATCHMENT AND BY SUBREGION (UNMONITORED AREAS)	Chapter 3.1.3.3.3. pp. 42-43	X	X	Fish production and feed types	X
DIFFUSE SOURCES -Natural background losses -Agriculture -Managed forestry -Atmospheric deposition (into the inland surface water) -Scattered dwellings -Storm water over flow and by-passes	MONITORED RIVERS AND UNMONITORED AREAS by SUBREGION	Chapter 3.2.2. pp. 46-47	no reporting	X		X
RIVERINE LOAD APPORTIONMENT -Natural background load -Point source load -Diffuse source load -Transboundary load	MONITORED RIVERS SEPARATELY AND UNMONITORED AREAS by SUBREGION	Chapter 2.3.4. pp. 26-27	no reporting	X		X
RETENTION (including retention of transboundary load)	MONITORED RIVERS SEPARATELY AND UNMONITORED AREAS by SUBREGION	Chapter 2.2.3. pp. 23-24	no reporting	X	Catchment size, run-off and area of surface waters	X
NATURAL BACKGROUND LOSSES/LOAD	MONITORED RIVERS SEPARATELY AND UNMONITORED AREAS by SUBREGION	Chapter 3.3.2. pp. 47-48	no reporting	X		X

(* Unmonitored parts of monitored rivers can also be reported together with unmonitored areas

PARAMETERS TO BE REPORTED

PLC-5 data will be collected as total annual loads and losses and average, total, long-term and minimum or maximum flows.
Loads and losses will be reported as t/a, flows of rivers and unmonitored areas as m³/s and for point sources as m³/a, respectively. The reported parameters are listed in the table 2.

Table 2: Variables to be reported in the PLC-5 periodic assessment.

Footnotes:

Parameters	Point sources (discharging either into the inland surface waters or directly to the Baltic Sea)			diffuse sources[8,9] (discharging either into the inland surface water or directly to the Baltic Sea)	Natural background losses	Monitored rivers*	Unmonitored areas [9]
	Municipal Effluents*	Industrial Effluents*	Fish farming*				
BOD_5[5]	+	+[3]	+	+[10]		+[1]	+[1]
COD_{Cr}	v	v[4]					
TOC		v[4]				v	v
AOX	v	+[3]					
P_{total}	+	+	+	+	+	+	+
P_{PO4}	+[12]	v[3]				+	+
N_{total}	+	+	+	+	+	+	+
N_{NH4}	+	v[3]				+	+
N_{NO2}[7]	v	v[3]				+[7]	+[7]
N_{NO3}[7]	v	v[3]				+[7]	+[7]
Hg	+[2]	+[3]				+[1]	+[1]
Cd	+[2]	+[3]				+[1]	+[1]
Zn	+[2]	+[3]				+[1]	+[1]
Cu	+[2]	+[3]				+[1]	+[1]
Pb	+[2]	+[3]				+[1]	+[1]
Ni	+[2]	+[3]				v[1]	v[1]
Cr	+[2]	+[3]				v[1]	v[1]
Oil[6]		+[6]				+[6]	+[6]
Flow	+	+	+[11]			+	+

\+ obligatory

v voluntary

[1] Except for rivers where BOD_5 and heavy metal concentrations are below the detection limit.

[2] Heavy metals are obligatory for municipal WWTPs larger than 10000 PE.

[3] BOD_5, AOX, nutrients and heavy metals are obligatory variables for relevant industries if these variables are regulated by sector-wise HELCOM Recommendations and exceeding the threshold according to Annex A1 of the EPER decision (See PLC-5 guidelines).

[4] Only for untreated industrial effluents.

[5] If BOD_7 is measured, a conversion factor ($BOD_5 = BOD_7 / 1.15$) should be used in order to calculate BOD_5.

[6] Oil should be reported for the major assessments for the following rivers: Neva, Vistula, Nemunas, Daugava, Oder, Narva, Göta älv, and at the largest oil refinery in each Contracting Party using the analytical method EN-ISO 9377-2.

[7] Can be monitored reported as NO_{23}-N.

[8] Nutrient losses from diffuse sources can be estimated either as the total for all delivery pathways without dividing on pathways or as losses by every individual pathway.

[9] Diffuse sources discharging directly to the sea encounters loads from scattered dwelling and from rainwater overflows.

[10] Only from diffuse sources discharging directly to the Baltic Sea.

[11] For fish farms where it is relevant (outlet for discharges).

[12] Should be measured or calculated.

* In those cases where concentrations are below the detection limit, the estimated concentration should calculated using the equation: Estimation = (100%-A) x LOD, where A=percentage of samples below LOD. This is according to one of the options listed in the guidance document on monitoring adopted by EU under the IPPC Directive

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WHERE TO REPORT THE DATA?

There are a total of 10 data entry tables for reporting. Nine of them are for data values, i.e. for loads, losses and flows, and one for additional information. The 10th table holds information on fish production and fish feed. Table 3 presents sources of data and the respective data entry tables by source.

Table 3. Scheme of the data entry tables for data reporting
(* Unmonitored parts of monitored rivers can also be reported together with unmonitored areas

SOURCE OF DISCHARGE	FLOW	LOAD/LOSS/RETENTION	FISH PRODUCTION AND FISH FEED
MONITORED RIVERS	7 STATION_FLOW	6 SUBCATCHMENT_LOAD	
MONITORED AGGREGATED RIVERS	6 SUBCATCHMENT_LOAD	6 SUBCATCHMENT_LOAD	
UNMONITORED PARTS OF MONITORED RIVERS (*	6 SUBCATCHMENT_LOAD	6 SUBCATCHMENT_LOAD	
UNMONITORED AREAS including the point sources	6 SUBCATCHMENT_LOAD	6 SUBCATCHMENT_LOAD	
MUNICIPAL WASTE WATER TREATMENT PLANTS	8 MUNICIPAL_FLOW _LOAD	8 MUNICIPAL_FLOW _LOAD OR 13 RIVERINE_APPORTIONMENT	
INDUSTRIAL PLANTS	9 INDUSTRIAL_FLOW_LOAD	9 INDUSTRIAL_FLOW _LOAD OR 13 RIVERINE_APPORTIONMENT	
FISH FARMS	10 FISH_FARM_LOAD	10 FISH_FARM_LOAD OR 13 RIVERINE_APPORTIONMENT	11 FISH_FARM (FISH PRODUCTION AND FEED)
DIFFUSE SOURCES (into the inland surface water)		12 DIFFUSE_SOURCE	
RIVERINE LOAD APPORTIONMENT (to the sea)		13 RIVERINE_APPORTIONMENT	
RETENTION		14 RETENTION	
NATURAL BACKGROUND LOSSES (into the inland surface water)		12 DIFFUSE_SOURCE	
NATURAL BACKGROUND LOAD (to the sea)		13 RIVERINE_APPORTIONMENT	
DIFFUSE LOAD (optional)		15 DIFFUSE_LOAD	

DATA REPORTING

The chapter specifies the sources and reporting categories and refers to parameters to be reported. Each variable of the data tables have also been described.

DATA REPORTING OF MONITORED RIVERS AND UNMONITORED AREAS (Chapter 2.1.1.4 and 2.1.2.3 in the Guidelines)

The periodic data of 2006 will be reported on average flow and total load on
1) Monitored rivers
a) Individually; or
b) As aggregated

NOTE: Concentrations will not be reported.

2) Unmonitored areas
a) Individually unmonitored parts of monitored rivers separately average flow and total load (They also can be reported together with the respective unmonitored area (below in 2b)); or
b) Unmonitored rivers and unmonitored areas average flow and total load by subregion and country (Including point source flow and load of the area)

Table 4. Overview of the reporting obligations for the periodic data collection (PLC-5)

DATA REPORTING OF MONITORED RIVERS AND UNMONITORED AREAS			
SOURCE SUBCATCHMENT	**REPORTING**	**FLOW**	**LOAD**
MONITORED RIVERS	INDIVIDUALLY	Long-term and annual average flow as m3/s, and minimum and maximum flow as m3/s voluntarily	Parameters as in Table 2, t/a
MONITORED AGGREGATED RIVERS	AGGREGATED BY COUNTRY AND SUBREGION	Annual average flow as m3/s	Parameters as in Table 2, t/a
UNMONITORED PART OF MONITORED RIVERS (*	INDIVIDUALLY(*	Annual average flow as m3/s	Parameters as in Table 2, t/a
UNMONITORED AREAS	AGGREGATED BY COUNTRY AND SUBREGION	Annual average flow as m3/s	Parameters as in Table 2, t/a

(* Unmonitored parts of monitored rivers can also be reported together with unmonitored areas

Reported data on monitored rivers and unmonitored areas will be entered in the following tables:
a) All loads (t/a) in **6 SUBCATCHMENT_LOAD**.
b) Flows (m^3/s) of monitored rivers in **7 STATION_FLOW** and
c) Flows (m^3/s) of aggregated monitored rivers or unmonitored areas in **6 SUBCATCHMENT_LOAD**.
The respective data entry tables have been listed in Table 3.

6 SUBCATCHMENT_LOAD
New **Subcatchment_code**s **(FORMAT: CHAR(9))** for aggregated monitored rivers and unmonitored areas have been established for each country. All subcatchments have been listed in 1 SUBCATCHMENT sheet. These subcatchments should be used. If you cannot find the respective subcatchment, contact the data manager.

Parameter_id (FORMAT: VARCHAR(2)) defines annually reported parameter. The names have been listed in the data reporting forms in the comment box of the 6 SUBCATCHMENT_LOAD and in table 2.
2=BOD_5, 4=Cd, 7=Cr (voluntary), 8=Cu, 9=FLOW, 10=Hg, 11=Ni (voluntary), 12=NH_4, 13=NO_2, 14=NO_{23}, 15=NO_3, 16=N_{tot}, 17=Oil, 18=Pb, 19=PPO_4, 20=P_{tot}, 22=TOC (voluntary) and 23=Zn

Parameter_status (FORMAT: VARCHAR(3)) the used parameter will be either an average =AVE (flow m^3/s) or total = TOT (load t/a).

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year in 2006; 1.1.2006

Period (FORMAT: CHAR(1)) refers to measurement period Y = Year (annual average)

Detection_limit (FORMAT: (CHAR(1)) if some of the measured values are below the detection limit **a '< - sign' should be used. Otherwise, the column can be left empty.**

Detection_limit_value (FORMAT: (DECIMAL(7(.5))) (if some of the measured values are below the detection limit) the detection limit value should be entered. **The unit for limit of detection values should be mg/l.**

Detection_limit_number (FORMAT: (INTEGER)) the number of measurements that are below the reported detection limit should be entered.

Value (FORMAT: DECIMAL(10(,3)) is either a load of a monitored subcatchment (individual river), load of monitored aggregated subcatchment (several small rivers summed up), or load (t/a) or flow (m^3/s) of unmonitored area.

NOTE! Flow of reported river should be reported in the 7 STATION_ FLOW sheet.

Value _unit (FORMAT: (VARCHAR(4))) indicates the units of the reported parameter m^3/s or t/a

Number_of_measurements (FORMAT: INTEGER(3) Number of measurements conducted for obtaining each reported total load.

PLC_data = P (FORMAT: (CHAR(1)) indicates that the data set will be used for periodic data compilation

Annual_data = A (FORMAT: (CHAR(1))) indicates if data set could be used also for annual data compilation. If data set can be used for both periodic and annual data compilation then both PLC_data = P and Annual_data = A should be coded. Some countries will report measured values periodically (every 6^{th} years) and annually estimate the same source.

Flag_id (FORMAT: (INTEGER(4)) Defines any flag identification number for data value explanation. Any exceptions in the data should be flagged and described with written explanation. Typical flagging is a conversion of BOD_7 to BOD_5 values (BOD_5 = BOD_7/1.15).

Value_status (FORMAT: DECIMAL(10(,3)) indicates if reported value has been measured or estimated. Especially for costal areas annual data will be estimated; also measured values for monitored rivers should be indicated as M = measured, E = estimated.

Method (FORMAT: CHAR(1))
Especially for subcatchment loads method of calculation of the individual or aggregated loads should be indicated
1 = Daily flow and daily concentration regression
2 = Daily flow and daily concentration (interpolated)
3 = Mean monthly concentration and monthly flow
B: The run-off and load of the partly or unmonitored river or unmonitored area
4 = Run-off of partly monitored rivers
5 = Load from unmonitored areas based on the surface area comparison with a similar monitored area.
6= Country specific method: Detailed description should be reported

TBL_STATION_FLOW

Station_code (FORMAT: CHAR(7)) When reporting flow data individual station_codes should be used. They have been listed in the **2 STATION** sheet. H-station (hydrological station) should be used. In some cases hydrological and chemical stations are separate. Then C-station (chemical) can be used.

Subcatchment_code (FORMAT: CHAR(9)) defines a subcatchment where the station is located. All subcatchments have been listed in **1 SUBCATCHMENT** sheet. These subcatchments should be used. If you cannot find the respective subcatchment, contact the data manager.

Parameter_id (FORMAT: VARCHAR(2)) periodically reported parameter is 9=FLOW

Parameter_status FORMAT: (VARCHAR(3)) of the used parameters will be reported for flow as an annual average =AVE, long-term average = LTA, minimum flow of the year = MIN or maximum flow of the year = MAX. Minimum and maximum flows can be reported on a voluntary basis.

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates for the annual average flow the first date of the year in 2006; 01.01.2006 and for a long-term average the first date of the long-term period.

End_time (FORMAT: DATE(10); dd.mm.yyyy) indicates for the annual average flow the last date of the year in 2006 i.e., 31.12.2006 and for a long-term average the last date of the long-term period.

Period (FORMAT: CHAR(1)) refers to measurement period Y = year and L = Long-term period

Value (FORMAT: DECIMAL(10(,3)) is an annual average or long-term flow of a monitored river

Value _unit (FORMAT: (VARCHAR(4))) indicates the units of the reported parameter, m^3/s

PLC_data = P (FORMAT: (CHAR(1)) indicates that data set will be used for periodic data compilation.

Annual_data = A (FORMAT: (CHAR(1))) indicates if data could to be used also for annual data compilation. If data set can be used for both periodic and annual data compilation then both PLC_data = P and Annual_data = A should be coded. Some countries will report measured values periodically (every 6^{th} years) and annually estimate of the same source.

Flag_id (FORMAT: (INTEGER(4)) defines any flag identification number for data value explanation. If flow value has been extrapolated to chemical station, then a numbered flag should indicate it here.

Value_status (FORMAT: DECIMAL(10(,3)) indicates the reported value has been measured, M = measured or E = estimated.

Method (FORMAT: CHAR(1))
Especially for flow calculation methods of individual subcatchments should be reported
1 = Daily flow
2 = Mean monthly flow
3 = Periodic flow (define period)
4 = A country specific method for flow calculation (should be described in detail)

Nr_measurements (FORMAT: (INTEGER(3))
Defines the number of measurements conducted for obtaining each reported average flow.

DATA REPORTING OF POINT SOURCES

Municipal waste water treatment plants (MWWTP) (Chapter 3.1.3.1.3. in the Guidelines)

Municipal wastewater treatment plants will be classified according to their size and treatment status (treated or untreated waste water). Following the classification, MWWTP discharge data should be reported as aggregated by big and small plants, and treated and untreated wastewater, and by subcatchment of discharge. The subcatchments of discharge are: individually monitored rivers, (unmonitored parts of monitored rivers if loads of unmonitored parts of monitored rivers are reported), small aggregated monitored rivers, unmonitored areas, and sea (direct discharge). All calculation and/or estimation methods should also be reported. Aggregated MWWTPs refer to names of monitored rivers and unmonitored parts of monitored rivers, aggregated MWWTPs of small aggregated monitored rivers to AGGREGATED MONITORED RIVERS, MWWTPs of unmonitored areas to SUBREGION_CODE+COUNTRY_CODE+LAND+YEAR and MWWTPs discharging directly to sea to SUBREGION_CODE+COUNTRY_CODE+SEA.

Voluntarily MWWTP discharges can also be reported individually, plant by plant following the classification, i.e. big - small, treated - untreated wastewater discharge. If MWWTPs will be reported individually, then also limits of detection (LOD) can be reported, if needed.

Reported data should be entered in **8 MUNICIPAL_FLOW_ LOAD** sheet**.** Variables of the reporting format have been described below.

For aggregated point sources no **Plant_code** should be entered but instead **subcatchment_code** and **subcatchment_name**, in order to define the respective catchment of discharge.

If data will be reported individually, i.e., plant by plant, then also basic information, including **subcatchment_code** and **subcatchment_name, country_code and subregion_code** and individual **plant_code** and **plant_name**, should be used.

Table 6. Data reporting obligations of individual and aggregated MWWTPs discharging into the inland surface water and directly to the Baltic Sea.

CATCHMENT OF DISCHARGE	SIZE CATEGORIES OF MWWTP	TREATMENT STATUS	MWWTPs discharging into the inland surface water and directly to the Baltic Sea		
			EVERY SIX YEAR REPORTING		
			FLOW (*	LOAD (*	ADDITIONAL INFORMATION
INDIVIDUALLY MONITORED RIVERS	**BIG> 10000 PE AS AGGREGATED BY CATCHMENT OF DISCHARGE** **SMALL 10000 PE AS AGGREGATED BY CATCHMENT OF DISCHARGE**	TREATED/UNTREATED	Total flow as m3/a	Parameters as in table 2., t/a	-Number of MWWTP -Number of population equivalent (P.E.) by category of -SIZE -TREATMENT STATUS -CATCHMENT OF DISCHARGE -CALCULATION/ ESTIMATION METHODS (*** -NUMBER OF MEASUREMENTS (***
AGGREGATED MONITORED RIVERS					
UNMONITORED PARTS OF MONITORED RIVERS (**					
UNMONITORED AREAS (indirect discharge)					
DIRECT DISCHARGE BY SUBREGION					

(* All MWWTPs can also be reported individually
(** If unmonitored parts of monitored rivers are included in the unmonitored areas, then MWWTPs located in the unmonitored parts of monitored rivers, should be linked with the unmonitored areas.
(*** Calculation and estimation methods can be reported only if MWWTPs are reported individually.

8 MUNICIPAL_FLOW_LOAD

Plant_code (FORMAT: CHAR(7)) indicates a code of an individual municipal waste water treatment plant. **For aggregated MWWTPs no plant_code will be reported.**

Subcatchment_code (**FORMAT: CHAR(9)** defines a catchment for aggregated MWWTPs. They are: individually monitored rivers, aggregated monitored rivers, unmonitored parts of monitored rivers, unmonitored area or sea area (direct discharge). These codes have been established for each country in **1 SUBCATCHMENT.**

Subcatchment_name defines the name of the subcatchment of discharge of aggregated MWWTPs.

Parameter_id (FORMAT: VARCHAR(2)) specifies the periodically reported parameter codes. The names have also been listed in the data reporting forms in the comment box of the 9 MWWTP_LOAD_FLOW sheet. 1=AOX (voluntary), 2=BOD_5, 4=Cd, 5=COD_{Cr} (voluntary), 7=Cr, 8=Cu, 9=FLOW, 10=Hg, 11=Ni, 12=NH_4, 13=NO_2 (voluntary), 14=NO_{23} (voluntary), 15=NO_3 (voluntary), 16=N_{tot}, 18=Pb, 19=PPO_4, 20=P_{tot} and 23=Zn

Parameter_status (FORMAT: (VARCHAR(3)) of the reported parameter is either total flow or load = TOT (flow m³/a or load t/a)

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year in 2006, e.g. 01.01.2006

Period (FORMAT: CHAR(1)) refers to measurement period one year starting on 01.01.2006 = Y

Detection_limit (FORMAT: (DECIMAL(7(.5))) if a reported value includes measurements which are below the detection limit **a '< -sign' should be used. Otherwise, the column can be left empty**
Detection limit can be reported only for an individually reported MWWTP.

Detection_limit_value (FORMAT: (DECIMAL(7(.5))) The detection limit value should be entered as units mg/l. Detection limit value can be reported only for an individually reported MWWTP.

Detection_limit_number (FORMAT: (INTEGER)) indicates the number of measurements below the reported detection limit value. Detection limit number can be reported only for an individually reported MWWTP.

Value (FORMAT: DECIMAL(10(,3)) is load or flow value of aggregated MWWTPs or of a individual MWWTP. Value entered is a sum of loads or flows of a certain size of aggregated MWWTPs of a certain subcatchment, for a certain size (big or small)

Value _unit (FORMAT: (VARCHAR(4))) indicates the units of the reported parameter, either m^3/a (flow) or t/a (load).

PLC_data = P (FORMAT: (CHAR(1)) indicates that the data set can be used for periodic data compilation.

Annual_data = A (FORMAT: (CHAR(1)) indicates if data could be used only for annual data compilation; NOTE! If the data set can be used for both periodic and annual data compilation then both PLC_data = P and Annual_data = A should be coded. Some countries will report measured values periodically (every 6^{th} years) and annually estimate of the same source.

Flag_id (FORMAT: (INTEGER(4)) Defines any flag identification number for data value explanation. Typical flagging is a conversion of BOD_7 to BOD_5 values (BOD_5 = BOD_7/1.15).

Size_code (FORMAT: CHAR(1)) defines the size of an individual point source or aggregated point sources. for **MWWTPs** according to the PE values so that when
1) sewage effluents of MWWTP > 10000 PE = BIG;
2) sewage effluents of MWWTP ≤ 10000 PE t= SMALL; and

Nr_of_plants (FORMAT: INTEGER(3)) indicates the number of plants. Aggregated plants are reported by subcatchment, size, industrial sector and treatment status, and therefore the number of plants must be reported; number of individually reported point source = 1
If number of point sources is not known then = -99 (This will be a default)

Nr_PE (FORMAT: INTEGER(8)) Number of PE's connected to the plant(s). Number of PEs connected to MWWTP(s) could be estimated as
-BOD_5 1 PE = 60g O_2 /day

-N_{tot} 1 PE= 12g N/day
-P_{tot} 1 PE= 2.7g P/day

Nr_measurements (FORMAT: (INTEGER(4))
Defines the number of measurements conducted for obtaining each reported value/period (Total). Number of measurements will be reported only for an individual MWWTP.

Treatment_status (FORMAT: (CHAR(1)) defines the treatment status of point source discharges.
Status of treatment is either: T = Treated, U = Untreated or Z = Unknown (Default). Treatment status should be reported both for aggregated and individually reported MWWTPs.

Method_of_estimate_calculate (FORMAT: CHAR(1))
Reported only for an individual MWWTP.
Defines the method of calculation or estimate if reported;
1 = continuous flow and concentration measurements,
2 = continuous flow and non-continuous concentration measurements
3 = non-continuous flow and concentration sampling,
4 = Estimation of load based on number of population connected. The estimated parameters and coefficients are: BOD_5 = 60g O_2/person/day, N_{tot} = 12g N/person/day, P_{tot} = 2.7g P/person/day, 5 = Country specific method
5 = A country specific method (should be described in detail)

Industries (Chapter 3.1.3.2.3. in the Guidelines)

Industrial plants will be classified according to their size, treatment status (treated or untreated) and sector of industry. Following the classification industrial discharges should be reported as aggregated by big and small (according to IPPC directive production capacity), treated/untreated, industrial sector and by subcatchment of discharge.

The IPPC production capacity values divide industries into two size categories, big and small. These production capacity values have been listed in Annex 5 in the PLC-5 Guidelines. Note that, some subcategories do not have a production capacity and thus they are considered as big.

The new industrial sectors are:
1) Energy industries
2) Production and processing of metals
3) Mineral industries
4) Chemical industry and chemicals
5) Waste management
6) Other activities

The old codes of industrial branches have been included in the data entry table (**9 INDUSTRIAL_FLOW_LOAD**), as the old data (PLC-4) of industrial branches will be recoded in the future.

The subcatchments of discharge are: individual monitored rivers, (unmonitored parts of monitored rivers if loads of unmonitored parts of monitored rivers are reported), small aggregated monitored rivers, unmonitored areas and sea (direct discharge).

For aggregated industries no PLANT_CODE should be entered but instead **subcatchment_code** and **subcatchment_name** and **control_name** should be reported in order to define the respective catchment of discharge.

Industrial discharge data can voluntarily be reported individually plant by plant, following the classification, i.e. big – small (IPPC production capacity) and industrial sector. For individually reported point sources PLANT_CODE and PLANT_NAME should be used. If industries will be reported individually, then also limits of detection (LOD) can be reported, respectively.

The number of industries and calculation and/or estimation methods should be reported.

Reported data will be entered in the **9 INDUSTRIAL_FLOW_LOAD.**

Table 7. Data reporting obligations of industries discharging in the river surface water and directly to the Baltic Sea.

CATCHMENT OF DISCHARGE	SIZE CATEGORIES OF INDUSTIES	SECTOR OF INDUSTRY	TREATMENT STATUS	Industries discharging into the inland surface water and directly to the Baltic Sea		
				EVERY SIX YEAR REPORTING		
				FLOW	LOAD	ADDITIONAL INFORMATION
INDIVIDUALLY MONITORED RIVERS	PRODUCTION> IPPC PRODUCTION CAPACITY =BIG PRODUCTION ≤ IPPC PRODUCTION CAPACITY=SMALL	NEW SECTORS OF INDUSTRIES: 1) ENERGY INDUSTRY 2) PRODUCTION AND PROCESSING OF METALS 3) MINERAL INDUSTRY 4) CHEMICAL INDUSTRY AND CHEMICALS 5) WASTE MANAGEMENT 6) OTHER ACTIVITIES	TREATED / UNTREATED WASTEWATER	Total flow as m3/a	Parameters as in table 2., t/a	NUMBER OF INDUSTRIES -SIZE (IPPC PRODUCTION CAPACITY) -TREATMENT -SECTOR -CATCHMENT -USED FLOW AND LOAD CALCULATION/ ESTIMATION METHODS
AGGREGATED MONITORED RIVERS						
UNMONITORED PARTS OF MONITORED RIVERS (*						
UNMONITORED AREAS						
DIRECT DISCHARGE BY SUBREGION						

(* If unmonitored parts of monitored rivers are included in the unmonitored areas, then industries located in the unmonitored parts of monitored rivers, should be linked with the unmonitored areas.

9 INDUSTRIAL_FLOW_LOAD

Plant_code (FORMAT: CHAR(7)) Individual plant_code for an individual industry. For aggregated industries no plant_code will be reported.

Subcatchment_code (**FORMAT: CHAR(9)** defines a catchment for individual or aggregated industries. They are: individually monitored rivers, aggregated monitored rivers, unmonitored parts of monitored rivers, unmonitored area or sea area (direct discharge). These codes have been established for each country in **1 SUBCATCHMENT.** If industries will be reported individually the **subcatchment_code** should be entered here.

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment of discharge of aggregated industries. If industries will be reported individually the **subcatchment_name** should be entered here.

Parameter_id (FORMAT: VARCHAR(2)) specifies the reported parameter code. Parameter names have also been listed in the data reporting forms in the comment box of 9__INDUSTRIAL_LOAD_FLOW. 1=AOX, 2=BOD_5, 4=Cd, 5=COD_{Cr} (voluntarily), 7=Cr, 8=Cu, 9=FLOW, 10=Hg, 11=Ni, 12=NH_4 (voluntarily), 13=NO_2 (voluntarily), 14=NO_{23} (voluntarily), 15=NO_3 (voluntarily), 16=N_{tot}, 17=Oil, 18=Pb, 19=PPO_4 (voluntarily), 20=P_{tot}, 22=TOC (voluntarily) and 23=Zn

Parameter_status (FORMAT: (VARCHAR(3)) of the reported parameter is a total load or flow = TOT (flow m^3/a or load t/a

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year in 2006, e.g. 01.01.2006

Period (FORMAT: CHAR(1)) refers to measurement period of one year starting on 01.01.2006, Y = year

Detection_limit (FORMAT: (DECIMAL(7(.5))) if a reported value include measurements which are below the detection limit **a '< -sign' should be used. Otherwise, the column can be left empty.**
Detection limit can be reported only for an individually reported industry.

Detection_limit_value (FORMAT: (DECIMAL(7(.5))) the detection limit value should be entered. The units are mg/l. Detection limit value can be reported only for an individually reported industry.

Detection_limit_number (FORMAT: (INTEGER)) indicates the number of measurements below the reported detection limit. 'Detection_limit_number' can be reported only for an individually reported industry.

Value (FORMAT: DECIMAL(10(,3)) is load or flow value of an industry or aggregated industries.

Value_unit (FORMAT: (VARCHAR(4))) indicates the units of the reported parameters, either m^3/a (flow) or t/a (load).

PLC_data = P (FORMAT: (CHAR(1)) indicates if the data set can be used for periodic data compilation.

Annual_data = A (FORMAT: (CHAR(1)) indicates that the data is to be used only for annual data compilation; NOTE! If the data set can be used for both periodic and annual data compilation then both PLC_data = P and Annual_data = A should be coded. Some countries will report measured values periodically (every 6^{th} year) and annually estimate of the same source.

Flag_id (FORMAT: (INTEGER(4)) Defines any flag identification number for data value explanation. Typical flagging is a conversion of BOD_7 to BOD_5 values ($BOD_5 = BOD_7/1.15$).

Treatment_status (FORMAT: (CHAR(1)) defines the treatment status of point source discharges
Status of treatment: T = Treated, U = Untreated or Z = Unknown (Default if left empty).

Nr_measurements (FORMAT: (INTEGER(4))
Defines the number of measurements conducted for obtaining each reported value/period (Total). Number of measurements will be reported only for individual industries.

Size_code (FORMAT: CHAR(1)) defines the size category of aggregated point sources.

The size of point sources should be defined according to IPPC Directive 96/61/EC for **industries** as follows:

1) Production exceeding the IPPC production capacity values = BIG;
2) Production equals or is below the IPPC production capacity values = SMALL;
Production capacity values have been listed in the PLC-5 Guidelines in Annex 5.

Sector_code (FORMAT: CHAR(1)) stands for new industrial sectors.
1 = Energy industries, 2 = Production and processing of metals, 3 = Mineral industries, 4 = Chemical industry and chemicals, 5 = Waste management, 6 = Other activities

Branch_code (FORMAT: CHAR(1)) indicates the old branches of industry: 1 = Pulp/paper, 2 = Chemical, 3 = Petro chemical, 4 = Mining, 5 = Iron/steel, 6 = Other metal, 7 = Food, 8 = Leather/textile, 9 = Other
The old industrial branches will be included in order to update the old PLC-4 data by the end of the year.

Nr_of_plants (FORMAT: INTEGER(3)) indicates the number of industrial plants. Aggregated plants are reported by subcatchment, size, and industrial sector, and therefore the number of plants must be reported; number of individually reported point source = 1, If number of point sources is not known then = -99 (a default)

Method_of_estimate_calculate (FORMAT: CHAR(1))
Defines the method of calculation or estimation of discharge if reported; 1 = continuous flow and concentration measurements; 2 = continuous flow and non-continuous concentration measurements; 3 = non-continuous flow and concentration sampling; 4 = Estimation of load based on number of population connected. The estimated parameters and coefficients are: BOD_5 = 60g O_2/person/day, N_{tot} = 12g N/person/day, P_{tot} = 2.7g P/person/day; 5 = A country specific method (to be described in detail)

Fish farms (Chapter 3.1.3.3.3. in the Guidelines)

Fish farms will be classified according to their size to big and small. Size of a fish farm is defined by fish production so that fish production >200t/a stands for a big and ≤ 200t/a for a small fish farm, respectively. Following the classification, fish farm discharges should be reported as aggregated by size and treatment (treated/untreated) and by catchment of discharge.

The subcatchments of discharge are: individual monitored rivers, (unmonitored parts of monitored rivers if loads of unmonitored parts of monitored rivers are reported), small aggregated monitored rivers, unmonitored areas (unmonitored rivers, coastal areas and islands), and sea area (direct discharge).

For aggregated fish farms no point source_codes should be entered but instead **subcatchment_code** and **subcatchment_name** and **control_name** should be reported (shaded in grey in the data entry table) in order to define the respective catchment of discharge.

Fish farm discharge data can voluntarily be reported individually plant by plant, following the classification, i.e. big and small (200t/a > production ≤ 200 t/a). For individually reported point sources **PLANT_CODE** should be used.

Additionally, should be reported
1) Total fish production;
2) Type of fish feed used;
3) Amount of fish feed used in tn; and
4) All estimation and calculation methods;

Fish farm discharge (and flow) should be reported in **10 FISH_FARM_LOAD.** Additional information, fish production, type of fish feed used and amount of feed should be reported in the **11 FISH_FARM.**

The following calculation and/or estimation methods of quantification of discharge have been defined:
1) Production calculation or estimation with no sludge removal (Approach 1.a in chapter 3.1.3.3.1 in the Guidelines)
2) Production calculation or estimation with sludge removal (Approach 1.b in chapter 3.1.3.3.1 in the Guidelines)
3) Monitoring of discharge for land-based fish farm plants (approach 2 in chapter 3.1.3.3.2 in the Guidelines)
4) A country specific method
If a country specific method will be used that should be indicated and described in detail.

Reported data should be entered in **10 FISH_FARM_LOAD** for discharge and flow or in **11 FISH_FARM** for fish production, fish feed, amount of feed

Table 8. Data reporting obligations of fish farms discharging in the river surface water or directly to the Baltic Sea

CATCHMENT OF DISCHARGE	SIZE CATEGORIES	TREATMENT STATUS	Individual and aggregated Fish farms discharging into the inland surface water and directly to the Baltic Sea		
			EVERY SIX YEAR REPORTING		
			FLOW (*	LOAD (*	ADDITIONAL INFORMATION
INDIVIDUALLY MONITORED RIVERS	Fish production >200 t/a = BIG/ fish production ≤200 t/a =SMALL	Treated i.e. with sludge removal/ untreated i.e. without sludge removal	Total flow as m3/a(***	Parameters as in table 2., t/a (*	-total fish production -type of fish feed used -amount of fish feed used in tn -all estimation and calculation methods
AGGREGATED MONITORED RIVERS					
UNMONITORED PARTS OF MONITORED RIVERS (**					
UNMONITORED AREAS (indirect discharge)					
DIRECT DISCHARGE BY SUBREGION					

(* Fish farm discharges can voluntarily be reported individually
(** If unmonitored parts of monitored rivers are included in the unmonitored areas, then a fish farm located in the unmonitored parts of a monitored river, should be linked with the unmonitored area.
(***Only in land-based fish farm plant with sludge removal as flow can then be measured.

10 FISH_FARM_LOAD

Plant_code (FORMAT: CHAR(7)) indicates a code of an individual fish farm. For aggregated fish farms no plant_code will be reported.

Subcatchment_code (**FORMAT: CHAR(9)** defines a catchment for individual or aggregated fish farms. They are: individually monitored rivers, aggregated monitored rivers, unmonitored parts of monitored rivers, unmonitored area or sea area (direct discharge). These codes have been established for each country in **1 SUBCATCHMENT.**

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment of discharge of aggregated fish farms.

Parameter_id (FORMAT: VARCHAR(2)) specifies the periodically reported parameter codes and their names have been listed above and in the data reporting forms in the comment box of the 10 FISH_FARM _LOAD sheet.
2 = BOD_5, 9 = Flow, 16 = Ntot, and 20 = Ptot

Parameter_status (FORMAT: (VARCHAR(3)) the used parameter will be total = TOT (load t/a) or flow (m^3/a)

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year in 2006, e.g. 01.01.2006

Period (FORMAT: CHAR(1)) refers to measurement period = Y starting on 01.01.2006.

Value (FORMAT: DECIMAL(10(,3)) is either a load or a flow of a fish farm or an aggregated value of several fish farms

Value_unit (FORMAT: (VARCHAR(4))) indicates the units of the reported parameters, for load, tn/a and for flow m³/a.

PLC_data = P (FORMAT: (CHAR(1)) indicates that data set will be used for periodic data compilation.

Annual_data = A (FORMAT: (CHAR(1)) indicates if data set could also be used for annual data compilation; NOTE! If the data set can be used for both periodic and annual data compilation then both PLC_data = P and Annual_data = A should be coded. Some countries will report measured values periodically (every 6^{th} year) and annually estimate of the same source.

Flag_id (FORMAT: (INTEGER(4)) defines any flag identification number for data value explanation. Typical flagging is conversion of BOD_7 to BOD_5 values (BOD_5 = BOD_7/1.15).

Calculation_estimation_method (FORMAT: CHAR(1)) indicates calculation and/or estimation method of fish farm load
1 = Production calculation or estimation with no sludge removal (Approach 1.a in Chapter 3.1.3.3 in the Guidelines)
2 = Production calculation or estimation with sludge removal (Approach 1.b in Chapter 3.1.3.3 in the Guidelines)
3 = Monitoring of discharge for land-based fish farm plants (Approach 2 in Chapter 3.1.3.3 in the Guidelines)

4 = A country specific method. If a country specific method will be used that should be indicated and described in detail.

11 FISH_FARM

Plant_code (FORMAT: CHAR(7)) indicates a code of an individual fish farm.

Subcatchment_code (**FORMAT: CHAR(9)** defines a catchment for aggregated fish farms. They are: individually monitored rivers, aggregated monitored rivers, unmonitored parts of monitored rivers, unmonitored area or sea area (direct discharge). These codes have been established for each country in **1 SUBCATCHMENT.**

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment of discharge of aggregated fish farms.

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year in 2006, e.g. 01.01.2006

Period (FORMAT: CHAR(1)) refers to measurement period = Y starting on 01.01.2006.

Fish_production (FORMAT: DECIMAL(10((.3))) indicates the total annual fish production in t/a

Feed_type (FORMAT: CHAR(1)) describes the types of fish feed used
F = Fish
D = Dry
S = Semi-moist
M = Moist
Z = Unknown

Amount_of feed (FORMAT: DECIMAL(10(.3)) indicates the amount of each type of feed used as t/a.

DIFFUSE SOURCES INTO THE INLAND SURFACE WATER (Chapter 3.2.2. and 3.3.2. in the Guidelines)

Data reporting of diffuse sources to inland fresh waters include the following categories: Natural background losses and losses from agriculture, managed forestry, atmospheric deposition into the inland surface waters, scattered dwellings and storm water overflow and by-passes. Agricultural losses can be divided into pathways. They are: Soil erosion, surface run-off, interflow, tile drainage and ground water. If all the pathways cannot be defined then 'sum of two or more pathways ' should be reported. Diffuse losses into the inland surface waters should be calculated or estimated to each defined subcatchment. The subcatchments are: individually monitored rivers, small aggregated monitored rivers, unmonitored parts of monitored rivers and unmonitored areas. Applied calculation/estimation methods of losses should be reported.

NOTE! Natural background losses will be entered to 12 DIFFUSE_SOURCE table as part of the diffuse source losses.

Table 9. Overview of reporting obligations related to indirect diffuse sources

SUBCATCHMENT	**REPORTING**	**DIFFUSE SOURCES INTO THE INLAND SURFACE WATER**		
		NATURAL BACKGROUND SOURCE(**	**ANTHROPOGENIC SOURCES**	
			DIFFUSE SOURCES	**DIFFUSE SOURCE PATHWAY**
MONITORED RIVERS	INDIVIDUALLY	Total N and total P t/a	Total N and total P t/a by diffuse source category (***	Total N and total P t/a by agricultural pathway (****
MONITORED AGGREGATED RIVERS	AGGREGATED by subregion	Total N and total P t/a	Total N and total P t/a by diffuse source category (***	Total N and total P t/a by agricultural pathway (****
UNMONITORED PARTS OF MONITORED RIVERS (*	INDIVIDUALLY (*	Total N and total P t/a	Total N and total P t/a by diffuse source category (***	Total N and total P t/a by agricultural pathway (****
UNMONITORED AREAS	AGGREGATED by subregion	Total N and total P t/a	Total N and total P t/a by diffuse source category (***	Total N and total P t/a by agricultural pathway (****

(*Unmonitored parts of monitored rivers can also be reported together with unmonitored areas
(** Natural background losses comprise of losses from unmanaged land and part of the losses from managed land that would occur irrespective of agricultural activities.
(*** Diffuse source categories are: Agriculture, managed forestry, atmospheric deposition into the inland surface water, scattered dwellings, transboundary losses and storm water overflow and by-passes.
(**** Agricultural pathways are: Soil erosion, surface run-off, interflow, tile drainage, ground water and sum of pathways. If all pathways cannot be reported separately then for the rest 'sum of pathways' should be used.

12 DIFFUSE_SOURCE

Subcatchment_code (**FORMAT: CHAR(9)** defines the area of diffuse source. A subcatchmetnt_code is: Monitored river subcatchment, aggregated monitored rivers, unmonitored part of the monitored river or an unmonitored area. They are listed in **1 SUBCATCHMENT** sheet. These subcatchments should be used. If you cannot find the respective subcatchment, contact the data manager.

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment of diffuse losses.

Diffuse_source (FORMAT (CHAR(3)) specifies the origin of the source into the inland surface water. It can be:
NBS = natural background source
AGS = source of agriculture
MFS = source of managed forestry
ATS =source of atmospheric deposition into the inland surface water
SCS = source of scattered dwellings
SWS = source of storm water overflows and by-passes
TRS = source of transboundary losses (measured at border)
NOTE! source of agriculture (AGS) can be divided into pathways as listed below.

Pathway_type (FORMAT: CHAR(2)) describes the pathway of agricultural (AGS) and managed forestry (MFS) source. A type of pathway can be:
ER = Soil erosion
SR = Surface runoff
NI = Natural interflow
TD = Tile drainage
BF = Ground water
SP = Sum of those pathways which cannot be reported separately

Parameter_id (FORMAT: VARCHAR(2)) specifies the periodically reported parameter codes for diffuse sources. They have been indicated in the Comment box of the 11 DIFFUSE_SOURCE –sheet and are: 16 = Ntot, and 20 = Ptot

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the sampling year 2006, e.g. 01.01.2006

Period (FORMAT: CHAR(1)) refers to estimate/measurement period = Y starting on 01.01.2006

Value (FORMAT: DECIMAL(10(,3)) is the estimated value of diffuse source into the surface inland water

Value_unit (FORMAT: VARCHAR(4)) indicates the units of the reported parameters, for periodic loss t/a

Flag_id (FORMAT: INTEGER(4)) defines any flag identification number for data value explanation

Diffuse _method ((FORMAT: VARCHAR(1)) specifies the applied calculation/estimation method of losses

1 = total annual load kg/ha/a
2 = load based on nutrient concentration (mg/l) and discharge (l/s/km2) calculations
3 = A country specific method
NOTE! Any method use should be described in detail!

RIVERINE LOAD APPORTIONMENT (Chapter 2.3.4. in the Guidelines)

Riverine load apportionment should be reported according to the same defined subcatchments as the river loads. Thus, riverine load apportionment should be calculated for each defined subcatchment. The sub-catchments are: monitored rivers, aggregated monitored rivers, unmonitored part of the monitored rivers and unmonitored areas.

The load, which will be measured at the border of a transboundary river will be reported separately as a source. Sweden and Finland should agree on how to calculate the apportionment for Torne Älv / Tornionjoki and Russia and Estonia for the river Narva, respectively. For the other transboundary rivers all subcatch-ments should be apportioned by source category.

NOTE! Also natural background loads will be entered to 13 RIVERINE_APPORTIONMENT table as part of diffuse loads.

Table 10. Overview of reporting obligations related to riverine load apportionment.

SUBCATCHMENT	REPORTING	RIVERINE LOAD APPORTIONMENT		
		NATURAL BACKGROUND LOAD	ANTHROPOGENIC LOAD	
			POINT SOURCE LOAD(***	DIFFUSE LOAD
MONITORED RIVER	INDIVIDUALLY	Total N and total P t/a	Total N and total P t/a by point source load category	Total N and total P t/a by diffuse load category(****
MONITORED AGGRE-GATED RIVERS	AGGREGATED by subregion	Total N and total P t/a	Total N and total P t/a by point source load category (**	Total N and total P t/a by diffuse load category(****
UNMONITORED PARTS OF MONITORED BIG RIVERS (*	INDIVIDUALLY(*	Total N and total P t/a	Total N and total P t/a by point source load category (***	Total N and total P t/a by diffuse load category(****
UNMONITORED AREAS(**	AGGREGATED by subregion	Total N and total P t/a	Total N and total P t/a by point source load category (***	Total N and total P t/a by diffuse load category(****

(*Unmonitored parts of monitored rivers can also be reported together with unmonitored areas
(** To be reported if riverine load apportionment has been performed on unmonitored areas.
(*** Point source load categories are: MWWTP, industry, fish farms
(**** Diffuse loads to be reported separately for 1) agriculture, 2) managed forestry, 3) atmospheric deposition, 4) scattered dwellings, 5) storm water overflows and by-passes and 6) transboundary load.

In order to insure a complete coverage of the data collection same areas should be used in reporting the riverine load apportionment as for the load data. The aggregation of subcatchments should be the same throughout the data collection.

13 RIVERINE_APPORTIONMENT

Subcatchment_code (FORMAT: CHAR(9)) defines the catchment of discharge. A subcatchment_code defines a monitored river, aggregated monitored rivers, unmonitored part of monitored river or an unmonitored area (including unmonitored rivers, coastal areas and islands). They are listed in 1 SUBCATCHMENT sheet. These subcatchments should be used. If you cannot find the respective subcatchment, contact the data manager.

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment of diffuse losses.

Load_category (FORMAT: CHAR(2)) specifies if the load to the sea is natural background of origin, anthropogenic or mixed load coming from transboundary areas which have not been apportioned by source types. Three codes will be used:
BL = Natural background load
AL = Anthropogenic load
TL = Transboundary load

Source_type (FORMAT:CHAR(2)) specifies source types of the discharge to the sea. Discharges will be divided into natural background load, anthropogenic load and to transboundary load. Anthropogenic load will further be divided into diffuse and point source load
NL = Natural background load
DL = Diffuse load
PL= Point source load
TL = Transboundary load
If discharges cannot be divided into origins of loads (as below A: Diffuse loads, B: Point source loads), then a sum of all sources should be reported.

Origin (FORMAT: CHAR(3)) defines the origin of diffuse and point source loads of the total load to the sea.

A: DIFFUSE LOADS
NBL = Natural background load
AGL = Load of agriculture
MFL = Load of managed forestry
ATL = Atmospheric deposition
SCL = Scattered dwellings, SWL = storm water overflows and flow from urban areas
DIL = Diffuse load can be used as a sum of the sources which cannot defined separately
TRL = Transboundary load

B: POINT SOURCE LOADS

MWL = Municipal
INL = Industry
FIL = Fish farm

Parameter_id (FORMAT: VARCHAR(2)) specifies the periodically reported parameter codes for apportioned loads. They have been indicated in the Comment box of the 13 RIVERINE_APPORTIONMENT – sheet and are: 16 = Ntot, and 20 = Ptot

Parameter_status (FORMAT: (VARCHAR(3)) the used parameter will be total = TOT (load t/a)

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year in 2006, e.g. 01.01.2006

Period (FORMAT: CHAR(1)) refers to estimate/measurement period = Y starting on 01.01.2006

Value (FORMAT: DECIMAL(10(,3)) is the calculated/estimated value of apportioned load into the sea.

Value_unit (FORMAT: VARCHAR(4)) indicates the units of the reported parameters, for apportioned periodic load in t/a.

Flag_id (FORMAT: INTEGER(4)) defines any flag identification number for data value explanation.

Apportionment _method (FORMAT: CHAR(1)) specifies the applied calculation/estimation method of apportionment
1 =
2 =
3 = A country specific method

RETENTION (Chapter 2.3.3. in the Guidelines)

Retention should be reported on the same defined subcatchments as the river load, riverine load apportionment to the sea and diffuse losses into the inland surface water, and should be calculated for each defined subcatchment. The subcatchments are: monitored rivers, unmonitored parts of monitored rivers, small aggregated monitored rivers or unmonitored areas.

In retention calculation the losses of the upper parts of the transboundary rivers (at border) should be taken into account. Sweden and Finland should agree on how to calculate the apportionment for Torne Älv / Tornionjoki and Russia and Estonia for the river Narva, respectively. For the other transboundary rivers retained part of the transboundary losses could be the difference between the measured discharge at the border and the estimated apportion of the transboundary load discharging to the sea.

Table 11. Overview of reporting obligations related to retention

SUBCATCHMENT	REPORTING	RETENTION
MONITORED RIVERS	INDIVIDUALLY	N and P in t/a
MONITORED AGGREGATED RIVERS	AGGREGATED by subregion	N and P in t/a
UNMONITORED PARTS OF MONITORED BIG RIVERS(*	INDIVIDUALLY(**	N and P in t/a
UNMONITORED AREAS (**	AGGREGATED by subregion	N and P in t/a

(*Unmonitored parts of monitored rivers can also be reported together with unmonitored areas
(** To be reported if riverine load apportionment has been performed on unmonitored areas.
(*** The contracting parties are encouraged to estimate retention for unmonitored areas by subregion

14 RETENTION

Subcatchment_code (FORMAT: CHAR(9)) defines the catchment of retention. A subcatchment_code is: Monitored river subcatchment, aggregated catchment of monitored rivers or an unmonitored area. They are listed in 1 SUBCATCHMENT sheet. These subcatchments should be used. If you cannot find the respective subcatchment, contact the data manager

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment for rention.

Parameter_id (FORMAT: VARCHAR(2)) specifies the periodically reported parameter codes for diffuse sources. They have been indicated in the Comment box of the 14 RETENTION –sheet and are: 16 = Ntot, and 20 = Ptot

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year of retention calculation; if year 2006 then 01.01.2006. If a longer period than one year will be used for retention calculation, it should be indicated in Flag_id.

End_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the last date of the year of retention calculation; if year 2006 then 01.01.2006. If a longer period than one year will be used for retention calculation, it should be indicated in Flag_id.

Period (FORMAT: CHAR(1)); defines the measuring period of retention i.e. Y = year for one year
L = long-term for a longer period

Value (FORMAT: DECIMAL(10(,3))) is the estimated value of retention of the subcatchment

Value_unit (FORMAT: VARCHAR(4)) indicates the units of the reported parameter, for retention t/a

Flag_id (FORMAT: INTEGER(4)) defines any flag identification number for data value explanation. Indcate here if a longer period than one year will be used for retention calculation, e.g. flag_id number = 1 and inform the start and end dates, i.e. 01.01.2002-31.12.2006.

Retention_method (FORMAT: CHAR(1)) specifies the retention calculation/estimation method of a subcatchment;
1 = German method, nutrient mass balance model for river systems
2 = Danish method, nutrient mass balance model for lakes
a) Phosphorus retention in shallow lakes
b) Nitrogen model for lakes
3 = A country specific method

15 DIFFUSE_LOAD (Diffuse load by agricultural pathways, optional)

Part of the diffuse load discharging to the sea is agricultural of origin. This agricultural apportion of the diffuse load could be divided into pathways. Reporting of agricultural load by pathways discharging to the sea is optional and they will be entered in **15 DIFFUSE_LOAD**.

Agricultural apportion of diffuse load to the sea should be divided into pathways and be reported according to the same defined subcatchments as in the riverine load apportionment. Thus, apportions of pathways should be calculated for each defined subcatchment. The subcatchments are: monitored rivers, aggregated monitored rivers, unmonitored part of the monitored rivers and unmonitored areas.

Subcatchment_code (FORMAT: CHAR(9)) defines the catchment of discharge. A subcatchment_code defines a monitored river, aggregated monitored rivers, unmonitored part of monitored river or an unmonitored area (including unmonitored rivers, coastal areas and islands). They are listed in **1 SUBCATCHMENT**. These subcatchments should be used. If you cannot find the respective subcatchment, contact the data manager.

Subcatchment_name (FORMAT: VARCHAR(25)) defines the name of the subcatchment of diffuse load

Pathway_type (FORMAT: CHAR(2)) describes the pathway of agricultural and managed forestry source. A type of pathway can be:
ER = Soil erosion
SR = Surface runoff
NI = Natural interflow

TD = Tile drainage
BF = Ground water
SP = Sum of those pathways which cannot be reported separately

Parameter_id (FORMAT: VARCHAR(2)) specifies the periodically reported parameter codes for diffuse sources. They have been indicated in the Comment box of the 14 RETENTION –sheet and are: 16 = Ntot, and 20 = Ptot

Start_time (FORMAT: DATE(10); dd.mm.yyyy) indicates the first date of the year of retention calculation; if year 2006 then 01.01.2006

Period (FORMAT: CHAR(1)); defines the measuring period of retention i.e. Y = year for one year
L = long-term for a longer period

Value (FORMAT: DECIMAL(10(,3))) is the estimated value of retention of the subcatchment

Value_unit (FORMAT: VARCHAR(4)) indicates the units of the reported parameter, for retention t/a

Flag_id (FORMAT: INTEGER(4)) defines any flag identification number for data value explanation

Diffuse_method (FORMAT: CHAR(1)) specifies the calculation/estimation method of a agricultural pathways

1 = A country specific method
2 =
3 =
4=

DATA COMPILATION TABLES

Data compilation tables have been established in order to ease the data entry procedure but also to verify the data while entering. The tables include formulas, which sum up the entered data by subregion to monitored and unmonitored data or by discharges to the sea and into the inland surface water.
All tables consist of fixed formulas and they have been protected, and cannot be modified. In case of wrong formulas, data manager should be contacted.

It should be noted that one should never delete any rows in the data entry sheets i.e., the sheets of 6 SUBCACHMENT_LOAD, 7 STATION_FLOW, 8 MWWTP_LOAD_FLOW, 9 INDUSTRIAL_LOAD_FLOW, 10 FISH_FARM_LOAD, 12 DIFFUSE_SOURCE, 13 RIVERINE_APPORTIONMENT and 14 RETENTION. Instead of using a 'Delete Row' command 'Clear Contents' command should be used. 'Delete Row' in the data entry sheets will result in a change in the respective compilation table formula, as the range of cells in the formula will be changed accordingly! This may cause wrong results in the table.

The compilation tables are:

21 SC_LOAD_COMPILATION includes loads and flows of obligatory and voluntary parameters by subcatchment and summed up by monitoring status (monitored – unmonitored) and by subregion. In addition, the area specific loads of Ntot and Ptot have been calculated. It compiles information on the data tables **6 SUBCATCHMENT_LOAD and 7 STATION_FLOW**.

22 MWWTP_ COMPILATION includes aggregated loads and discharges of obligatory and voluntary parameters by subcatchments and summed up as direct discharges to the sea and into the inland surface water by subregion. It compiles information on the data table **8 MWWTP_LOAD_FLOW**.

23 INDUSTRY_COMPILATION includes aggregated loads and discharges (obligatory and voluntary parameters) by subcatchment and summed up as direct discharges to the sea and into the inland surface water by subregion. It compiles information on the data table **9 INDUSTRIAL_LOAD_FLOW**.

24 FISH_FARM_COMPILATION includes aggregated loads and discharges (obligatory and voluntary parameters) by subcatchment and summed up as direct discharges to the sea and into the inland surface water by subregion. It compiles t information on the data table **10 FISH_FARM_LOAD**.

25 DIFFUSE_SOURCE_COMPILATION includes Ntot and Ptot loads and water flow data compilation (in three tables) by sources of agriculture and other diffuse sources and summed up by subcatchment and subregion. It compiles information on the data table **12 DIFFUSE_SOURCE**.

26 RIVERINE_ APPORT_COMPILATION includes Ntot and Ptot loads apportioned into natural background loads, diffuse loads and point source loads by subcatchment and summed up by subregion. It compiles information on the data table **13 RIVERINE_APPORTIONMENT**.

27 RETENTION_COMPILATION includes retained Ntot and Ptot by subcatchment and summed up by subregion. It compiles information on the data table **14 RETENTION**.

In case you have any questions kindly contact the data manager.

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